The Implementation of Sustainability Taxonomies: The Case of South Africa

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In recent years, many jurisdictions have developed sustainability taxonomies that aim at increasing transparency on financial markets and redirect capital flows to sustainable investments. Based on semi-structured expert interviews, this case study on South Africa's Green Finance Taxonomy (GFT) focusses on the implementation of sustainability taxonomies and addresses the question of what factors influence the adoption by potential users. It finds that one year after its publication, the GFT has hardly been used in practice. Important factors hindering an effective implementation are a lack of regulatory embedding, an unclear relationship with the EU taxonomy, a hesitancy of financial market participants to build-up capacities to collect the necessary data and disclose on the GFT, and fossil path dependencies in South Africa's economy. These findings contribute to the emerging academic knowledge about sustainability taxonomies and have important policy implications (e.g. regarding the need for accompanying governance measures) for implementation processes in many countries in the coming years.

Keywords: Sustainability Taxonomies, Green Finance Taxonomies, Sustainable Finance, Green Finance, Sustainability Disclosure, Sustainability Reporting, South Africa

1. Introduction

Sustainability taxonomies are a salient policy innovation in the governance of financial markets of recent years.[4] As comprehensive classification systems, they are meant to provide a common definition to markets participants on what constitutes a sustainable economic activity. While the idea of sustainability taxonomies is still relatively new,[5] the

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[5] To our knowledge, the Climate Bonds Initiative (CBI) developed the first full-fledged taxonomy in 2013.

pace of global diffusion of this policy tool is remarkable. By now, more than 25 jurisdictions on all inhabited continents have started to develop a taxonomy or have already introduced one (Cabrera, Youngeun Shin, & Hinojosa, 2022, p. 8). In most cases, though, the taxonomy process is still in a rather early stage and only very few taxonomies have already been implemented.

In general, sustainability taxonomies are meant to create transparency on the sustainability of economic activities and reduce greenwashing. A better availability of sustainability information on financial markets is supposed to help market participants in taking sustainability risks into account and discharge their responsibility to align their investment decisions with sustainability goals. This should ultimately lead to a redirection of capital flows to more sustainable investments. Advocates of sustainability taxonomies thus see them as a tool that contributes to meeting the huge financing needs associated with achieving a just transition towards a climate neutral economy, a tool that helps to direct capital away from fossil industries and to reduce systemic risks on financial markets in the transformation (Cabrera et al., 2022, p. 5).

To further these objectives, taxonomies can, in principle, be used in several ways: Financial market participants can disclose the share of their assets that are aligned with a taxonomy and take taxonomy-alignment into account in their investment decisions, taxonomies can be used to determine the eligibility of investment projects for green financial products (such as green bonds), real economy actors can report on the share of taxonomy-alignment of their turn-over or investment expenditures, governments can report on the share of their spending that finance taxonomy-aligned activities, and information on taxonomy-alignment can be used in (public) procurement decisions.[6]

To what extent sustainability taxonomies can really live up to the promises that defenders associate with this governance tool remains to be seen. Due to the recent emergence of sustainability taxonomies, empirical evidence on their merits and pitfalls is very limited. This qualitative case study on South Africa's Green Finance Taxonomy (GFT) contributes to closing the research gap on sustainability taxonomies by focussing on their implementation because a widespread adoption of a taxonomy by its potential users is a necessary precondition for any positive contribution that it might be able to make. The GFT was introduced as voluntary tool in April 2022. That South Africa was compared to many other countries relatively early in developing and publishing its taxonomy makes it

[6] For a more comprehensive list of potential use cases of sustainability taxonomies, see World Bank Group (2020, pp. 15-16).

a suitable case for a study on the implementation process. In addition, the high stakes associated with the transformation of South Africa's economy towards sustainability and the relatively large size of its financial sector underline the potential relevance of a sustainability taxonomy in the country.

This paper is structured as follows: Section 2 provides a literature review of the research on sustainability taxonomies and identifies research gaps with respect to the implementation of taxonomies and the situation in other jurisdictions than the EU. Section 3 argues that a case study on South Africa's GFT that builds on data collected in expert interviews is well-suited to address these research gaps. Section 4 provides some background information on the development process and the design of the GFT. Section 5 presents the findings of the research project and describes the slow movement of governance actors, the unclear relationship with the EU taxonomy, the hesitancy of market participants to use resources and build-up capacities for GFT-adoption, and fossil path dependencies in South Africa's economy as factors that hinder a widespread uptake of the taxonomy so far. Finally, section 6 highlights policy implications and concludes.

2. Literature review

Research on sustainable finance can be divided into two strands. First, a more academic literature addresses a diverse set of questions related to sustainability taxonomies but focuses in most cases on the EU taxonomy. Secondly, several publications by international organisations take a broader geographic perspective and address often mainly practical questions related to the design of taxonomies.

Some of the academic contributions on sustainability taxonomies discuss in general the role that the EU taxonomy can – or cannot – play in the transformation of the economy towards sustainability (Ahlström & Sjåfjell, 2022; de Oliveira Neves, 2022; Knoll, 2022). Critics fear, for instance, that another round of a problematic financialisation might by associated with sustainability taxonomies because they see the introduction of taxonomies as an attempt to settle genuinely political questions with a highly complex, technocratic and potentially undemocratic accounting regime that is not able to accommodate distributive and participatory concerns (Knoll, 2022, p. 189).

Other scholars address more specific questions, for instance with respect to the design of the EU taxonomy. Schütze and Stede (2021) assess the screening criteria included

in the EU taxonomy and find that they are not ambitious enough to support the transformation towards climate neutrality. Some contributions investigate the relationship of the EU taxonomy with existing sustainability tools, such as environmental assessments (Dusík & Bond, 2022) or sustainability ratings (Dumrose, Rink, & Eckert, 2022). Alessi and Battiston (2022) investigate the relationship of taxonomy alignment and transition risks in financial portfolios. Finally, some contributions focus on the EU taxonomy and specific sustainability objectives, such as the promotion of a circular economy (Moneva, Scarpellini, Aranda-Usón, & Alvarez Etxeberria, 2023) or social objectives (Hilbrich, 2021).

In general, though, the academic literature on sustainability taxonomies is still limited and has several gaps. First, questions concerning the implementation of sustainability taxonomies play only a minor role. Secondly, with only a few exceptions (Nedopil Wang, Lund Larsen, & Wang, 2022), research has focussed on the EU taxonomy and neglected the situation in other jurisdictions in which taxonomies might play a role in the future. This reflects a problematic geographical bias that has repeatedly been lamented with respect to research on sustainable finance in general (Cunha, Meira, & Orsato, 2021, p. 3831; Monasterolo et al., 2022, p. 1). Thirdly, assessments of the impact of sustainability taxonomies on capital flows are still lacking. However, due to the very recent nature of taxonomies, thorough analyses in this respect are at this point very difficult.

The second of the gaps of the academic literature concerning its geographic focus is to some extent alleviated by several reports compiled by international organisations that take also the situation in other jurisdictions into account (Ehlers, Gao, & Packer, 2021; ICMA, 2021; OECD, 2020; UN-DESA & IPSF, 2021; World Bank Group, 2020). These reports often map existing sustainable finance definitions and taxonomies in different jurisdictions and provide recommendations for policy makers that are involved in the development of a sustainability taxonomy. However, this literature also pays only comparatively little attention to the implementation of sustainability taxonomies and the question of what factors influence whether taxonomies are actually used in practice.[7]

[7] An exception in this respect is a report by the Platform on Sustainable Finance (an advisory body of the European Commission) that describes implementation challenges with respect to data and usability (Platform on Sustainable Finance, 2022). However, the report focusses on the EU taxonomy.

3. Research design: A qualitative case study on South Africa's GFT

This study addresses two of the research gaps identified in the last section: the lack of research on the implementation of sustainability taxonomies and the lack of research on the situation in other jurisdictions than the EU. We focus on the question of what factors influence the adoption of taxonomies by potential users. As the most important of the diverse use cases of sustainability taxonomies concern financial markets, we only investigate the adoption of taxonomies by financial market participants, such as banks, asset managers, and pension funds, and the real economy firms they invest in.[8] We are interested in factors internal to these actors, such as their motivations and capacities, but also factors that concern more systematic framework conditions. In the following, we argue that a qualitative case study on South Africa's GFT is well-suited to address this research question.[9]

3.1 Methodology

To investigate our research question, we chose a qualitative case study approach that relies mainly on data collected in semi-structured expert interviews. Due to the early stages in which taxonomy processes are in many countries, our research takes an exploratory form and aims at generating first hypothesis on factors that influence the implementation of taxonomies. A qualitative research approach that focusses on a single case is well-suited to achieve this purpose by allowing for an in-depth assessment of the relevant social processes and structures and the motivation of the actors involved in them.

Between February and April 2023, the research team conducted 44 semi-structure expert interviews with representatives of financial market participants, real economy enterprises, consultancies, government departments, regulators, development finance institutions, business associations, civil society organisations, and research institutions. Interview participants were purposively chosen to gain insights in the perspectives of different stakeholder groups. The interview guides were adapted to focus on those issues for

[8] We will thus, for instance, not consider the adoption of sustainability taxonomies in public procurement.
[9] Our methodological approach reflects also the need for more qualitative research in the area of sustainable finance in general; for instance, on the motivation of relevant actors. That there is a research gap in this respect in one of the conclusions of the systematic literature review on sustainable finance of Cunha et al. (2021, p. 3832).

which the respective interview partner was well-positioned to provide insights. Interview partners were assured anonymity.

The interviews were recorded, transcribed and analysed following the method of a (structuring) quantitative content analysis (Kuckartz & Rädiker, 2023). Using the software Atlas.ti, the interview transcripts were coded with thematic categories that were partly derived deductively from the research question and potentially relevant factors and partly developed inductively engaging with the transcripts. Findings from the analysis were validated on two workshops in Cape Town and Johannesburg in April 2023 on which preliminary results of the study were presented and discussed with stakeholders of the GFT.

3.2 Case Selection

South Africa's GFT was selected as case because of the stage of its development and implementation process and characteristics of South Africa's economy and financial markets. First, although South Africa was not the first country that completed the drafting and published a sustainability taxonomy, it was still relatively early. Unlike in many other countries, a case study in South Africa has thus already the potential to arrive at conclusions on the implementation of sustainability taxonomies.

Secondly, achieving the transformation towards climate-neutrality is in South Africa's "economy of extremes" (Ashman, 2021) especially important but also especially challenging. The carbon-intensity of South Africa's economy is extremely high and vested interests in the minerals and energy sector are very influential in the economic and political sphere of the country (Baker, Newell, & Phillips, 2014; Fine & Rustomjee, 1996). Extreme economic inequalities and widespread poverty are additional challenges that can affect public and political support for the transformation towards climate-neutrality in South Africa. A case study on the GFT is thus interesting in its own rights and has the potential to generate findings for contexts that are of particular importance for the transformation of the world economy. In addition, the pronounced form that some of the factors that might be of relevance for the implementation of a taxonomy have in South Africa, mechanisms fostering or hindering an implementation might be particularly visible.[10]

[10] As many jurisdictions are still in the development phase of the taxonomy process, the South African case is in this respect rather unusual (although there are certainly several other countries that already published a taxonomy). In addition, the economic and political structures of the country are in the described ways

The stakes for a successful implementation of a sustainability taxonomy are also high in South Africa because the country has a relatively large financial market which makes sustainable finance instruments potentially influential levers. In addition, South Africa's financial market and financial actors from the country have an important role in the region (Draper & Scholvin, 2012). The Johannesburg Stock Exchange (JSE) is by far the largest stock exchange on the continent and many South African banks, such as Standard Bank, First Rand, and the ABSA Group, are important players in many countries in Southern Africa. If these institutions adopt the GFT, they might use it not only for their activities in South Africa but also in other countries.

4. Background: Development and Design of the GFT

South Africa's GFT was published in April 2022. The development process of the taxonomy was initiated and financed by International Finance Cooperation (IFC) in partnership with other donors. The process was overseen by a *Taxonomy Working Group* chaired by the National Treasury of South Africa. This Group included several private financial market participants and industry associations, South African development banks, government departments and financial sector regulators. Civil Society Organisations and trade unions were not part of the group. On behalf of the Taxonomy Working Group, the business association National Business Initiative (NBI) and the consultancy Carbon Trust drafted the GFT and conducted stakeholder consultations.[11]

The GFT is based on the EU taxonomy for sustainable activities and is in its structure identical to this taxonomy. To be taxonomy-aligned, an economic activity has to fulfil three conditions: First, it has to make a substantial contribution to one environmental objective. Secondly, it has to Do No Significant Harm (DNSH) to the other environmental objectives included in the GFT and, thirdly, comply with social minimum safeguards. Until now the taxonomy specifies only criteria for two environmental objectives: climate

quite extreme. The country could thus be described as an "extreme case" for a case study on sustainability taxonomies. The selection of extreme cases is a common strategy in case study research (Gerring, 2007, pp. 101-105).

[11] The NBI is an association of South African and multinational companies. It has members from different sectors, including the heavyweights of South Africa's carbon-intensive economy, such as Sasol, Anglo-American, and Eskom, and international oil companies, such as BP and Shell. The Carbon Trust is an international not-for-profit consultancy that focusses on climate change.

mitigation and climate adaptation (future expansions might add criteria for additional environmental objectives concerning the sustainable use of water and marine resources, pollution prevention, sustainable resource use and circularity, and ecosystem protection and restoration).

As the authors of the GFT used the EU taxonomy as a starting point and only adapted it to the South African context, the GFT is not only in its structure but also in its specific screening criteria very similar to the EU taxonomy. A comparison study found that, for instance, 78% of the criteria for a substantial contribution to one of the environmental objectives of both taxonomies are very similar (National Treasury, 2022, p. 7). Where both taxonomies differ, the level of ambition can be higher in either of the two taxonomies. Where both taxonomies differ, the level of ambition can be higher in either of the two taxonomies. According to the comparison study, for 7% of the activities the criteria of the GFT are more ambitious or more detailed, for 12% the criteria of the EU taxonomy (National Treasury, 2022, p. 9).[12]

Carbon Trust and NBI conducted several pilots with potential users of the taxonomy between November 2021 and June 2022. The pilots covered different potential use cases, including the use of the GFT in determining the project eligibility for green bonds, its inclusion in decision-making of development finance institutions, the use of the GFT in public procurement of municipalities and its use by asset managers.[13] However, the pilots often remained rather theoretical and participants usually did not get to the stage of practically using the GFT; that is, for instance, successfully producing a disclosure report on the share of taxonomy alignment of a financial product.

5. Findings: The slow start and unclear future of the GFT

While the GFT seems to have sparked some attention by financial market participants around its launch and the implementation of the pilots, momentum seems to have waned

[12] For instance, nuclear and gas-fired electricity generation is under certain conditions taxonomy-aligned according to the EU taxonomy while the GFT excludes these activities. For other activities, such as the manufacturing of plastics in primary form or centralised wastewater treatment, the GFT includes less ambitious criteria then the EU taxonomy (National Treasury, 2022, pp. 48-49).

[13] Lessons learnt of the pilots have been published in four brief case studies (Carbon Trust & NBI, 2022a, 2022b, 2022c, 2022d).

between the completion of the pilots in June 2022 and the period of the main data collection from February to April 2023. Until now the GFT has hardly been used and there seems to be not much intention by most financial market participants to start an implementation process in their respective institutions soon. We identify several factors that contributed to the fact that the GFT has not yet become a substantial factor in South Africa's financial sector related to the governance and regulatory embedding of the GFT, its relationship with the EU taxonomy, the usability of the GFT and capacities of potential users, and fossil path dependencies in South Africa's economy. In the following, we provide details on the role of these factors.

5.1 Governance and regulatory embedding

Governance actors are not only primarily responsible for the development of a sustainable finance taxonomy they also play an important role in its implementation. Until now, though, engagement of governance actors in South Africa in the implementation process of the GFT has remained limited. For instance, unlike in the EU, no mandatory disclosure requirements with respect to the GFT have been issued so far and no standards for sustainable financial products based on the GFT have been developed. The purpose, main use cases, and timeline of implementation of the GFT have not become clear to the financial sector. Many financial market participants also do not seem to be convinced that the GFT will really provide an authoritative definition of green activities that will lead to a harmonisation of the different existing understandings of "green" in the sector.

A factor contributing to the lack of confidence of market participants in this respect might be that public institutions in South Africa themselves develop and use other classification systems for sustainable activities. For instance, the government developed a climate budget tagging system that differs from the GFT (although the system at least allows for the optional and additional marking of certain spending as GFT-aligned).[14] In addition, there are efforts of different actors in South Africa to develop principles or criteria for just transition finance that might lead to another parallel system in the future. These parallel initiatives fuel doubts that the GFT will really be able to overcome existence of

[14] That South Africa will arguably not report on GFT-alignment of its public budget is also problematic for the implementation of the GFT because it impedes that one can determine to what extent sovereign bonds (and financial products that invest in sovereign bonds) are aligned with the GFT.

different definitions of green investments and the problematic implications (lack of transparency, high transaction costs, etc.) associated with this fragmentation.

The most explicit action of a governance actor concerning the regulatory embedding of the taxonomy is arguably the reference of the GFT by an important regulator, the Financial Sector Conduct Authority (FSCA), in the *FSCA Statement on Sustainable Finance and Programme of Work* from March 2023:

> "FSCA will through endorsement and engagements with supervised entities, actively encourage voluntary adoption and use of the taxonomy in relevant activities. Over the longer term, work will be done to consider the extent that the taxonomy should be mandated." (FSCA, 2023, p. 7)

The activities of regulators with respect to the GFT seem to follow a strategy of gradually increasing the bindingness of governance measures over time. This approach is very common in the governance of South Africa's financial market. Regulators start, for instance, with a communication that includes an endorsement of certain general principles or documents, publish guidance notes or set voluntary standards later on, before they issue a directive or implement a full-fledged regulation.[15] This governance approach follows the intention to create space to experiment with and adjust new governance measures and give market participants time to adapt their procedures before new rules become mandatory. Usually, a few frontrunners will start to align their procedures with the new rules and can test and give feedback on their practical applicability. Other market participants are supposed to follow later on when more binding governance measures are taken.

However, whether the mere endorsement of the GFT and the mentioning of the possibility of a regulation at a later point in time in the FSCA statement will be sufficient to drive GFT uptake is questionable. With respect to the implementation of the GFT, the stepwise uptake of the taxonomy with some frontrunners and others that follow is associated with challenges related to data availability. For many types of financial instruments, it seems hardly possible (or at least very costly) to assess GFT-alignment if most other financial market participants do not disclose on the GFT. Take, for instance, a mutual fund that invests in many different securities. To report on the degree of GFT-alignment of this fund, each of the securities would have to be checked for alignment. If investment chains are complex, fund managers might be quite remote from the economic

[15] An example of a gradual approach to the governance of financial markets in South Africa concerns the consideration of ESG factors by pensions funds. In 2011, a very general requirement for pension funds to consider ESG issues in investment decisions was included in Regulation 28 of the Pension Funds Act. In 2019, the FSCA released more concrete guidance note on how pension funds should comply with this requirement (FSCA, 2019).

activities they are investing in. In addition, each fund that holds, for instance, a share of a company will have to do the same assessment again.

This would be different if mandatory disclosure rules ensured that the assessment is done only once at the point in the investment chain where it can be done with the least amount of effort. All other financial market participants could than use this data. In this line, an investment manager told us that

> "a next step that would be very helpful to players such as ourselves is if companies themselves actually calculate their alignment and then we can incorporate it. Then it's simply a case of these are our holdings; this is the percentage alignment that the company has calculated themselves and hopefully it's been audited in some way and then we can just apply portfolio weights to come up with an alignment metric."

The adoption of the GFT thus seems to be associated with a coordination problem that the described gradual approach to governance cannot solve. If it is very difficult and costly for individual market participants to start using the taxonomy if many others do not, incentives for individual participants to act as frontrunners will be slim.

A reason for the slow movement of South African governance actors with respect to the taxonomy might be that responsibilities with respect to the governance and regulatory embedding of the GFT are distributed among several actors. For instance, the National Treasury chaired the central bodies of the taxonomy process, the *Taxonomy Working Group* and the later *Taxonomy Oversight Committee*. The Prudential Authority (PA) within the South African Reserve Bank (SARB) and the Financial Sector Conduct Authority (FSCA) are important financial market regulators that could potentially integrate the taxonomy into guidelines and regulations. In addition to such public institutions, private bodies that also provide a form of governance to financial markets could potentially play a role in the implementation process. For instance, the JSE could link its requirements for listed firms and listed debt instruments with the GFT (or create at least a separate segment for taxonomy-aligned debt instruments).

The extensive need of coordination among these actors and the mandated all of them have to operate in might have slowed down the implementation of governance measures concerning the GFT. In addition, the distribution of responsibilities might have led to some degree of diffusion of responsibility. That implementation measures with respect to the taxonomy affect the mandates of various institutions also increases the probability that not all them show the same degree of buy-in in the taxonomy process.

5.2 Relationship of the GFT with the EU taxonomy for sustainable activities

The motivation behind the development of the GFT was at least partly linked to international capital and the establishment of the EU taxonomy. Proponents of the taxonomy process wanted to ensure that South Africa is "ready" if, at some point, disclosure on a taxonomy is required by investors. The similarity of the GFT with the EU taxonomy could, in principles, provide a push for the implementation of the GFT because financial and non-financial companies of a certain size in the EU have to disclose also on the taxonomy-alignment of their undertakings outside the EU. In addition, disclosure on taxonomy-alignment is mandatory for financial products offered in the EU. Data on taxonomy-alignment of investments in South Africa that are financed with financial instruments sold in the EU thus needs to be collected in the future.

However, until now external pressure related to the introduction to the EU taxonomy could not provide a clear incentive for the implementation of the GFT. Disclosure requirements related to the EU are only stepwise coming into force in this and the coming years (Commission Delegated Regulation (EU) 2021/2178). The described mechanism might thus provide a push for the implementation of the GFT at a later point in time.

In addition, the EU did not recognise the GFT as equivalent to its own taxonomy (and, as emphasized by some of our interview partners, seems to be very hesitant to do so). Such a recognition would mean that investments that have been shown to be GFT-aligned would be treated as being aligned with the EU taxonomy without a further assessment.[16] Initially, by aligning the GFT so closely with the EU taxonomy, South Africa's government hoped to achieve such a recognition and avoid that with the EU taxonomy a tool that is not adapted to the South African context becomes the standard on its financial market.

Due to the similarities of both taxonomies (rendering these taxonomies to a relatively high extent interoperable), a prior assessment of GFT-alignment might still make it easier for investors to show alignment with the EU taxonomy (even without a formal recognition). However, in the absence of any further incentives to use the GFT, investors might decide to opt for the EU taxonomy directly and refrain from adopting the GFT.

[16] Such a recognition would not be without precedent, as the China Green Bond Principles (China Green Bond Standards Committee, 2022) published in July 2022 allows oversea issuers to use the EU taxonomy (and the Common Ground Taxonomy) for the identification of green projects instead of the Chinese taxonomy (the Green Bond Endorsed Projects Catalogue). To establish a process to legally recognise other taxonomies is also one of the recommendations to the European Commission by the High-Level Expert Group on scaling up sustainable finance in low- and middle-income countries that was initiated by the EU itself (HLEG, 2023, p. 9).

5.3 Usability of the GFT and capacities of potential users

The GFT is certainly a complex document and assessing GFT-alignment of economic activities requires resources. A lot of the data necessary for GFT assessments is not yet available and would have to be collected before a disclosure report can be produced. Some of our interview participants thus emphasized the costs that would be associated with GFT-disclosure. Checking whether an activity meets the DNSH criteria included in the taxonomy seems to be especially burdensome. Additional costs can also arise if disclosure reports are verified by external service providers to increase their credibility. In addition, the efforts associated with reporting on GFT-alignment would add to the work that goes into other types of non-financial disclosure reports that potential users of the taxonomy already publish (Stolowy & Paugam, 2018).[17] The efforts that are associated with adopting the GFT have certainly contributed to the hesitancy of market participants to start an implementation process – in particular as the economic benefits of adopting the GFT (e.g. in terms of an improved access to capital) are unclear.

Adopting the GFT also requires specific expertise. In many cases, GFT-disclosure would require that not only the specialised ESG-teams within the institutions but also staff in other departments understands the GFT because they would have to conduct the assessment of GFT-alignment in their daily work. The institutions responsible for South Africa's taxonomy process tried to address capacity constraints by conducting the above mentioned pilots, providing potential users with a number of templates, tools, and checklists, and organising a few webinars.[18] These activities, though, have not fully removed the concerns of financial market participants regarding the expertise needed to adopt the GFT.

As the GFT could be used by very different actors (e.g. real economy firms, banks, pension funds, etc.), existing expertise and capacities certainly vary considerably among the relevant actors and arguably depend, for instance, on the legal form, size and business model of the respective institution. Listed companies already collect much more sustainability data than unlisted companied. In addition, to conduct assessments of GFT-

[17] Important regulations and guidelines that include requirements on sustainability reporting in South Africa are, for instance, the King IV Code (mandatory for companies listed at the Johannesburg Stock Exchange) and the Code for Responsible Investment in South Africa (CRISA). In addition, international guidelines such as those of the Task Force for Climate-Relate Financial Disclosure (TCFD) play an important role in the country.

[18] The tools, templates, checklists and recordings of webinars can be accessed on the website of South Africa's Sustainable Finance Initiative: https://sustainablefinanceinitiative.org.za/working-groups/taxonomy-working-group/.

alignment is certainly less viable for smaller projects and micro, small, and medium enterprises (MSMEs). At the moment, the GFT does not include any provisions to ease GFT-application in such cases.[19]

5.4 Fossil path dependencies and vested interests

As already described, carbon-intensive industries, such as mining, chemicals, and energy generation have a central role in South Africa's economy. The financial sector of the country is heavily geared towards financing investments in these sectors (Lowitt, 2021; Neumann, 2023, chapter 6). In this context, one could expect that the introduction of the GFT would be met with resistance of many real economy firms and financial market participants. After all, sustainability taxonomies ultimately pursue the aim to steer investments away from the business models that still dominate South Africa's economy.

However, the development of the GFT does not seem to have stimulated to the same extent lobbying activities than could be observed when the EU taxonomy was developed.[20] As the GFT was not part of a comprehensive policy package aiming at the greening of the economy and was planned from the beginning as voluntary tool, the relevant actors in South Africa might simply not have considered the GFT as serious threat to their business models.

At the same time, the political and economic pressure to shift to less carbon intensive ways of production in South Africa increases. For instance, the Carbon Border Adjustment Mechanism (CBAM) of the EU spurs considerable concerns in export-oriented fossil industries in South Africa. In this context, some actors that have economic stakes in carbon-intensive economic activities might see also benefits in the introduction of the GFT if they assume that the GFT would rather mobilise additional (foreign) capital for green investment without steering investments away from their traditional business models. They might consider the GFT as a tool that facilitates the transformation of production

[19] However, as the GFT is a voluntary tool, market participants could themselves decide to focus on specific parts of the GFT and refrain from applying other.

[20] A major point of controversy in the development process of the EU taxonomy was the decision to classify energy generation using natural gas or nuclear power as, under certain conditions, sustainable in the taxonomy. Lobbyist seem to have made quite some effort to achieve this classification (Schreiber, Pinson, Can Ileri, & Jeandon, 2020). Even prior to this, several environmental non-governmental organisations had temporarily suspended their participation in the expert group that advised the European Commission in the development of the taxonomy in protest. They criticized in particular the criteria for forestry and bioenergy included in the EU taxonomy and the influence the lobbying had on their formulation (WWF, 2021).

processes in some carbon-intensive industries and thereby help to remedy their transitional climate risks.

That does not mean, though, that fossil path dependencies do not hinder the implementation of the GFT. For instance, due to the amount of assets they own, pension funds are often considered as potential drivers of taxonomy uptake. If pensions funds would make disclosure on GFT-alignment a prerequisite for their investments, this requirement could be passed on through the investment chain and lead to a widespread uptake of the taxonomy. However, some of the largest South African pension funds are the retirement funds of the large fossil companies of the country, such as Eskom and Sasol. Incentives for those funds to push for the implementation of the GFT might be low. In addition, the South African pension funds are required to invest primarily in domestically (this is especially the case for the largest pension fund of the country, the Government Employees Pension Fund (GEPF)). Due to the limited number of firms in South Africa's formal economy and the very high carbon-intensity of the country's economy (Arndt, Davies, Makrelov, & Thurlow, 2013), the potential of these pension funds to shift investment away from dirty activities can be limited if they want to keep a diversified portfolio.

In general, interview participants often mentioned a lack of bankable green projects as an important barrier to green finance, which is certainly at least partly the results of fossil path dependencies. If investment opportunities that are aligned with the GFT are very limited, this might decrease the motivation of market participants to report on the GFT and take GFT-alignment in their investment decisions into account. Similarly, existing research found that fossil path dependencies played an important role in preventing a take-off of green bonds in South Africa (Neumann, 2023).

6. Conclusion and policy implications

This study finds that the implementation of South Africa's GFT has shown very little progress so far and explains this fact by the behaviour of governance actors, the unclear relationship of the GFT with the EU taxonomy, the additional burden that potential GFT users associate with its adoption, and fossil path dependencies in South Africa. As the time period since the publication of the GFT in April 2022 is still limited, the lack of uptake could be mainly due to the need of stakeholder to get used to the taxonomy and integrate it in into its procedures. However, as we observed hardly any steps of potential

users in this direction, we assume that the GFT will only be widely adopted in the future if at least some of the identified factors change.

6.1 Potential impact on capital flows

While this paper did not focus on the impact of the GFT, the data collected in this study provides also some preliminary insights with respect to the question in what ways sustainability taxonomy might be able to contribute to transforming the economy and where its limitations lie. On the one hand, many of our interview participants from the financial sector in principle seemed to be willing to take GFT-alignment into consideration in their investment decisions. It is thus not unlikely, that a properly implemented GFT can have impacts on financial flows. One the other hand, it remains unclear, to what extent these statements would be translated in action and how large the contribution of the GFT in shifting capital flows would then be. Apparently, the outlook of a better access to capital does not yet incentivise actors to show GFT-alignment of their projects or financial products. Expectations in this respect by financial market participants do not seem to be strong enough to drive uptake.

In spite of the potential contribution of the GFT, it should also be kept in mind that taxonomies will not address many of the existing barriers that hamper the financing of projects that are conducive to achieving a just transition to a sustainable economy. For instance, in the South African context, it seems to be especially challenging to get finance for early stage and high-risk projects, MSMEs and small projects and for actors with limited commercial track record (Lowitt, 2021). It is not to see how the GFT could alleviate these issues. Furthermore, a just transition also requires investments in social sectors, such as education and reskilling and social protection. At least as long as the GFT is not expanded to include also social objectives, it will not make a contribution to channelling finance to projects in such sectors. Due to these limitations, sustainability taxonomies can arguably only make a positive contribution if they are part of a comprehensive policy strategy aiming at a just transformation of the economy.[21] However, these claims con-

[21] The success of sustainability taxonomies is also depended on other transformative policies because regulatory and fiscal reforms (e.g. a carbon tax or the Carbon Border Adjustment Mechanism (CBAM) of the EU) might only create the business case for shifting to less carbon-intensive investments. Only if financial market participants see credible steps in the direction of more effective climate policies, they might react to the sustainability information that taxonomy disclosure can provide because only in this case they might see sustainability risks as financial risks.

cerning the impact of sustainability taxonomies on investments remain at this point somewhat speculative. It will thus be an important task for future research to generate clearer evidence in this regard.

6.2. Policy implications

As we cannot provide definitive evidence on the impact of sustainability taxonomies, policy recommendations based on our findings can only have a counterfactual form. *If* the widespread use of sustainability taxonomies would indeed have the desirable impacts that policy makers want to bring about, the following measures are advisable:

First, taxonomies should be developed with a clear purpose in mind that is widely communicated and governance actors need to provide clear guidance by whom and for what the taxonomy should be used. The communication needs to set a credible signal to stakeholders that the taxonomy will indeed become a common language on financial markets. To achieve this, a coherent approach of all relevant governance actors is necessary. Due to the described coordination problem that it is very difficult for individual market participants to disclose on the taxonomy if most others do not, it is questionable that a widespread adoption of a taxonomy can be achieved without mandatory disclosure rules.[22] In addition, development banks might support the spread of a taxonomy by requiring taxonomy-assessments in their financing decisions. Introducing tax incentives for taxonomy-aligned investments might be another option to improve uptake if benefits are considered to outweigh the reduction of fiscal space and potentially detrimental distributive consequences. International fora, such as the Sustainable Banking and Finance Network (SBFN), hosted by IFC, and the International Platform on Sustainable Finance, initiated by the EU, can facilitate exchange among governance actors on best practices in the implementation of taxonomies.

Secondly, if the purpose of the taxonomy is at least partly to attract or keep foreign capital, it is important to achieve a high degree of interoperability with other relevant taxonomies. In the case of South Africa, the GFT is very similar to the EU taxonomy. However, the EU still does not seem to be willing to formally recognise the taxonomy as equivalent. For taxonomies of countries such as South Africa to play an important role, it

[22] In this line, one of our interview participants stated: "the only way it has to be made, it's just if it's compulsory".

might be necessary, though, to achieve some form of recognition, be it in bilateral negotiations or in a multilateral forum. Otherwise, there is a risk that taxonomies of important markets (above all the EU taxonomy) will ultimately prevail also in those jurisdictions that are currently trying to develop and implement their own taxonomies.

Thirdly, concerns regarding the complexity of taxonomies and the amount of effort associated with disclosing on it should be addressed with the provision of trainings, exchange formats, and supporting services. Simplifying taxonomies is in most cases not advisable because some degree of complexity and a high degree of granularity is necessary for a taxonomy to be able to fulfil its role to create transparency and avoid greenwashing.[23] However, it might be an option to somewhat ease the burden of implementation by allowing for materiality consideration in the application of DNSH criteria. In addition, it is beneficial to align different reporting requirements and design taxonomies as much as possible in a way that existing data collection systems can be used. In any case, it can be expected that the burden of implementation decreases once reporting procedures are established, digital tools for the assessment process become available, and consultancies offer targeted support for the implementation.

Section 3 argued that an investigation of the South African case can generate interesting insights also for many other countries that are currently in the process of developing and implementing sustainability taxonomies. Certainly, some of our findings might be influenced by idiosyncratic factors of the South African context; fossil path dependencies might be somewhat less important in many other countries, the relationship with the EU taxonomy might play a different role depending on the importance of EU investments, and capacities of financial market participants to produce disclosure reports might be less or more developed. However, it is very plausible that the main conclusion of this paper is also valid for many other countries: If a sustainability taxonomy is introduced without enforcing its adoption by regulatory measures, without having clear incentives for an adoption in place, and without providing sufficient guidance for the usage of the taxonomy, there is a great risk that the taxonomy will simply not be used.

[23] This point is reflected in the following quote of one of our interview participants: „I think it's necessarily complex. I think, the topic that it's dealing with is a complex topic and it's not straightforward. So I mean, I think, training on the taxonomy is probably the most useful approach rather than trying to simplify the taxonomy itself."

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