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The Case for Including Surrounding Environmental Impacts

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Discussion paper

Enhancing the EU Taxonomy for Sustainable Real Estate: The Case for Including Surrounding Environmental Impacts

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Abstract

This paper examines the limitations of the current European Union (EU) Taxonomy for Sustainable Activities as applied to real estate investments. It argues for a revised approach that incorporates the broader environmental impacts of real estate assets, including the effects on surrounding investments and infrastructure. By integrating these considerations, the taxonomy can promote more holistic and sustainable urban development practices.

Introduction

The European Union (EU) Taxonomy is a critical component of the EU's strategy to achieve climate neutrality by 2050. This classification system defines which economic activities can be considered environmentally sustainable, aiming to direct investments towards projects that support the transition to a green economy. However, the current framework primarily focuses on the sustainability of individual buildings without adequately considering the environmental impacts of their surroundings. Enhancing the EU Taxonomy to include surrounding environmental impacts is essential for a holistic approach to sustainable real estate, ensuring that buildings and their environments contribute to sustainability goals. This paper will also explore the significant influence of external measures by governments and other stakeholders on real estate valuation, particularly from a climate change perspective. Furthermore, we will examine the interdependence of sustainable investments and how coordinated strategies, such as those outlined in the EU Taxonomy, can prevent counterproductive outcomes and promote holistic sustainability.

In recent years, significant advancements have been made in understanding the implications of sustainable finance and environmental policies. Studies highlight that integrating surrounding environmental impacts into the taxonomy could improve the overall environmental performance of real estate projects. For instance, including broader environmental criteria can lead to better planning and development practices that consider ecological connectivity and the cumulative impacts of urban development (Jenkins, 2022; Norang et al., 2023). Moreover, evidence suggests that a comprehensive approach to sustainability, encompassing both buildings and their

environments, can enhance societal impacts and reduce carbon emissions more effectively (Lucarelli et al., 2020).

The integration of surrounding environmental impacts into the EU Taxonomy is not only beneficial for environmental sustainability but also aligns with broader economic and social goals. It promotes the development of resilient and adaptable urban spaces that can withstand the challenges of climate change while fostering healthy and sustainable communities. By adopting this more inclusive approach, the EU can set global standards for sustainable real estate and urban development.

The EU Taxonomy for Sustainable Activities is a classification system to guide investment towards environmentally sustainable economic activities. While its application to real estate has been instrumental in steering capital towards sustainable buildings, this paper posits that the taxonomy should also consider the environmental impacts on and from the surroundings of the building (EU Commission, 2020). This regulation, established to steer investment towards sustainable economic activities, has broad implications across various sectors. This paper focuses on its impact on the real estate sector, particularly in assessing the sustainability of the built environment and regulatory compliance.

Literature review

The EU Taxonomy Regulation, which entered into force in June 2020, is a comprehensive framework for classifying environmentally sustainable economic activities. This regulation is a cornerstone of the EU's sustainable finance strategy, which seeks to channel investments towards projects that support climate neutrality and broader environmental goals. The scope of the EU Taxonomy Regulation is extensive, encompassing several key dimensions:

1. **Environmental Objectives**: The EU Taxonomy defines six environmental objectives: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems. Economic activities must contribute substantially to at least one of these objectives to be classified as sustainable (Beerbaum Dr., 2021).
2. **Technical Screening Criteria**: For an activity to be recognized as environmentally sustainable, it must meet detailed technical screening criteria for each objective. These criteria ensure that the activities significantly contribute to the objectives without causing significant harm to any other environmental goals (Lucarelli et al., 2020).
3. **Safeguards and Transparency**: The Taxonomy Regulation includes safeguards to ensure that activities do not harm social or human rights. It requires companies to provide transparent reporting on how their activities align with the taxonomy, promoting greater accountability and preventing greenwashing (Dobránszky-Bartus & Krenchel, 2020).
4. **Impact on Various Sectors**: The taxonomy impacts many sectors, including energy, transport, agriculture, and manufacturing. It also affects financial services, providing a unified classification system for sustainable investments, helping investors make informed decisions, and supporting the shift towards a greener economy (Och, 2020).

5. **Dynamic and Evolving Framework**: The scope of the EU Taxonomy is not static. It is designed to evolve, incorporating new sectors and updating criteria as scientific knowledge and technologies advance. This adaptability ensures that the taxonomy remains relevant and continues to drive progress towards sustainability goals.

The EU Taxonomy Regulation thus provides a robust and comprehensive framework for defining and promoting environmentally sustainable economic activities. Its scope covers multiple environmental objectives, establishes rigorous technical screening criteria, ensures transparency, impacts various economic sectors, and remains adaptable to future advancements. This regulation is a critical tool in the EU's strategy to achieve climate neutrality and foster a sustainable economy.

In general and for real estate-linked economic activities, the EU Taxonomy sets technical screening criteria across six environmental objectives to identify sustainable activities. In real estate, it focuses on energy performance, carbon emissions, and resource efficiency, particularly in construction and renovation activities (expert group on sustainable finance, 2020). These standards aim to reduce environmental footprints significantly.

The EU Taxonomy applied to real estate

The EU Taxonomy provides a detailed classification system for environmentally sustainable economic activities, including real estate-related ones. This framework aims to standardize the criteria for sustainability to guide investments towards activities that support the EU's environmental objectives. The current criteria applied to real estate under the EU Taxonomy focus on several key areas:

1. **Climate Change Mitigation**: Buildings must demonstrate substantial contributions to climate change mitigation by reducing greenhouse gas emissions. This includes implementing energy-efficient designs, utilizing renewable energy sources, and ensuring low operational emissions. New buildings must meet or exceed current national building codes and energy efficiency standards while existing buildings must undergo significant renovations to improve energy performance (Schütze & Stede, 2021).
2. **Climate Change Adaptation**: Real estate projects must also address climate change adaptation. This involves incorporating resilient building designs that withstand extreme weather events and other climate-related impacts. Buildings should include features such as enhanced insulation, flood defenses, and sustainable drainage systems to reduce vulnerability to climate risks (Schütze & Stede, 2020).
3. **Sustainable Use and Protection of Water and Marine Resources**: The criteria emphasize the efficient use of water resources within buildings. This includes implementing water-saving fixtures, rainwater harvesting systems, and wastewater recycling processes to minimize water consumption and promote sustainable water management (Norang et al., 2023).
4. **Transition to a Circular Economy**: The real estate sector is encouraged to adopt circular economy principles. This involves using sustainable materials, promoting the reuse and recycling of building components, and minimizing construction and demolition waste. The aim is to reduce the environmental footprint of buildings throughout their lifecycle (Gałkiewicz & Wollmann, 2022).

5. **Pollution Prevention and Control**: Buildings must be designed and operated to minimize pollution. This includes reducing air, water, and soil pollution through effective waste management, controlling emissions from building materials, and preventing contamination from hazardous substances (Jakob et al., 2022).
6. **Protection and Restoration of Biodiversity and Ecosystems**: Real estate developments must consider their impact on local biodiversity and ecosystems. Projects should include green spaces, support local wildlife, and implement measures to restore natural habitats affected by construction activities (Hoepner & Schneider, 2022).

These criteria ensure that real estate activities not only comply with environmental standards but also contribute positively to the EU's sustainability goals. By adhering to these guidelines, the real estate sector can be pivotal in transitioning to a sustainable and climate-neutral economy.

The value of real estate can be significantly influenced by measures taken in the built environment. Governments and other actors can, willingly or unwillingly, influence the resilience of the land and, thus, the need for investments on an asset level. Flood defenses and green infrastructure initiatives, for example, have been shown to enhance property values by mitigating environmental risks and improving local amenities (Isola et al., 2022; Schütze & Stede, 2020). Conversely, restrictive zoning laws and the cost of adhering to new climate resilience standards can negatively impact property values (Hoepner & Schneider, 2022; Jakob et al., 2022).

Sustainable investments by individual agents can sometimes lead to unintended, unsustainable outcomes if not properly coordinated. Green building projects can increase urban density and environmental stress if not integrated into a broader urban planning strategy (Jenkins, 2022; Schütze & Stede, 2020). The EU Taxonomy should provide a framework to ensure that sustainable investments contribute positively to overall environmental and social goals, thus preventing fragmented and inefficient outcomes (Geneletti et al., 2020; Och, 2020).

Challenges

Need for Inclusive Assessment Models

The EU Taxonomy, a classification system for sustainable economic activities, aims to direct investments towards environmentally sustainable projects. While this is a significant step towards achieving climate neutrality, there is an urgent need for the taxonomy to become more inclusive. Current criteria predominantly focus on individual buildings, often neglecting the broader urban and community contexts that significantly impact sustainability. A more inclusive assessment model considering these broader contexts is essential for promoting comprehensive sustainability.

1. **Need for Broader Context Inclusion**: Sustainable real estate practices should encompass the environmental impact of the entire urban ecosystem. This approach involves integrating green spaces, ensuring biodiversity, and improving urban infrastructure to support sustainability beyond individual buildings (Larondelle & Haase, 2013). Including these factors can lead to better overall environmental outcomes and enhance the quality of life for urban residents.

2. **Urban Ecosystem Services**: Assessing urban sustainability should incorporate the benefits of urban ecosystems, such as air cooling, local climate regulation, and recreational spaces. These services are crucial for maintaining ecological balance and ensuring the well-being of urban populations (Larondelle & Haase, 2013).
3. **Integrated Approaches in Urban Planning**: Effective urban sustainability requires integrated planning that includes land use, transportation, and environmental considerations. This holistic approach ensures that urban development supports sustainable practices and reduces negative environmental impacts (Spiekermann & Wegener, 2004).
4. **Inclusive and Comprehensive Assessment Models**: To fully capture the sustainability of urban areas, assessment models should include various dimensions such as spatial, social, and economic factors. A multidimensional assessment framework can provide a more accurate picture of urban sustainability and help guide effective policy-making (Ding et al., 2015).
5. **Lessons from Ecosystem Services Mapping**: The EU's experience mapping and assessing ecosystem services highlights the importance of comprehensive data and stakeholder involvement. These lessons can be applied to urban sustainability assessments to ensure they are inclusive and effective (Geneletti et al., 2020).
6. **Urban Regeneration and Cultural Heritage**: Incorporating cultural heritage into urban regeneration can drive social and economic vitality. An inclusive approach to urban planning that values cultural heritage can lead to more resilient and sustainable urban environments (Della Spina, 2019).

Enhancing the EU Taxonomy to include broader urban and community contexts is essential for promoting comprehensive sustainability. Inclusive assessment models considering the interconnections between buildings, urban ecosystems, and socio-economic factors can lead to more effective and sustainable urban development. There is a necessity to include environmental impact assessments that consider broader urban and community contexts, promoting sustainability beyond the individual building level.

Proposed Amendments to Include the Spatial Component in the EU Taxonomy

Incorporating the spatial component into the EU Taxonomy can significantly enhance its effectiveness in promoting sustainable development across varied geographic contexts. Here are several proposed amendments to achieve this:

1. **Incorporate Spatial Justice Principles**:
    - Integrate spatial justice principles to ensure that sustainability criteria consider geographic disparities and regional inequalities. This would involve assessing the spatial distribution of environmental benefits and burdens to promote equitable development across different regions (Madanipour et al., 2022).
2. **Regional and Urban Contexts**:
    - Expand the taxonomy to include criteria that evaluate the environmental impact within broader regional and urban contexts. This involves considering the cumulative impacts of multiple projects and their contributions to regional

sustainability goals. Specific criteria should address urban density, green space availability, and infrastructure resilience (Pagliacci, 2017).

3. **Ecological Connectivity and Green Infrastructure**:
    - Include criteria for ecological connectivity and green infrastructure to ensure that developments contribute to maintaining and enhancing ecological networks. This includes mapping and protecting ecological corridors and integrating green infrastructure in urban planning (Isola et al., 2022).
4. **Spatial Data Utilization**:
    - Enhance the taxonomy's framework by incorporating spatial data and Geographic Information System (GIS) tools to assess better and monitor sustainability impacts. This will help accurately map environmental and socio-economic factors, enabling more precise evaluations (Underwood et al., 2018).
5. **Differentiation by Spatial Typologies**:
    - Differentiate sustainability criteria based on spatial typologies such as urban, peri-urban, and rural areas. Tailored criteria can address the unique challenges and opportunities of each typology, ensuring that sustainability measures are context-specific and effective.
6. **Regional Development Goals**:
    - Align the taxonomy with regional development goals to support coherent policy implementation. This includes incorporating regional sustainability targets and development plans into the criteria, ensuring that projects contribute to broader regional strategies (Fanelli, 2019).
7. **Assessment of Spatial Impacts**:
    - Develop detailed guidelines for assessing the spatial impacts of projects, including land use changes, urban sprawl, and infrastructure development. This can help mitigate adverse spatial effects and promote balanced regional development (Burns et al., 2008).
8. **Integration with EU Cohesion Policy**:
    - Ensure the taxonomy is integrated with the EU's cohesion policy to address regional disparities effectively. This includes supporting investments that enhance regional cohesion and reduce inequalities, contributing to a more balanced and inclusive economic development (Churski, 2005).

By incorporating these spatial components, the EU Taxonomy can better address the complex and varied geographic contexts across Europe, promoting a more equitable and effective path towards sustainability.

Discussion

The EU Taxonomy is pivotal in guiding investments towards sustainable economic activities by providing a standardized classification system. However, to achieve a more comprehensive and effective approach to sustainability, there is a compelling need to extend the current scope of the taxonomy. Several vital points support the justification for this extension:

1. **Comprehensive Sustainability Assessment**: The current EU Taxonomy primarily focuses on individual economic activities without fully accounting for the broader environmental,

social, and economic contexts in which these activities operate. Extending the taxonomy to include these broader contexts can provide a more holistic assessment of sustainability, addressing cumulative impacts and fostering integrated approaches to environmental management (Schütze & Stede, 2021).

2. **Enhanced Urban and Community Contexts**: Including environmental impact assessments that consider broader urban and community contexts can significantly promote sustainability beyond the individual building level. This approach is essential for fostering resilient and sustainable urban environments that support biodiversity, green infrastructure, and improved quality of life for residents (Larondelle & Haase, 2013).
3. **Addressing Complex Sustainability Challenges**: Sustainability challenges are inherently complex and interconnected, often spanning multiple sectors and geographical areas. An extended taxonomy can better capture these complexities by integrating diverse environmental, social, and economic indicators, providing a more accurate and comprehensive evaluation of sustainable practices (Ding et al., 2015).
4. **Support for Policy and Decision Making**: A more inclusive taxonomy can enhance the effectiveness of policy-making by providing a robust framework for evaluating the sustainability of various activities and projects. This can facilitate more informed decision-making, promoting policies that support long-term sustainability goals and environmental protection (Geneletti et al., 2020).
5. **Encouraging Sustainable Investment**: Extending the EU Taxonomy to include broader sustainability criteria can drive more investments towards projects that genuinely contribute to environmental and social goals. This can help prevent greenwashing and ensure financial resources are allocated to initiatives that deliver substantial sustainability benefits (Och, 2020).
6. **Alignment with International Standards**: As the EU strives to be a global leader in sustainability, extending the taxonomy can align its standards with international best practices and frameworks. This can enhance the credibility and impact of the EU's sustainability initiatives globally.

Extending the EU Taxonomy to include broader urban and community contexts, as well as integrating more comprehensive sustainability criteria, is essential for achieving a truly sustainable and resilient economy. Such an extension can enhance the effectiveness of sustainability assessments, support informed policy-making, drive genuine sustainable investments, and align the EU's efforts with global standards.

Conclusion

The EU Taxonomy has been instrumental in steering investments towards environmentally sustainable economic activities, particularly within the real estate sector. However, as this paper argues, there is a pressing need to enhance the taxonomy by incorporating broader environmental impacts, including the effects on surrounding areas and infrastructures. By integrating these spatial components, the EU Taxonomy can promote a more holistic and sustainable approach to urban development.

Incorporating broader urban and community contexts into the taxonomy will ensure that sustainability measures extend beyond individual buildings, fostering resilient and adaptable urban

spaces. This approach not only aligns with the EU's overarching goals of climate neutrality and environmental protection but also addresses the interconnected nature of urban ecosystems, social equity, and regional disparities.

Furthermore, the proposed amendments, such as incorporating spatial justice principles, enhancing regional and urban context criteria, and leveraging spatial data and GIS tools, will improve the taxonomy's effectiveness and relevance. These changes will support better planning and policy-making, encouraging investments in projects that deliver substantial environmental and social benefits.

In conclusion, enhancing the EU Taxonomy to include broader environmental impacts and spatial components is essential for achieving comprehensive sustainability. This paper has highlighted the necessity of such an extension and provided actionable recommendations to guide its implementation. By adopting a more inclusive and integrated framework, the EU can set global standards for sustainable real estate and urban development, ultimately contributing to a more sustainable and equitable future.

References

Beerbaum Dr., D. (2021). Green Quadriga? - EU - Taxonomy, TCFD, Non-Financial-Reporting Directive and EBA ESG Pillar III/ IFRS Foundation. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3824397

Burns, M. C., Roca Cladera, J., & Moix Bergadà, M. (2008). The spatial implications of the functional proximity deriving from air passenger flows between European metropolitan urban regions. *GeoJournal*, *71*(1), 37–52. https://doi.org/10.1007/s10708-008-9144-x

Churski, P. (2005). Problem areas in Poland in terms of the objectives of the European Union's regional policy. *European Planning Studies*, *13*(1), 45–72. https://doi.org/10.1080/0965431042000312406

Della Spina, L. (2019). Multidimensional assessment for "culture-led" and "community-driven" urban regeneration as driver for trigger economic vitality in urban historic centers. *Sustainability (Switzerland)*, *11*(24). https://doi.org/10.3390/SU11247237

Ding, X., Zhong, W., Shearmur, R. G., Zhang, X., & Huisingh, D. (2015). An inclusive model for assessing the sustainability of cities in developing countries - Trinity of Cities' Sustainability from Spatial, Logical and Time Dimensions (TCS-SLTD). *Journal of Cleaner Production*, *109*, 62–75. https://doi.org/10.1016/j.jclepro.2015.06.140

Dobránszky-Bartus, K., & Krenchel, J. V. (2020). The EU sustainable finance taxonomy regulation. *Economy & Finance*, *7*(4), 386–411. https://doi.org/10.33908/ef.2020.4.2

EU Commission. (2020). *REGULATION (EU) 2020/852 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation*.

expert group on sustainable finance, T. (2020). *Updated methodology & Updated Technical Screening Criteria*.

Fanelli, R. M. (2019). A new classification of European union regions: A decision support tool for policymakers. *Spanish Journal of Agricultural Research*, *17*(1). https://doi.org/10.5424/sjar/2019171-13481

Gałkiewicz, D. P., & Wollmann, B. (2022). Reporting of Social and Governance Measures in 2020 and 2021 by Real Estate Companies Stemming from German-Speaking Countries. *International Scientific-Business Conference – LIMEN 2022: Vol 8. Selected Papers*, 59–70. https://doi.org/10.31410/limen.s.p.2022.59

Geneletti, D., Esmail, B. A., Cortinovis, C., Arany, I., Balzan, M., van Beukering, P., Bicking, S., Borges, P. A. V., Borisova, B., Broekx, S., Burkhard, B., Gil, A., Inghe, O., Kopperoinen, L., Kruse, M., Liekens, I., Lowicki, D., Mizgajski, A., Mulder, S., … Veidemane, K. (2020). Ecosystem services mapping and assessment for policy-and decision-making: Lessons learned from a comparative analysis of european case studies. *One Ecosystem*, *5*, 1–31. https://doi.org/10.3897/oneeco.5.e53111

Hoepner, A. G., & Schneider, F. I. (2022). *EU Green Taxonomy Data-A first Vendor Survey*. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0391

Isola, F., Leone, F., & Zoppi, C. (2022). Mapping of Ecological Corridors as Connections between Protected Areas: A Study concerning Sardinia, Italy. *Sustainability (Switzerland)*, *14*(11). https://doi.org/10.3390/su14116588

Jakob, M., Ostermeyer, Y., Nägeli, C., & Hofer, C. (2022). Overcome data gaps to benchmark building stocks against climate targets related to the EU taxonomy and other decarbonisation initiatives. *IOP Conference Series: Earth and Environmental Science*, *1085*(1), 44DUMMY. https://doi.org/10.1088/1755-1315/1085/1/012042

Jenkins, B. (2022). Response to environmental assessments and sustainable finance frameworks. *Impact Assessment and Project Appraisal*, *40*(2), 105–109. https://doi.org/10.1080/14615517.2022.2035649

Larondelle, N., & Haase, D. (2013). Urban ecosystem services assessment along a rural-urban gradient: A cross-analysis of European cities. *Ecological Indicators*, *29*, 179–190. https://doi.org/10.1016/j.ecolind.2012.12.022

Lucarelli, C., Mazzoli, C., Rancan, M., & Severini, S. (2020). Classification of sustainable activities: EU taxonomy and scientific literature. *Sustainability (Switzerland)*, *12*(16). https://doi.org/10.3390/su12166460

Madanipour, A., Shucksmith, M., & Brooks, E. (2022). The concept of spatial justice and the European Union's territorial cohesion. *European Planning Studies*, *30*(5), 807–824. https://doi.org/10.1080/09654313.2021.1928040

Norang, H., Støre-Valen, M., Kvale, N., & Temeljotov-Salaj, A. (2023). Norwegian stakeholder's attitudes towards EU taxonomy. *Facilities*, *41*(5–6), 407–433. https://doi.org/10.1108/F-03-2022-0051

Och, M. (2020). Sustainable Finance and the EU Taxonomy Regulation – Hype or Hope? *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3738255

Pagliacci, F. (2017). Regional paths towards Europe 2020 targets: a spatial approach. *European Planning Studies*, *25*(4), 601–619. https://doi.org/10.1080/09654313.2017.1280002

Schütze, F., & Stede, J. (2020). EU Sustainable Finance Taxonomy-What Is Its Role on the Road towards Climate Neutrality? In *Deutsches Institut für Wirtschaftsforschung*.

Schütze, F., & Stede, J. (2021). The EU sustainable finance taxonomy and its contribution to climate neutrality. *Journal of Sustainable Finance and Investment*, *14*(1), 128–160. https://doi.org/10.1080/20430795.2021.2006129

Spiekermann, K., & Wegener, M. (2004). *Evaluating Urban Sustainability Using Land-Use Transport Interaction Models*.

Underwood, E., Taylor, K., & Tucker, G. (2018). The use of biodiversity data in spatial planning and impact assessment in Europe. *Research Ideas and Outcomes*, *4*, e28045. https://doi.org/10.3897/rio.4.e28045