PROBONO

D8.12 - Governance and policy recommendations (I)

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DEFINITIONS[1]

A Green Building (GB) (new or retrofit) is a building that, in its design, construction and operation, reduces or eliminates negative impacts, and can create positive impacts, on the climate, social, and natural environment. GBs preserve precious natural resources and improve quality of life[2]. Specifically, this means that GBs should be very energy efficient, use extensively the potential of locally available renewable energy, use sustainable materials, and aim for a low environmental impact over the entire life cycle. GBs offer their users and residents a healthy climate and a high quality of stay, they are resilient e.g., to environmental change and contribute to social inclusion.

Green Neighbourhoods aligned with the European Green Deal[3], is a set of buildings over a delimited area, at a scale that is smaller than a district, with potential synergies, in particular in the area of energy. A green neighbourhood is a neighbourhood that allows for environmentally friendly, sustainable patterns and behaviours to flourish e.g., bioclimatic architecture, renewable energy, soft and zero-emission mobility etc. Green neighbourhoods are the building blocks of Positive Energy Districts (PEDs)[4] by implementing key elements of PED energy systems. For example, the exchange of energy between buildings increases the share of local self-supply with climate-neutral energy and system efficiency. They also provide the technical conditions to enable Citizen Energy Communities[5] and Renewable Energy Communities[6] to be implemented.

Green Buildings and Neighbourhoods (GBN) in PROBONO are GBs integrated at delimited area or district level with green energy and green mobility management and appropriate infrastructure supported by policies, investments and stakeholders' engagement and behaviours that ensures just transition that maximise the economic and social cobenefits considering a district profile (population size, socio-economic structure, and geographical and climate characteristics). Delivered in the right way, GBN infrastructure is a key enabler of inclusive growth, can improve the accessibility of housing and amenities, reduce poverty and inequality, widen access to jobs and education, make communities more resilient to climate change, and promote public health and wellbeing.

DGNB certification serves as a quality stamp ensuring the state of the building for buyers. The Green Building Council Denmark (2010) established the German certification DGNB meaning 'German Society for Sustainable Buildings'. The Danish version of DGNB was created to obtain a common definition of what sustainability is towards and making it measurable. A consortium of experts was established from all parts of the construction sector. DGNB had to be reshaped for the Danish standards, practice, traditions, and laws but is now available to certify any construction project. They chose DGNB as an innovation-forward and sustainable future guarantee. DGNB diversifies itself by focusing on sustainability and not just the environment. DGNB creates a standardised framework for the construction operations conditions and

[1] Please refer to the last submitted reports for the latest status of the definitions

[2] https://www.worldgbc.org/what-green-building

[3] European_Green_Deal_EN_200710_fin

[4] SET-Plan Action 3.2: https://setis.ec.europa.eu/system/files/setplan_smartcities_implementationplan.pdf

[5] Internal Electricity Market Directive (EU) 2019/944 5 Renewable Energy Directive (EU)

[6] Renewable Energy Directive (EU) 2018/20012018/2001

creates a common language which facilitates communication between professions and helps organize and prioritize the efforts in long and complicated development phases.

Life cycle assessment (LCA)[7] is a tool used for the systematic quantitative assessment of each material used, energy flows and environmental impacts of products or processes. LCA assesses various aspects associated with development of a product and its potential impact throughout a product's life (i.e., cradle to grave) from raw material acquisition, processing, manufacturing, use and finally its disposal. In PROBONO, LCA represents the statement of a building's total energy, resource consumption and environmental impact in the manufacture, transport, and replacement of materials and for its operation over its expected life. Social life cycle assessment (S-LCA)[8] is a method to assess the social and sociological aspects of products, their actual and potential positive as well as negative impacts along the life cycle. Life-cycle costing (LCC)[9] considers all the costs incurred during the lifetime of the product, work, or service.

[7] https://op.europa.eu/en/publication-detail/-/publication/16cd2d1d-2216-11e8-ac73-01aa75ed71a1/language-en

[8] https://www.lifecycleinitiative.org/starting-life-cycle-thinking/life-cycle-approaches/social-lca/

[9] https://ec.europa.eu/environment/gpp/lcc.htm

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Abbreviations and Acronyms

Acronym	Description
CSF	Supply Chain Finance
CSR	Corporate & Social Responsibility
ESG	Environmental, Social Governance
GA	Grant Agreement
GBN	Green Building Neighbourhood
HCA	Human-Centred Analysis
LL	Living Lab
ST	Sub-task
SCF	Supply Chain Finance
SME	Small Medium Enterprise
WP	Work Package

Executive summary

This Deliverable report, D8.12 Governance and Policy Recommendations (I), is the report for Sub-task 8.2.4 *Governance and Incentive Opportunities linked to Corporate Social Responsibility*, and is intended as a Green Paper for subsequent publication. It is intended to identify drivers and enablers to change corporate mindsets from short term goals, towards long-term sustainability. It then goes on to identify the incentives and policies, such as Environmental, Social Governance (ESG) and EU finance and investment disclosures, to link long-term goals with actions and behavioural changes as described in WP2, ST2.6.2. *Activities Monitoring Perform innovation activities monitoring, plan and activate interventions.* It then goes onto identify linkages between organisations and communities and how changes in Corporate & Social Responsibility (CSR) can have a positive impact on local communities.

The document emphasizes the need for collaboration across sectors and the role of supply chain finance in driving sustainable practices. It concludes by discussing the benefits of CSR changes, such as value retainment and environmental benefits, and how they can benefit stakeholders on the ground.

Overall, the document provides insights into the importance of CSR and the potential for driving sustainable development and innovation.

1 Introduction

This Green Paper is the first in a series of 3, along with the addition of a further two White Papers under the WP8 Task8.4 heading *Governance and Policy recommendations and drivers for GBN growth.* The other two green papers in this series are:

ST8.4.1, D8.13 Whole Value Chain Management and Integration of GBN's. Identify supporting tools and build resilience into the whole value chain, defining key responsibilities to actors as described within WP1 and WP2.

ST8.4.2, D8.14 Supporting the Growth of Green Innovations and Business. Linking to standardisation and fair competition rules as described in WP9. Financing, incentivising and economic support for businesses starting up, especially SME's and those established and going green.

At this stage, it is helpful to set out and describe what is meant by a green and white paper[10]. Within the formal EU structure, and thus a description that can be applied to this context, a green paper is meant to initiate a discussion. Setting out the current state of affairs within a policy area or problem, with recommendations for possible future policies or solutions. Any such recommendations are general in nature, with stakeholders and other interested parties able to respond to the content of the green paper. White papers, are used to initiate debate on more detailed and specific policies. This description and differentiation are important in the context of this report as well as that of the context and maturity of the PROBONO project and the path towards the development of GBNs.

This D8.12 *Governance and Policy Recommendations (1)* for ST8.4.3 *Governance and Incentive Opportunities linked to Corporate Social Responsibility* is a Green Paper, thus intended as being general in nature. Why is this important?

GBNs as a physical, operational construct do not exist. Our PROBONO LLs are not GBNs, but testing and developing innovations that will contribute to a GBN. Their value and role under the Green Deal are still very much formative, as is how GBNs will be developed. If we refer back to the objective of this T8.4 in which this ST8.4.3 sits, it states: *Through accumulated project*

[10] Green paper - EU monitor

knowledge, this task elicits key findings from each WP to determine the fundamental challenges and/or enablers that prevent or support adoption and sustainability of GBN's.

ST8.4.3 then goes on to state: *Identify drivers and enablers to change corporate mindsets from short term goals, towards long-term sustainability. Identify the incentives and policies, such as ESG and EU finance and investment disclosures, to link long-term goals with actions and behavioural changes as described in 2.6.2. Identify linkages between organisations and the communities and how changes in CSR can have a positive impact on local communities.*

With GBNs not yet existing and the role and any possible contribution and transition of PROBONO LLs towards being a GBN still very immature, there is no activity in terms of CSR nor initiatives for short to long-term behavioural change that this paper can draw upon. Hence it being a green paper, identifying and setting out in general terms, the future areas that PROBONO LLs will be able to adopt in order to achieve the objectives set out here. This paper, together with the general context and recommendations within the following two green papers, will form the basis for the intended white papers, which will set out specific findings and recommendations.

1.1 Mapping PROBONO Outputs

GA Component Title	GA Component Outline	Respective Document Chapter(s)	Justification
TASKS			
ST8.4.3 Governance and Incentive Opportunities linked to Corporate Social Responsibility. (M24)	Identify drivers and enablers to change corporate mindsets from short term goals, towards long-term sustainability. Identify the incentives and policies, such as ESG and EU finance and investment disclosures, to link long-term goals with actions and behavioural changes as described in 2.6.2. Identify linkages between organisations and the communities and how changes in CSR can have a positive impact on local communities.	GA Annex 1 (Part A)	As a green paper, a generalised context and recommendation for addressing the requirements set out in the GA, this report provides a useful basis for our PROBONO LLs to understand how, why and where their planning and development activities towards delivering a GBN need to focus. In support of that, the LL generally and the partners specifically, will be able to use this paper as a means by which to plan and implement their citizen and community engagement activities through CSR strategies and initiatives. This information and the resultant detailed outputs and findings that will result from the subsequent white paper, will inform the GBN Playbook and transition and integration strategies of the LLs towards delivering a GBN.

			Overall, the document provides insights into the importance of CSR and the potential for driving sustainable development and innovation.
DELIVERABLE D8.12: Governance and policy recommendations (I) [24] This report formulates the findings of T8.4, and explores step/s A) Publish of first 3 papers on subtopic 1. [A=M24] (PU)			

Table 1: Adherence to PROBONO's GA Deliverable & Tasks Descriptions

1.2 Purpose and scope of the document

This document as a green paper, is intended to provide a generalised and broad summary of the areas described in the section 1 introduction. These topic areas will then undergo further, more specific and more detailed investigation along with specific recommendations that can support and benefit the planning and development of a GBN. This will be articulated through one of two subsequent white papers.

This document starts by setting out its purpose and scope. This is followed by its structure and the relationship it has with other Work Packages and deliverables. From there, the document outlines the contribution it makes towards creating and developing a GBN. With the subject of this document principally on CRS and related ESG, a section then summarises the historic roots of CSR post the industrial revolution along with a further historic example from the days of Nelson. The document then goes on to look at the principal drivers of CSR, followed factors that create and change mindsets: the key to long term sustainability. The incentives and policies that can drive behavioural changes towards sustainability follow. The document then takes a look at CSF – supply chain finance, a principal driver in achieving innovation, including that of sustainability amongst SMEs; SMEs representing the engine room of growth in most European economies[11].

This is followed closely by a look at Corporation and community: how CSR changes can benefit those on the ground. The Conclusion follows with its summary of: climate anxiety; changing short term views; contribution of CSR and of SMEs to innovation.

[11] [Annual report on European SMEs 2022/2023 - Publications Office of the EU (europa.eu)]

1.3 Structure of the document and its relationship with other WPs/Deliverables

This report follows a standard structure and approach, commencing with the Executive summary and introduction. It then maps itself to the PROBONO outputs and provides a summary of its purpose and scope. The contribution that this report makes to the creation of a GBN then follows. These are all standard sections for all PROBONO deliverable reports.

Specific to this deliverable, this report then summarises the roots and the relevance of CSR, followed by the principal drivers. This is followed by the factors that create and change mindset, which, can be seen as the key to long term sustainability. The report then looks at the incentives and policies that could drive behavioural changes towards sustainability. One of the key factors identifies which this report then summarises is that of Supply Chain Finance (SCF). On the ground, the report looks at the theme of corporation and community and how CSR changes can benefit citizens and communities. As a penultimate sector, the topics for future recommendations that will be looked at in detail in the subsequent white papers are summarised. These include: climate anxiety; the role of SMEs; changing short term views; and the contribution of CSR to innovation. The conclusion follows.

This green paper report, during the project life, will inform and provide value to any and all of the PROBONO work packages and deliverables that contribute to the planning and development of a GBN. This includes, all WP1 tasks and deliverables. WP2 and all of its deliverables. WP3 for deliverables D3.17 (M30) and D3.18 Knowledge Graphs and Agent-Based Modelling M48. WP5 for all of its deliverables, WP7 and WP8 for all of their deliverables WP9 for D9.3 Exploitation, Replication and Sustainability (II) [PNO] [B=M36] and B) [C=M60] C) Final exploitation and commercialization plan. D9.8 PROBONO Standardization (II) [DIN] [B=M36] and [C=M60] C) Report on PROBONO’s contribution to standardisation.

1.4 Contribution to creating a GBN

LLs are not GBNs, but the activities they undertake within Probono, whether at the technical and physical level for renovation, or more social, such as understanding behaviours for better building energy use, contribute to the component parts that make a GBN.

GBNs are part of a larger, dynamic system of systems. Across the building lifecycle, co-ordination of the many different stakeholders, suppliers and interested parties is vital to develop clear strategic plans for the implementation of a GBN. The commercial, economic and policy levers that can support development of a GBN, are essential components of any transition towards

GBNs and enable an understanding of how the different component parts that make up a GBN are financed, commissioned, and procured. The consideration, for example, of public/private partnerships, public procurement, and other types of green financial and investment levers that will provide the stimulus for involvement in GBNs by both large corporates, or through the multitude of SMEs that proliferate in any economy and across local, regional and national supply chains, is essential.

CSR and how to change corporate mindsets from short termism to long term views that can support their involvement in a GBN, or to better understand the barriers and drivers for SMEs in both neighbourhoods as well as the wider economy, for example, through their essential role in supply chains, so as to also be able to participate in a GBN, is the purpose of this document.

The report also highlights the linkages between organizations and communities and how changes in CSR can have a positive impact on local communities. Corporations and indeed, many SMEs, see and use CSR as a key communication channel to their customers, local markets and the neighbourhoods in which their businesses reside. By addressing these, this report aims to promote the integration of green building and green mobility management in neighbourhoods, supported by policies, investments, and stakeholder engagement. Thus, supporting the transition to and development of GBNs.

2 CSR and ESG – Roots and Relevance

The relatively recent appearance of ESG – Environmental and Social Governance, closely linked in many aspects to CSR, has a more acute focus on economic consequences, from actual or perceived negative ESG reporting. Corporations have become increasingly active in how they respond and are portrayed in this sphere. This can be internally, for core aspects of their business such as employee satisfaction or graduate recruitment and retention. To their investors and the wider financial market for investment, share price and brand value. And externally, to their markets and customers for revenue and market share. Thus, the opportunity to leverage both ESG and CSR, to drive sustainable development and transformation, or indeed, increased resilience, shouldn't be overlooked. Providing the drivers, enablers and incentives for sustainable transformation, development and change whether in local communities, across supply chains or, within the industrial and manufacturing bases.

Neither CSR and ESG in terms of their effect on sustainability and resilience is new. In the 19th century, post the industrial revolution, there appeared industrial philanthropists, mostly whom were Quakers[12] such as Joseph Rowntree, of the Quaker Cadbury Family[13]. He recognised that industry and commerce and the great wealth and social advantages that flowed from them, would be better served economically and socially, through a benevolent and philanthropic approach to how the workforce was both valued, as well as treated. In the most obvious examples, education, housing and medical facilities were provided to the thousands of workers spread across their industrial estates. One of the most famous examples of this is the Bourneville Model Village[14] in Birmingham, UK originating from the Quaker chocolate and confectionary Cadbury family.

There is no doubt, that the intentions of these great industrial philanthropists were, for the most part, honourable in wanting to care and improve the good of communities and wider society. But there was also a hard-nosed recognition that looking after the workforce looked after the profits. Of course, technology and understanding the effect of industry on the environment was very different then from our understanding today.

[12] Home / Quakers in the World

[13] The Rowntree Family - York Civic Trust

[14] The-Bournville-Story.pdf (bvt.org.uk)

Figure 1: The Bourneville Model Village, Birmingham UK

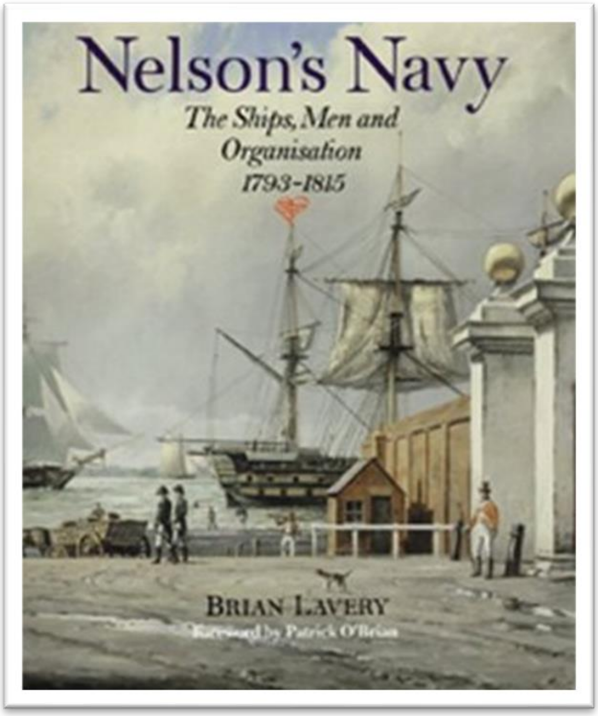

Figure 2: Nelson's Navy: The Ships, Men and Organization, 1793-1815. Brian Lavery

One further example setting the precedent for today's ESG and CSR can be seen in the British Royal Navy during those periods, the most powerful in the world. Here, there is a misconception that sailors were, by and large, poorly treated, poorly fed and thus, poorly motivated[15]. The opposite was the case. The Royal Navy recognised from even before the days of Nelson, that for Britannia to rule the waves, a properly cared for and motivated crew was the essential weapon in their armoury[16].

A well documented history of this can be seen in the Figure 2 book, Nelson's Navy. Discipline was strong, fair and rigorously enforced, ensuing trust and respect, but the health and welfare of the crew was essential to attain and retain a fighting edge.

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[15] BBC - History - British History in depth: Life at Sea in the Royal Navy of the 18th Century

[16] Shipboard Life and Organisation, 1731-1815 – The Navy Records Society

A further example, one probably unknown to many in society, is that of Carlsberg, famous for probably brewing the best lager in the World. The Carlsberg Foundation[17] was established on September 25, 1876, when J.C. Jacobsen described the statutes of Denmark's first commercial foundation, the Carlsberg Foundation. He also asked the Royal Danish Academy of Sciences and Letters to nominate five professors from its centre to form the foundation's board. Since then, the Carlsberg Foundation has overseen the Carlsberg Group to ensure that the brewery stays focused on innovation and high-quality products, as well as supporting basic research within natural sciences, humanities, and social sciences, all in alignment with the brewer's desire and vision.

Today's contemporary interpretation of those great industrial philanthropists and Royal Navy crew welfare can be seen, albeit lost in history, in ESG reporting and CSR. These are of course far removed from those examples, but, the principles, and effects are, by and large, comparable.

3 The Principal Drivers of CSR

Three principal drivers determine the governance and approach to how corporations enact their CSR, on the ground, amongst the communities in which their business operations reside and co-exist[18]. Firstly, the need for compliance, through the mandatory policy and legislative requirements in place at both local, national and international levels. Secondly, a deep rooted philosophy or vision on the role and relevance a corporation has, or perceives to have, of its place in society. Thirdly, economic value, whether positive or negative, in terms of revenue, share price and brand and reputational value that can affect both.

To better understand and identify the drivers, enablers and incentives that can affect corporate CSR strategy, governance and impact on the ground, with a view to positively impacting the communities in which corporations operate, we must firstly understand the landscape in which corporations exist. Predominantly, this is can be either a financial and an economic one, or indeed both, and consequently, drives a relatively short term view. Corporations first and foremost exist to make a profit. All else is secondary, a consequence of the first. There are of course exceptions, where the economic incentive sits comparably alongside, for example, a

[17] The Foundation's History | Carlsbergfondet

[18] Global CSR, drivers and consequences: a systematic review | Emerald Insight

societal one. That of the Carlsberg Foundation and its highly successful brewing business, being just one example. But for most, and indeed even for those with a philanthropic and social vision, financial is the principal driver for existence. Social philanthropy unable to come about without the profit that makes it possible. To understand this economic landscape, and thus, the principal enabler for corporations to consider their CSR as part of a longer term view, for a more positive impact on society, we have carried out a comprehensive literature review and associated thought piece of on Supply Chain Finance (SCF). This and its basis are described in section 3.3.

Specifically, this review of SCF and the accompanying thought piece does not only provide context for this D8.12 report and green paper, but also, will provide the underpinning to the two further green papers in this series as well the associated deliverable for WP1, D1.4: *GBN Strategic Vision and KPI Formalisation* due M32.

3.1 Factors That Create and Change Mindsets: The Key to Long Term Sustainability

With corporate short-termism principally driven by economic considerations, access to finance at low risk and ability to drive demand and economic growth are potential keys to unlocking sustainable development in the quickest possible way. Our focus thus in this paper to changing corporate mindsets from short to long-terms views, is an economic one, articulated through the mechanism of CSR.

Within a complex sector such as finance, there is often little study as to how ESG can change mindsets, even though this is needed to incentivise desired innovation[19]. Then, if we take into consideration the fact that finance and economics are just a small, albeit important part, of a plethora of sectors that feed the wider goal of sustainability, it becomes even clearer why mindset change as a uniting human factor is all the more important than ever.

Understanding, therefore, the psychological factors that influence human adaptation to climate change and thus may influence how individuals may be incentivised to uptake new innovations and solutions is likewise crucial. Research increasingly shows a powerful interior dimension in which mindset influences societies, stakeholders, and communities' ability to adapt to changes because of human impact on the environment. Specifically, mindfulness and associated factors such as emotional intelligence, attention, and awareness are positively correlated with the

[19] Guyatt, D. page 6 Cultivating a Sustainable Mindset in Finance: Mobilising the Capital Needed to Combat Climate Change, Ethics International Press (2023)

ability to adapt to changes surrounding the natural world and climate[20]. This contrasts with fatalism, the sense that an individual or even a larger society or group of stakeholders can have any positive influence on the environment and thus that it is futile to attempt to influence it.

At the other end of the scale, practical matters divorced from human psychology may influence whether an individual stakeholder or group is able to change behaviour to match goals within sustainability. Like humanity's interior dimension, this is a factor where research is still in its infancy, in the form of ecological economics[21], a cross disciplinary and trans disciplinary approach that may potentially be pinpointed as a crucial nexus for understanding the necessary behaviour changes needed to mitigate environmental catastrophe in the near-, mid-, and long-term future.

Lastly, collaboration across sectors – a topic that this paper will address more deeply further on – is a vital part of any behaviour change beyond the individual level, which accounts for most changes needed to genuinely have any significant movement or growth towards the targets within sustainability that we need. Nevertheless, challenges come about due to politics, knowledge gaps, and communication difficulties, making this an increasingly inefficient part of the sustainable development process.

One major challenge to sustainability uptake is the inefficiency of the collaborative process across sectors[22]. To a greater or lesser extent, all policy changes must involve collaboration due to the knock-on effects that result from any one policy change in a complex and connected system of organisations.

However, these collaborative processes are frequently inefficient due to financial, social, and political barriers. Therefore, policies that prioritise better cross sector collaboration can indirectly have an effect on sustainable development uptake due to the way that they make it easier for stakeholders to implement new frameworks of working.

If fatalism is one of the biggest factors in preventing action towards sustainability, what motivates this fatalism? Climate anxiety[23] is a relatively newly identified phenomenon that

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[20] **Wamsler, C, Brink, E.** Mindsets for Sustainability: Exploring the Link Between Mindfulness and Sustainable Climate Adaptation, Journal of Ecological Economics (2018)

[21] Costanza , R. What is Ecological Economics? Yale Insights Management in Practice

[22] Bjärstig,T. Johansson, J. Mancheva, I. Sandström, C. Collaboration as a policy instrument in public administration: Evidence from forest policy and governance, Journal of Environmental Policy and Governance, 2024

[23] Taylor, D. Climate Anxiety, Fatalism, and the Capacity to Act, New Disciplinary perspectives on and Beyond Autonomy, 2023

results in anxiety and grieving surrounding the changes wrought to the natural world by humans. However, at an organisational level this may manifest differently than at a mental health perspective, where it is most commonly studied.

For example, instead of resulting in mental health difficulties and depression, climate anxiety may prompt stakeholders to act in the interests of self-preservation and become less likely to take risks and innovations towards sustainability goals. Companies may prefer less sustainable but traditional methods of management and operation due to their desire to minimise any further threat in the face of a challenging environment as brought about by changes in climate.

This inevitably raises the question of what policy changes need to happen to not only incentivise these stakeholders but also provide operational security so that the risks that prevent them taking steps towards sustainability are accounted for.

Thus, levels of climate anxiety and a community's ability to mitigate it is a key and deciding factor in the success of actions and organisation within that community, having the potential to increase efficiency and boost the odds of success for reaching any targets.

At this point, it is important to note that a leading theory surrounding earth's ecology, the Gaia Hypothesis[24], posits the earth as a self-regulating ecosystem that will eventually throw off any organisms – including humankind – that are parasitic, utilise resources too much, or detrimental to the rest of the ecosystem. Pop science theories like this are not without their basis in scientific fact but their widespread knowledge amongst the general public and laypeople means that they occasionally become corrupted or there are multiple different local understandings of this.

Nevertheless, there are multiple controversies with the Gaia hypothesis and understanding more deeply how the public views humanity's future is something this paper posits is a crucial factor in influencing and changing behaviours towards practical and constructive action.

One major factor in mindset creation and change is a culture or individual's worldview. This could be at a local community level, national or governmental level, or even at an individual level. Either way, research has found stark differences in individualists vs egalitarians perceptions of risk.

This in turn influences how cultures within all stakeholders and organisations perceive the danger or threat from climate change and continues unsustainable practices in the future.

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[24] Xie, J. H. Analysing the Rationality of the Gaia Hypothesis, Journal of Systems research and Behavioural Science, 2023

Whilst individualists or those with a hierarchal worldview are less likely to perceive risk to do with climate and sustainability, egalitarians[25] tend to have a keener sense of risk. Whilst it is not necessarily possible to change someone's worldview, by adapting information and evidence of risk to individual stakeholders preferred worldview, clearer communication not just of the necessity for environmental change but the level of incentive needed to instigate action may therefore be possible.

3.2 What Incentives and Policies Can Drive Behavioural Changes Towards Sustainability?

Having understood the underlying factors that prime individuals or stakeholders' mindsets for action or inaction, to change these meaningfully it is necessary to implement and examine policies to facilitate change – looking at both the psychological and practical/ economic viability of different stakeholders and communities.

One major challenge to sustainability uptake is the inefficiency of the collaborative process across sectors. To a greater or lesser extent, all policy changes must involve collaboration due to the knock-on effects that result from any one policy change in a complex and connected system of organisations.

However, as stated earlier on, these collaborative processes are frequently inefficient due to financial, social, and political barriers. Therefore, policies that prioritise better cross sector collaboration can indirectly have an effect on sustainable development uptake due to the way that they make it easier for stakeholders to implements new frameworks of working.

Recent research has developed frameworks for identifying different types of organisational culture within groups of stakeholders. Therefore, there is now potential that policies based on this or following a similar framework can incentivise innovation by making the cooperation process more streamlines and easier[26].

Likewise, it may be possible to catalyse uptake of innovations towards sustainability goals by understanding the organisational culture of stakeholders and therefore assessing and

[25] Xue, W. Hine, D. Loi, N. Thorsteinsson, E. Phillips, W. Cultural worldviews and environmental risk perceptions – a meta analysis. Journal of Environmental Psychology (2014)

[26] Bendak, S. Moued Shikhli, A. Abdel-Ra zek, R. Ardito, L. How changing organizational culture can enhance innovation: Development of the innovative culture enhancement framework, Journel of Cogent Business and Management, 2020

identifying human and communication barriers to sustainability target achievement. This in turn can act as a measure towards minimising and mitigating this characteristic inefficiency that occurs when diverse groups of stakeholders with little shared framework for communication are asked to achieve sustainability targets and alter individual participants' behaviours. Streamlining in the organisation process minimises the energy and resources lost in this so they can be more efficiently utilised in solving greater human challenges such as the need for incentive.

Fortunately, it does not have to be an either-or situation. In fact, the risks associated with green innovation can be mitigated through CSR via changing behaviours whether consumers, citizens or across wider markets and sectors so that there is a direct link between a company's sustainability goals, practices, and policies, and their profit. This proves that sustainability does not have to be a word that is associated with risk. For example, consumer preference for greenness combined with times of high market volatility can actually increase the consumer investment into green products and solutions[27].

Data on observations such as this is still one of the key resources to providing stakeholders have an informed ability to uptake sustainability measures as well as mitigating strategies to ensure their environmentally sustainable practices are also sustainable economically.

3.3 SCF – Supply Chain Finance

Financing business contracts and operations is often challenging for many corporations, but for SMEs, especially so. With SMEs the backbone of most economies, their role in driving sustainability development and change is crucial. While large solvent corporations usually have no problem securing bank funding, SMEs often struggle to obtain the financing they need to grow and succeed[28]. SMEs use various financing methods, including both informal and formal sources. Informal sources of financing include personal, friends, and family financing, venture capital, private equity funds, and angel investment[29]. On the other hand, formal sources include financial institutions and commercial banks[30]. However, despite the availability of formal

[27] Xing, G. Xia, B. Guo, J. Sustainable Cooperation the Green Supply Chain under Financial Constraints. Journal of Sustainability 2019.

[28] (Beck and Demirguc- Kunt, 2006; Paulet et al., 2014)

[29] Hatoum (2019)

[30] Chun and Bo (2013)

financing options, SMEs are challenged with utilising them, and are therefore, often forced use informal sources[31]. However, despite the availability of formal financing options, SMEs are challenged with utilising them, and are therefore often forced to use informal sources.

For instance, according to the UK Department of Business and Trade (2023), in the UK, only 9.8% of the business acquired external finance in 2020, falling to 7.5% in 2021. In the EU, the highest SME bank loan financing gaps are in the Netherlands (22% of GDP), Belgium (14%), France (9%) and Italy (4%). Since European SMEs depend on banks for 70% of their external financing (against around 40% in the U.S.), any gap between loan demand and supply could lead to lower investment growth if companies don't have the means to self-finance their investments. This could be a constraint for overall economic growth and indeed, for achieving sustainability aims.[32]

This lack of funding has resulted in a financing gap for SMEs. The International Finance Corporation (2022) highlighted that SMEs in developing countries face an unmet financing need of $5.2 trillion annually, further highlighting the need for more accessible financing options for SMEs. In response to these challenges, researchers have identified Supply Chain Finance (SCF) as a potential solution to mitigate financial constraints and improve the supply chain performance of SMEs in particular[33]. The Global SCF Forum (2016) defines SCF as *"The use of financing and risk mitigation practices and techniques to optimize the management of the working capital and liquidity invested in supply chain processes and transactions."*

The benefits of supply chain finance present an opportunity for the business to incentivise sustainable behaviours within global financial supply chains, thereby fostering both business growth and sustainability. For instance, according to Zhan et al. (2018) SCF payment schemes such as Advance Payment and Reverse Factoring can promote supply chain sustainability and efficiency by reducing payment lead time. The study found that longer lead times corresponded to an increased order quantity of the retailer but lower motivation for suppliers to promote sustainability. This reduction in sustainability efforts by suppliers can ultimately lead to a decrease in the order quantity of the retailer. Additionally, the study found that a Reverse Factoring scheme with a rational payment ratio and payment term can effectively alleviate conflicts between the retailer and supplier regarding payment conditions while also promoting

[31] (Ayyagari et al., 2010)

[32] European SMEs: Filling the bank financing gap (allianz.com)

[33] (Moretto and Caniato, 2021; Abbasi et al., 2018)

supplier sustainability efforts and increasing the order quantity of retailers. Sarkar et al. (2018) proposed implementing multi-level trade credit under single setup-multiple delivery to improve the economic and environmental performance of the supply chain. Similarly, Chen et al. (2023) findings indicate that implementing SCF can solve capital constraint issues, leading to functional and structural innovations in the agricultural supply chain. This, in turn, promotes corporate social responsibility (CSR) and creates shared value (CSV). Furthermore, Moraux et al. (2023) emphasized the benefits of collaborative financing and co-ordination, mainly through reverse factoring and cost-sharing contracts, in enhancing CSR efforts and profitability within supply chains. Overall, these studies highlight the immense potential of SCF and collaborative financing in driving innovation, sustainability, and CSR within supply chains

4 Corporation and Community: How CSR Changes Can Benefit Those on the Ground

So ultimately, what end results can these changes bring about? There are many reasons to prioritise CSR changes. However, two of the main ones are value retainment and the environmental benefits of a closed loop supply chain.

Studies have shown that the linear and disposable supply chains that we have at the moment are not only bad for the environment but are not even economically sustainable[34].

The World Economic Forum describes the 'burden of sustainability'[35] as a way of encapsulating the risks and potentially relatively low short term rewards that come from transitioning to sustainable development practices.

However, a holistic CSR strategy must take into account and place emphasis on the 'burden' part of this phrase, recognising the risks that are associated with the uptake of innovations towards sustainability. Furthermore, it must account for the barriers associated with sectors working

[34] Luthra, S. Sharma, M. Kumar, A. Joshi, S. Collins, E. Mangla, S. Overcoming barriers to cross sector collaboration in circular supply chain management: a multi method approach. Logistics and transportation review, 2022

[35] https://www.weforum.org/agenda/2023/03/radical-collaboration-for-a-sustainable-future-the-case-for-sustainability-collaboration/

together[36]. An interconnected CSR approach that accounts for this and looks at the relative resources and rewards for stakeholders across the ground can share the sustainability burden and this mitigate risks for the actors involves.

Furthermore, sustainability goals at a governmental or multinational level are not the only form of sustainability challenge that these stakeholders must face. Entirely disconnected targets in sustainability – sometimes put into place by the natural world itself such as in areas of high flood risk or soil degradation where policies must be implemented quickly – add additional stress to stakeholders.

Therefore CSR that accounts for the energy expenditure, risk, and resource usage of any sustainability change can ensure that those changes in themselves are also sustainable and are not merely a counter measure to climate change but provide real on the ground protection against short term environmental challenges, meaning that the investment stakeholders put into them pays off, freeing them up to take further risks in innovation and revitalising economies due to more inventive policy change at a more rapid level. This has begun to be evident at the level at which sustainable implementation can now provide revenue to different stakeholders[37]. This revenue can therefore go a long way towards mitigating the risks of innovation towards sustainability but can only happen with holistic CSR.

Lastly, behavioural changes towards sustainability with altered CSR – especially in the form of cross sector collaborations – can have knock on effects worldwide, creating global connections that weren't there beforehand and new routes of research such as in development projects in Ghana[38], which have looked at the cross-sector model to increase resilience in impoverished communities.

It is in this way that overall, we see CSR changes can improve resource usage and value, maintain and recycle value, create jobs, and open up avenues of innovation and commerce for actors on the ground.

Ultimately, these changes have multiple stages including strategy and challenge identification, efficiency and streamlining, implementation, and cross sector and transdisciplinary aspects.

[36] Vogel, R. Göbel, M. Grewe-Salfeld, M. Herbert, B. Matsuo, Y. Weber, C. Cross sector partnerships: Mapping the field and advancing an institutional approach

[37] Seifert, R. Elalem, Y. Sustainable supply chains: time to get serious

[38] Kritz , J. Effective Cross Sector Collaborations Create Sustainability. The Lancet Global Health, 2018

However, the research already in this field is a powerful indicator that if these CSR changes are implemented at the right nexus of collaboration and within the right crossovers of stakeholders, they can have profound systematic changes that offer new insights into this crucial field and can catalyse the development and implementation of plans and human frameworks to increase resilience against future environmental challenges.

4.1 Topics for Future Recommendations

This green paper, along with the following two green papers in the series, provide only a broad and generalistic summary of key topics that would provide value and benefit to inform the development and operation of a GBN. As such, the following topics from this paper are further detailed here to prepare for those future recommendations, which will be more comprehensively detailed in the subsequent white papers.

4.2 Climate Anxiety

Climate anxiety can manifest at an organizational level in several ways:

1. Resistance to change: Employees may resist or be hesitant to adopt sustainable practices or initiatives due to feelings of anxiety or uncertainty about the potential impacts of climate change. This resistance can hinder the organization's ability to implement sustainable strategies.
2. Risk aversion: Organizations may be more inclined to stick with traditional, less sustainable practices and technologies in order to minimize perceived risks associated with climate change. This risk aversion can prevent the organization from exploring and implementing innovative and sustainable solutions.
3. Lack of long-term planning: Climate anxiety can lead to a focus on short-term goals and immediate concerns, rather than long-term sustainability planning. This can result in missed opportunities for the organization to adapt and mitigate the effects of climate change.
4. Decreased employee morale and productivity: Climate anxiety can negatively impact employee well-being and mental health, leading to decreased morale and productivity. This can affect the overall performance and effectiveness of the organization.

5. Reputation and brand image: Organizations that are perceived as not taking climate change seriously or not prioritizing sustainability may face reputational risks. Climate anxiety among stakeholders, including customers, investors, and the public, can lead to negative perceptions of the organization and its brand.

It is important for organizations to address climate anxiety and create a supportive and proactive environment that encourages sustainable practices and innovation. This can be done through education and awareness programs, employee engagement initiatives, and the development of clear sustainability goals and strategies.

4.3 The role of SMEs

International institutions such as the European Union have taken measures to encourage companies to integrate environmental, social, and governance (ESG) factors into their operations, such as climate-related benchmarks, Taxonomy Regulation criteria for sustainable activities (European Union, 2020) and the Sustainable Finance Disclosure Regulation (European Union, 2019; Busch, 2023). Amidst these efforts, the role of small and medium sized enterprises (SMEs) in the transition towards sustainability cannot be overstated. Given their contribution to global economic activity, social well-being, and environmental and geographic and sectorial footprint, they have tremendous potential as drivers of green and inclusive growth (Koirala, 2019). Potentially, even more so than the larger corporations. However, SMEs often face challenges in accessing finance, hindering their ability to adopt sustainable practices (Bakhtiari et al., 2020). SSCF funds have the potential to drive positive change, foster transparency, and facilitate investments in truly sustainable initiatives. As we strive to achieve the objectives outlined in the Paris Agreement and the 2030 Agenda for Sustainable Development, SSCF funds offer a pathway towards a more resilient and equitable future for all stakeholders.

4.4 Changing short term views

The key driver to change short term views to long term for sustainability, aside from that of compliance or regulation, which, may elicit resentment and a tick-box attitude, is a corporation's philosophy or vision that is able to determine its commitment to long-term sustainability and its understanding of its role in society. This can include a focus on environmental stewardship, social inclusion, and ethical business practices. Economic value refers to the financial benefits that can be derived from sustainable practices, such as increased revenue, improved brand reputation, and long-term profitability. By aligning short-term goals with long-term sustainability objectives, corporations can create a positive impact on the environment and society while also ensuring their own economic success.

4.5 Contribution of CSR to Innovation

CSR can contribute to innovation and revitalizing economies in several ways. Encouraging sustainable practices: CSR initiatives often focus on promoting sustainable practices within companies. This can include adopting renewable energy sources, reducing waste and emissions, and implementing environmentally friendly production processes. By prioritising sustainability, companies can drive innovation in clean technologies and practices, which can lead to economic growth and job creation in the green sector.

Fostering collaboration and partnerships: CSR initiatives often involve collaboration and partnerships between companies, governments, and non-profit organisations. These collaborations can facilitate knowledge sharing, resource pooling, and joint research and development efforts. By working together, stakeholders can leverage their expertise and resources to drive innovation and create new economic opportunities.

Supporting social entrepreneurship: CSR initiatives can support social entrepreneurship, which involves using business principles to address social and environmental challenges. By providing funding, mentorship, and other forms of support to social entrepreneurs, companies can help drive innovation in areas such as renewable energy, sustainable agriculture, and affordable healthcare. These innovations can have a positive impact on communities and contribute to economic revitalization.

Enhancing brand reputation and attracting investment: Companies that prioritise CSR and sustainability often enjoy a positive brand reputation, which can attract customers, investors, and talent. Investors are increasingly looking for companies that demonstrate a commitment to environmental and social responsibility. By aligning their business practices with CSR principles, companies can attract investment and access capital for innovation and growth.

Addressing societal needs and market demands: CSR initiatives that focus on addressing societal needs and market demands can drive innovation and economic growth. By understanding the needs and preferences of consumers, companies can develop products and services that meet sustainability criteria and contribute to a more sustainable future. This can create new market opportunities and drive economic revitalization.

5 Conclusion

This document, D8.12 *Governance and Policy Recommendations (1) for ST8.4.3 Governance and Incentive Opportunities linked to Corporate Social Responsibility*, provides a broad summary of the drivers, enablers, and incentives for changing corporate mindsets towards long-term sustainability. It emphasises the importance of compliance, vision, and economic value in driving CSR initiatives. The document also explores the potential benefits of CSR changes for both corporations and local communities, including value retainment, environmental benefits, and job creation. Additionally, it highlights the role of Supply Chain Finance (SCF) in mitigating financial constraints and promoting sustainability within supply chains, particularly for SMEs which represent the engine room of growth across European markets. Overall, the document emphasizes the need for holistic CSR strategies that consider the economic, social, and environmental aspects of sustainability and foster collaboration across sectors. By implementing these changes, corporations can contribute to the achievement of sustainable development goals and create a more resilient and equitable future for all stakeholders. The aspects summarised in this report will be more comprehensively and specifically detailed, along with specific recommendations in terms of the development of GBNs, within the forthcoming white papers.