

**ENVIRONMENT SUSTAINABILITY AND CSR POLICY: A CRITICAL
ANALYSIS OF CSR COMMITTEE OF THE
GUJARAT BASED INDUSTRIES**

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Abstract :

The term ‘Corporate Social Responsibility (CSR)’ can be referred as corporate initiative to assess and take responsibility for the company's effects on the environment and impact on social welfare. The Ministry of Corporate Affairs, Government of India has notified the Section 135 of the Companies Act, 2013 along with Companies (Corporate Social Responsibility Policy) Rules, 2014 which makes it mandatory for certain companies to fulfil the criteria as mentioned under Sub Section 1 of Section 135 to comply with the provisions relevant to CSR. As per the said section, the companies having Net worth of INR 500 crore or more; or Turnover of INR 1000 crore or more; or Net Profit of INR 5 crore or more during any financial year shall be required to constitute a Corporate Social Responsibility Committee of the Board “hereinafter CSR Committee” with effect from 1st April, 2014.

The CSR Committee constituted in pursuance of Section 135 of the Companies Act, 2013 shall be required to carry out the following activities:

- a) Formulate and recommend to the Board, a Corporate Social Responsibility Policy which shall indicate the activities to be undertaken by the company as specified in Schedule VII;
- b) Recommend the amount of expenditure to be incurred on the activities referred to in clause (a);
and
- c) Monitor the Corporate Social Responsibility Policy of the company from time to time.

All activities under the CSR activities should be environment friendly and socially acceptable to the local people and Society. The contribution towards C.M relief fund shall be a part of CSR activities above 2% of Net profit other than the various social environmental activities etc.

This paper shall examine the performance of the top 10 listed companies who are Gujarat based to analyse their performance of the environment sustainability and the effectiveness of CSR Committee in practice.

Keywords: CSR, Companies Act, Environment Sustainability, CSR Committee

Introduction:

Corporate social responsibility (CSR) is the idea that businesses have obligations not only to shareholders but to society at large and must act in social and environmentally responsible ways. Corporate social responsibility means a business’s performance is measured not only in terms of profit, but in how well it addresses its social and environmental impacts.

Environmental sustainability is the responsibility to conserve natural resources and protect global ecosystems to support health and wellbeing, now and in the future. A key element of environmental sustainability is its forward-looking nature. The U.S. Environmental Protection Agency defines sustainability as “meeting today’s needs without compromising the ability of future generations to meet their needs.”⁵ The government has to the goal to “create and maintain conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations.”

The nested model (below) shows how each dimension is dependent on the next. The economy is dependent on society, and both are dependent on the environment.

Economy, Society, Environment: A Nested Relationship



⁵ Sustainability and the Roe, accessed <https://www.epa.gov/report-environment/sustainability-and-roe>, retrieved on 18 Sep. 24

Source: United States Environmental Protection Agency⁶

The companies have the responsibility to implement the environmentally sustainable practices. The unrestricted consumption damages the welfare for the society and human at large. There is a need to create a sustainable business. There is a concept of “triple bottom line,” which mean measuring and responding to social and environmental impacts alongside profits. The term ESG (Environmental, Social and Governance) and sustainability are used interchangeably.

Definition of Sustainability

Sustainability is commonly characterized in terms of the interdependence among three broad dimensions namely environment, economy, and society; while considering both present and future generations.

In 1987, the United Nations Brundtland Commission⁷ published this particular definition of sustainability in the Brundtland report, which called for a strategy that united development and the environment. The sustainability being defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability is understood as a form of intergenerational ethics in which the environmental and economic actions taken by present persons do not diminish the opportunities of future persons to enjoy similar levels of wealth, utility, or welfare.

Sustainability is often understood as synonym to sustainable development. Sustainability is presented as an alternative to short-term, myopic and wasteful behaviours. Its an umbrella term for many green concepts and corporate responsibility while ESG has become the preferred term for investors and the capital markets.

Craig Carter & Dale Rogers (2008)⁸ looked at sustainability from the economic, social and environmental aspects while incorporating the business aspects of risk management, transparency, strategy and culture.

⁶ ibid

⁷ Brundtland Commission Report, accessed at <http://www.un-documents.net/our-common-future.pdf>, on 18 Sep. 24

⁸ Carter, C.R. and Rogers, D.S. (2008), "A framework of sustainable supply chain management: moving toward new theory", International Journal of Physical Distribution & Logistics Management, Vol. 38 No. 5, pp. 360-387. <https://doi.org/10.1108/09600030810882816>

Business and Sustainable Development: A Global Guide (1992)⁹ stated that “sustainability for a business enterprise means adopting business strategies and activities that meet the needs of the enterprise and stakeholders today, while protecting, sustaining and enhancing the human and natural resources that will be needed in the future”.

P Shrivastava (1995)¹⁰ defined sustainability as “offering the potential for reducing the long-term risks associated with resource depletion, fluctuations in energy costs, product liabilities, pollution and waste management”.

Luis M A Bettencourt and Jasleen Kaur (2011)¹¹, the “concept of sustainable development...now pervades the agendas of governments and corporations as well as the mission of educational and research programs worldwide.” The intertwined concepts of sustainability and development are linked to concerns about the health of social-ecological systems and the increasingly evident human dimensions of global change.

Stoddart (2011)¹² defines sustainability as the efficient and equitable distribution of resources intra-generationally and inter-generationally with the operation of socio-economic activities within the confines of a finite ecosystem.

Ben-Eli (2015)¹³, on the other hand, sees sustainability as a dynamic equilibrium in the process of interaction between the population and the carrying capacity of its environment such that the population develops to express its full potential without producing irreversible adverse effects on the carrying capacity of the environment upon which it depends.

The Triple Bottom Line (TBL) approach focusing on the three Dimensions of Our Human-Ecological System. This method asks you to see beyond the traditional bottom line of business to the profits that your business makes socially, environmentally, and economically. TBL concept

⁹ Business and Sustainable Development: A Global Guide 1992, accessed on 18 Sep. 24
www.bsdglobal.com/pdf/business_strategy.pdf

¹⁰ Shrivastava, P 1995, ‘The role of corporations in achieving ecological sustainability’, *Academy of Management Review*, vol. 20, no. 4, pp. 936-960.

¹¹ Luis M. A. Bettencourt and Jasleen Kaur, 2011, Evolution and structure of sustainability science, accessed at <https://www.pnas.org/doi/10.1073/pnas.1102712108>, retrieved on 21 Sep. 24

¹² Stoddart, H., Schneeberger, K., Dodds, F., Shaw, A., Bottero, M., Cornforth, J., & White, R. (2011), ‘A pocket guide to sustainable development governance’, Stakeholder Forum, accessed at <https://www.tandfonline.com/doi/pdf/10.1080/23311886.2019.1653531>, retrieved on 22 Sep. 24

¹³ Ben-Eli, M. (2015), ‘Sustainability: Definition and five core principles a new framework the sustainability laboratory’, New York, NY info@sustainabilitylabs.org | www.sustainabilitylabs.org, accessed at <https://www.tandfonline.com/doi/pdf/10.1080/23311886.2019.1653531>, retrieved on 22 Sep. 24

has been given by John Elkington¹⁴ in his research article, Towards the Sustainable Corporation: Win-Win-win Business Strategies for Sustainable Development. When a company adopts this approach, it is essentially saying that profits are not the only measure of success. It recognizes that a company's value lies not just in its financial profits, but also in its ability to contribute positively to society and the environment. The rationale behind the Triple Bottom Line concept was that companies could be managed in a way that not only yielded financial gain but also improved the lives of individuals and the health of the environment.

The **environment** represents the natural world, including native animals and plants, mineral deposits, soil, water, and air.

The **economy** comprises activities that provide products and services to people. These include manufacturing, agriculture, mining, power generation, drinking water treatment, wastewater treatment, solid waste management, health care, construction, and commercial fishing and aquaculture.

Society represents people, their actions, and their quality of life. This includes human health and well-being, government and other institutions, buildings, transportation and utility infrastructure, and recreation.

¹⁴ John Elkington, Towards the Sustainable Corporation: Win-Win-win Business Strategies for Sustainable Development, accessed at <https://journals.sagepub.com/doi/10.2307/41165746>, retrieved on 18 Sep. 24

There is a need to have the coordination amongst these three dimensions to have the sustainability

Sustainability Framework



Adapted from Fiksel, J. A systems view of sustainability: The triple value model. Environmental Development 2 (2012) 138-141

framework.

Source: Joseph Fiksel, A Systems view of Sustainability: The Triple Value Model¹⁵

The three pillars of sustainability have been added with the fourth pillar ie. Human Sustainability. In 2020, the Executive Bureau of United Cities and Local Governments (UCLG)¹⁶, promoted the use of a fourth pillar and suggested that human (culture) sustainability was as important as the other three pillars. Now the four pillars are namely:

- Human Sustainability
- Social Sustainability
- Economic Sustainability
- Environmental Sustainability

Human Sustainability refers to the sustainment and improvement of human resources/assets or culture within society. It focuses on the importance of human capital.

¹⁵Joseph Fiksel, A Systems view of Sustainability: The Triple Value Model, accessed on <https://www.sciencedirect.com/science/article/abs/pii/S2211464512000541?via%3Dihub>

¹⁶ Culture: The Fourth Pillar of Sustainable Development, accesses [https://uclg.org/sites/default/files/9890675406_\(EN\)_culture_fourth_pillar_sustainable_development_eng_0.pdf](https://uclg.org/sites/default/files/9890675406_(EN)_culture_fourth_pillar_sustainable_development_eng_0.pdf), retrieved on 18 Sep. 24

Social Sustainability refers to the principle that society and the environment are mutually dependent. The goal of social sustainability recognize that all of us have an impact on others and on the world by what we do.

Economic sustainability defined as the economic ability to support a specified level of economic production indefinitely.

Environmental Sustainability aims to enhance the welfare of the population through the strength and stability of our natural capital.

Environmental Sustainability:

The concept of environmental sustainability is about the natural environment and how it remains productive and resilient to support human life. Environmental sustainability relates to ecosystem integrity and carrying capacity of natural environment.

According to Opoku and others (2022)¹⁷, environmental sustainability should be the important aspect of Sustainable Development which help in addressing the issues of climate change. The CO₂ omission results from the climate change and global warming. Because of the world's temperature rise, many lower lying countries may have been submerged by the increase of water levels of sea. However, under the Paris Agreement 2016¹⁸, the member countries have pledges to reduce global temperatures below 2°C.

According to the U.N. Environment Programme, environmental sustainability involves making life choices that ensure an equal, if not better, way of life for future generations. It aims to improve the quality of human life without compromising earth's supporting ecosystems. The aim is to strike a balance between consumerist human behaviour and the living world.

The importance of environmental sustainability has grown because of the rapid population growth which has resulted in increasing pressure on farming, manufacturing sectors and resulted into increase of green house gases, usage of non-renewable energy and deforestation. The environmental sustainability focuses on the various practices and habits which can save the Planet Earth.

There are two ways in which environmental sustainability can be achieved: at the individual level and second at the government and corporate levels. At the individual level we may optimally use

¹⁷ Opoku, E. E. O., Dogah, K. E., Dogah, Aluko, O. A. (2022). The contribution of human development towards environmental sustainability. *Energy Economics*. 106,105782. <https://doi.org/10.1016/j.eneco.2021.105782>

¹⁸ The Paris Agreement, accessed at <https://unfccc.int/process-and-meetings/the-paris-agreement>, retrieved on 21 Sep. 24.

the water, reduce our consumption habit and adopting renewable and reusable products to protect the environment. Whereas at the government or corporation level, usage of renewable energy at the warehouse, industry, offices and saving the electricity, usage of reusable products etc.

Theories of Sustainability

A theory may be understood as a set of interrelated propositions. Ulrich Grober provides a genealogy of the term “sustainable development,” which he traces back to Carl von Carlowitz some 300 years ago. While the idea of sustainable development has emerged in many cultures of the world, the conceptualization of sustainable development as such began with Carlowitz in seventeenth-century Europe¹⁹.

Sustainability Concept(s)	Works
<p>Choices Matter.</p> <ul style="list-style-type: none"> • It is not possible to sustain everything, everywhere, forever. • Transitions and pathways toward sustainability are key; we will not be able to identify arrival at “sustainability.” • Because systems are dynamic, sustainability is a moving target; there is no endpoint for efforts to reach or maintain it. • For any identified place or region, and for any identified material or condition, there will be different states of lesser or greater sustainability. • Gradual changes and sudden threshold-related shifts are both possible. 	<p>NRC 1999²⁰; Leathers and Harrington 2000²¹; Kates, Travis, and Wilbanks 2012²²</p>
<p>Sustainability is a normative concept.</p>	<p>NRC 1999²³, Kates et al. 2001²⁴, Parris and</p>

¹⁹ Judith C Enders and Moritz Remig (2015), ‘Theories of Sustainable Development’, New York, Routledge.

²⁰ National Research Council, Board on Sustainable Development (NRC). 1999. Our Common Journey: A Transition toward Sustainability. Washington: National Academy Press.

²¹ Leathers, N., and L.M.B. Harrington. 2000. Effectiveness of conservation reserves: ‘Slippage’ in Southwestern Kansas. The Professional Geographer 52(1):83-93.

²² Kates, R. W., W. R. Travis, and T. J. Wilbanks. 2012. Transformational adaptation when incremental adaptations to climate change are insufficient. PNAS 109(19): 7156–7161.

²³ Supra 13

²⁴ Kates, R. W., W. C. Clark, R. Corell, J. M. Hall, C. C. Jaeger, I. Lowe, J. J. McCarthy, H. J. Schellnhuber, B. Bolin, N. M. Dickson, S. Faucheux, G. C. Gallopin, A. Gruebler, B.

<ul style="list-style-type: none"> • The idea of sustainability is inextricably connected to what we see as desirable. • What is desired varies with reference frame: people have different desires, and judge possible futures in different ways depending on the situation, including temporal outlook and spatial location. • Research provides improved understandings relevant to normative decisions. 	<p>Kates 2003²⁵</p>
<p>Sustainability is a fuzzy concept.</p> <ul style="list-style-type: none"> • Sustainability is defined differently by different communities and interest groups. • Because the term is applied to many different desires, meaning is not always clear. • Perceptions matter to judgments and management relevant to sustainability • Utilitarian and human values tend to be focal concerns, but sole attention to narrow definitions could cause irredeemable losses 	<p>More 1996²⁶; Palmer, Cooper, and van der Vorst 1997²⁷; Ducey and Larson 1999²⁸; Cawley, de S.M. Bicalho, and Laurens 2013²⁹</p>

Huntley, J. Jäger, N. S. Jodha, R. E. Kasperson, A. Mabogunje, P. Matson, H. Mooney, B. Moore III, T. O’Riordan, and U. Svedin. 2001. Sustainability Science. *Science* 292: 641-642.

²⁵ Kates R. W., T. M. Parris, and A. A. Leiserowitz. 2005. What is sustainable development? Goals, indicators, values, and practice. *Environment: Science and Policy for Sustainable Development* 47(3): 8–21.

²⁶ More, T. A. 1996. Forestry’s fuzzy concepts: An examination of ecosystem management. *Journal of Forestry* 94(8): 19-23.

²⁷ Palmer, J., I. Cooper, and R. van der Vorst. 1997. Mapping out fuzzy buzzwords – who sits where on sustainability and sustainable development. *Sustainable Development* 5: 87-93.

²⁸ Ducey, M. J., and B. C. Larson. 1999. A fuzzy set approach to the problem of sustainability. *Forest Ecology and Management* 111: 29-40.

²⁹ Cawley, M., A. M. de S M Bicalho, and L. Laurens, eds. 2013. *The Sustainability of Rural Systems: Global and Local Challenges and Opportunities*. Galway: IGU CSRS and Whitaker Institute.

<p>Scale matters, in both space and time.</p> <ul style="list-style-type: none"> • What is sustainability at one scale may not be so over a smaller or larger area; to become ‘sustainable,’ cities will most likely need connections to supporting rural areas that are sustainable. • Conditions change over time, and trends affect progress with respect to sustainability goals, from local to global scales. 	<p>Wilbanks 1994³⁰, 2006³¹; NRC 1999³²; Wilbanks and Kates 1999³³; Kates, Parris, and Leiserowitz 2005³⁴</p>
<p>Place matters.</p> <ul style="list-style-type: none"> • Places (at whatever scale) differ; at the most basic, the physical environmental characteristics available for sustaining also differ. • Cultures differ from place to place and can greatly influence societal efforts to move forward along a path toward sustainability. 	<p>Wilbanks 1994³⁵, 2006³⁶, Wilbanks and Kates 1999³⁷, Bergstrom 2009³⁸, Bergstrom and Harrington 2013³⁹</p>

³⁰ Wilbanks, T. J. 1994. Presidential address: “Sustainable development” in geographic perspective. *Annals of the Association of American Geographers* 84(4): 541-556

³¹ Wilbanks, T. J. 2006. How scale matters: Some concepts and findings. In *Bridging Scales and Knowledge Systems: Concepts and Applications in Ecosystem Assessment*, ed. W. V. Reid et al., 21-35. Washington: Island Press.

³² Supra 13

³³ Wilbanks, T. J., and R. W. Kates. 1999. Global change in local places: How scale matters. *Climatic Change* 43: 601-628

³⁴ Kates R. W., T. M. Parris, and A. A. Leiserowitz. 2005. What is sustainable development? Goals, indicators, values, and practice. *Environment: Science and Policy for Sustainable Development* 47(3): 8–21.

³⁵ Supra 23

³⁶ Supra 24

³⁷ Supra 26

³⁸ Bergstrom, R. D. 2009. Perceptions of sustainable community development and natural resource management: A case study of two Montana amenity towns. *Papers of the Applied Geography Conference* 32: 86-95.

³⁹ Bergstrom, R., and L. M. B. Harrington. 2013. Balancing economies, communities, and the environment in the Greater Yellowstone ecosystem. *Journal of Rural and Community Development* 8(3): 228-241.

<p>Systems thinking is an organizing concept.</p> <ul style="list-style-type: none"> • Systems of concern for sustainability and sustainable development efforts are both connected and embedded • Dependence between systems is variable in time and space. • Both proximate and ultimate drivers of conditions and change are of importance. 	<p>Nelson 2005⁴⁰, Carpenter et al. 2006⁴¹, Liu et al. 2007⁴², Reid et al. 2010⁴³, Bettencourt and Kaur 2011⁴⁴, Costanza et al. 2013⁴⁵</p>
<p>Limits exist.</p> <ul style="list-style-type: none"> • The Earth is finite, and although humans have the capacity to modify conditions and resource production, there are physical limits to how far various aspects of the system can be pushed. • Feedbacks affect system resilience and nearness to thresholds. 	<p>Rockström et al. 2009a⁴⁶, 2009b⁴⁷; Mace et al. 2014⁴⁸; Steffen</p>

⁴⁰ Nelson, G.C. 2005. Drivers of ecosystem change: summary chapter. In *Ecosystems and Human Well-being: Current State and Trends*, Volume 1, ed. R. Hassan, R. Scholes, and N. Ash, 73-76. Washington: Island Press.

⁴¹ Carpenter, S. R., R. DeFries, T. Dietz, H. A. Mooney, S. Polasky, W. V. Reid, and R. J. Scholes. 2006. Millennium ecosystem assessment: research needs. *Science* 314: 257-258.

⁴² Liu, J., T. Dietz, S. R. Carpenter, M. Alberti, C. Folke, E. Moran, A. N. Pell, P. Deadman, T. Kratz, J. Lubchenco, E. Ostrom, Z. Ouyang, W. Provencher, C. L. Redman, S. H. Schneider, and W. W. Taylor. 2007. Complexity of coupled human and natural systems. *Science* 317: 1513-1516.

⁴³ Reid, W. V., D. Chen, L. Goldfarb, H. Hackmann, Y. T. Lee, K. Mokhele, E. Ostrom, K. Raivio, J. Rockström, H. J. Schellnhuber, and A. Whyte. 2010. Earth system science for global sustainability: grand challenges. *Science* 330: 916-917.

⁴⁴ Supra 7

⁴⁵ Costanza, R., G. Alperovitz, H. Daly, J. Farley, C. Franco, T. Jackson, I. Kubiszewski, J. Schor, and P. Victor. 2013. Building a sustainable and desirable economy-in-society-in-nature In *State of the World 2013: Is Sustainability Still Possible?* : E. Assadourian and T. Prugh, project directors, 126-142. Washington: Island Press.

⁴⁶ Rockström, J., W. Steffen, K. Noone, Å. Persson, F. S. Chapin, E. F. Lambin, T. M. Lenton, M. Scheffer, C. Folke, H. J. Schellnhuber, B. Nykvist, C. de Wit, T. Hughes, S. van der Leeuw, H. Rodhe, S. Sörlin, P. K. Snyder, R. Costanza, U. Svedin, M. Falkenmark, L. Karlberg, R. W. Corell, V. J. Fabry, J. Hansen, B. Walker, D. Liverman, K. Richardson, P. Crutzen, and J. A. Foley. 2009a. A safe operating space for humanity. *Nature* 461: 472-475.

⁴⁷ -- 2009b. Planetary boundaries: exploring the safe operating space for humanity. *Ecology and Society* 14(2): 32 (online; <http://www.ecologyandsociety.org/vol14/iss2/art32/>).

⁴⁸ Mace, G. M., B. Reyers, R. Alkemade, R. Biggs, F. S. Chapin III, S. E. Cornell, S. Díaz, S. Jennings, P. Leadley, P. J. Mumby, A. Purvis, R. J. Scholes, A. W. R. Seddon, M. Solan, W. Steffen, and G. Woodward. 2014. Approaches to defining a planetary boundary for biodiversity. *Global Environmental Change* 28: 289-297

<ul style="list-style-type: none"> Renewable resources should be removed and used at no more than the rate of renewal. 	et al. 2015a ⁴⁹ , 2015b ⁵⁰
<p>Sustainability is interconnected with other essential concepts.</p> <ul style="list-style-type: none"> Practitioners should be aware of resilience, adaptive capacity, and vulnerability. 	Gunderson and Holling 2002 ⁵¹ , Turner et al. 2003 ⁵² , Walker et al. 2004 ⁵³ , Adger 2006 ⁵⁴ , Eakin and Luers 2006 ⁵⁵ , Walker and Salt 2006 ⁵⁶ , O’Brien et al. 2012 ⁵⁷
<p>Change is an essential consideration and challenge for</p>	Turner et al. 1990a ⁵⁸ ,

⁴⁹ Steffen, W., W. Broadgate, L. Deutsch, O. Gaffney, and C. Ludwig. 2015a. The trajectory of the Anthropocene: The great acceleration. *The Anthropocene Review* (May 1): 1-8.

⁵⁰ -- 2015b. Planetary boundaries: Guiding human development on a changing planet. *Science* 347(6223): (online; DOI 10.1126/science.1259855).

⁵¹ Gunderson, L. H., and C. S. Holling. 2002. *Panarchy: Understanding Transformations in Human and Natural Systems*. Washington, DC: Island Press

⁵² Turner II, B. L., R. E. Kasperson, P. A. Matson, J. J. McCarthy, R. W. Corell, L. Christensen, N. Eckley, J. X. Kasperson, A. Luers, M. L. Martello, C. Polsky, A. Pulsipher, and A. Schiller. 2003. A framework for vulnerability analysis in sustainability science. *PNAS* 100: 8074–8079.

⁵³ Walker, B., C. S. Holling, S. R. Carpenter, and A. Kinzig. 2004. Resilience, adaptability and transformability in social-ecological systems. *Ecology and Society* 9(2): 5 (online; <http://www.ecologyandsociety.org/vol9/iss2/art5/>).

⁵⁴ Adger, W. N. 2006. Vulnerability. *Global Environmental Change* 16: 268-281.

⁵⁵ Eakin, H., and A. L. Luers. 2006. Assessing the vulnerability of social-environmental systems. *Annual Review of Environmental Resources* 31: 365-94.

⁵⁶ Walker, B., and D. Salt. 2006. *Resilience Thinking: Sustaining Ecosystems and People in a Changing World*. Washington, DC: Island Press.

⁵⁷ O’Brien, K., M. Pelling, A. Patwardhan, S. Hallegatte, A. Maskrey, T. Oki, U. Oswald-Spring, T. Wilbanks, and P. Z. Yanda. 2012. Toward a sustainable and resilient future. In *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*, ed. C. B. Field et al., 437-486. Special report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC). Cambridge: Cambridge University Press. [http://www.ipcc-wg2.gov/SREX/images/uploads/SREX All_FINAL.pdf](http://www.ipcc-wg2.gov/SREX/images/uploads/SREX_All_FINAL.pdf)

⁵⁸ Turner II, B. L., W. C. Clark, R. W. Kates, J. F. Richards, J. T. Mathews, and W. B. Meyer, eds. 1990a. *The Earth as Transformed by Human Action: Global and Regional Changes in the Biosphere over the Past 300 Years*. Cambridge, NY: Cambridge University Press.

sustainability.

- Environmental (climatic and oceanic systems, land use and land cover), economic, and social/cultural changes are factors in sustainability.
- Change at one location/scale can propagate through systems at different scales.
- Unanticipated change constitutes what is known as ‘surprise’ and requires adaptive approaches to management.

1990b⁵⁹; NRC 1999⁶⁰;
Kates et al. 2001⁶¹;
Walker and Salt
2006⁶²

Source: Lisa Mathis Butler Harrington⁶³

Corporate Social Responsibility:

The quest for unbridled growth is imposing ever greater demands on the earth system and placing ever greater strain on these limits because technological advancement may fail to support exponential growth. Over the last two decades we have almost seen a boom of sustainability research, practice and rhetoric. “Green growth” is almost a new buzzword in economic discussions.

⁵⁹ Turner II, B. L., R. E. Kasperson, W. B. Meyer, K. M. Dow, D. Golding, J. X. Kasperson, R. C. Mitchel, and S. J. Ratick. 1990b. Two types of global environmental change: Definitional and spatial-scale issues in their human dimensions. *Global Environmental Change* (Dec): 14-22.

⁶⁰ Supra 13

⁶¹ Supra 17

⁶² Supra 49

⁶³ Lisa Mathis Butler Harrington (2016), titled, ‘Sustainability Theory and Conceptual Considerations: A Review of key ideas for Sustainability and the Rural Context, available at https://www.researchgate.net/publication/309619897_Sustainability_Theory_and_Conceptual_Considerations_A_Review_of_Key_Ideas_for_Sustainability_and_the_Rural_Context, accessed on 22 September 2024