GFCC
Global Federation of Competitiveness Councils

CALL TO ACTION

Innovate the Sustainable Future

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The Global Federation of Competitiveness Councils (GFCC) is a network of leaders and organizations from around the world committed to the implementation of competitiveness strategies to drive innovation, productivity and prosperity for nations, regions and cities. The GFCC develops and implements ideas, concepts, initiatives and tools to understand and navigate the complex competitiveness landscape.

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Executive Summary

Innovation must assume a central role to address the challenges and seize the opportunities of sustainability. Innovation must extend beyond the development of clean technologies, transcending the obvious to encompass a range of issues—from reshaping educational paradigms for our youth, to reconfiguring investment strategies, and rethinking the way we build our cities and foster community engagement.

This Call to Action offers key recommendations to stakeholders in government, industry, academia, and civil society to innovate and advance sustainability. It begins by acknowledging that sustainable progress hinges on a careful balance of short- and long-term goals, right at the intersection of environmental, social, and economic dimensions. Moreover, this Call to Action underscores the urgency of taking immediate action but also anticipates tangible short-term benefits resulting from these actions.

These recommendations reflect the expertise accumulated among the GFCC members and fellows, drawing insights from a diverse network spanning more than 30 nations, and comprising influential leaders from government, industry, and academia. Nevertheless, they are not exhaustive, nor do they cover all the actions needed or possible to advance sustainability.

We call members of civil society to innovate and champion new solutions to address actively humanity's fundamental rights to thriving communities, vibrant economies, and a clean environment.

We call upon governments to expand innovation investments and public policies toward addressing the pressing challenge of resolving sustainability issues, creating new value, and safeguarding both our planet and the well-being of communities.

We urge industry stakeholders to commit further to investing in developing and deploying clean technologies and innovative business models, sustainable infrastructure, and environmentally friendly processes and products, with the assurance that these investments will yield substantial, long-term benefits, but also create new value.

We encourage universities to embrace innovation, build novel partnerships across sectors, and mobilize their scientific expertise and research infrastructures to generate and translate knowledge into real-world applications to advance sustainability, while also educating and nurturing the growth of informed and responsible future-shapers.

Our key recommendations for action are organized in three domains—Resources, People, and Systems—and 10 critical areas:

1. Boost the productivity of **natural resources**.
2. Seize the **energy** transition opportunity.
3. Incorporate sustainability as a key criterion for **infrastructure** development.
4. Adopt sustainable **consumption and production** models.
5. Promote **well-being** to empower communities to achieve their full potential.
6. Invest in **skills** development to enable people to access economic opportunities.
7. Couple the expansion of **R&D** with translation and dissemination.
8. Focus on data and principles for sustainability **governance and management**.
9. Use novel financial architectures to mobilize resources for sustainable **investment**.
10. Leverage education to forge a future sustainability-oriented **mindset**.

We invite you to read the complete document and take immediate action to address sustainability challenges. Rest assured, we are committed to joining you on this journey!

The Complex Balance of Sustainability Frameworks

What is sustainability about?

Sustainability pertains to the long-term viability of a system. When we consider human systems and their impact on the planet, it becomes evident that there is more to consider than just the environment. As proposed by the U.N., sustainability and sustainable development entail juggling three crucial aspects simultaneously: economic performance, social inclusion, and environmental protection. Sustainability involves the delicate balancing of not only these three dimensions but also short-term and long-term considerations.

The concept of sustainability exists in various forms and is often complex, not widely understood, and poorly defined in many places and domains. Given this complexity, it is crucial to emphasize key elements that help convey its meaning. Sustainability:

1. Operates at the intersection of the environment, society, and the economy.
2. Necessitates a careful balance between short-term and long-term goals.
3. Is fundamentally a systemic issue and should be approached as such.

Environment, society and economy

Sustainability implies a balance among economic performance, social well-being, and environmental protection. Advancing one or two dimensions at the expense of the other(s) is not sustainable. This can be illustrated with a counterexample.

For instance, if a coal mine is shut down due to its negative environmental impact, and coal burning generates CO_2 emissions, the solution will not be sustainable if the social dimension is not addressed. The long-term viability of the community, economy, and social system will be compromised. What will happen to the miners after the mine is closed? How will they earn their livelihoods? What will occur in the local economy? To be sustainable, the initiative needs to also address social and economic issues.

Short and long term

Sustainability is an intertemporal issue and requires dynamic thinking and action, balancing short- and long-term actions and impacts. Typically, short-term issues are related to the social and economic dimensions of sustainability, while long-term issues concern the environmental impact.

For example, from a micro perspective, a product brought to the market can have negative effects on the environment and communities for years to come, emphasizing the need for life-cycle assessment. From a macro perspective, many of today's growth models can be characterized as trading short-term socioeconomic progress for the long-term health of ecosystems and the integrity of natural assets. To advance sustainability, companies, economies, and societies need to balance short and long-term impacts.

A systemic issue

Sustainability involves a complex set of interconnected elements: people and society, the economy, and the natural environment. Anything sustainability related has multiple dimensions and links entities, stakeholders, and communities in various parts of the globe. Sustainability connects all the dots.

In addressing sustainability, it is crucial to define system boundaries. For example, a community might be deemed sustainable if it efficiently manages and preserves its treated water sources, even if it discharges untreated water downstream to another community. However, when considering the broader region and other communities, this behavior becomes unsustainable. Advancing sustainability is a process of systemic enlargement – a process in which the boundaries of a visualized system steadily expand.

As a systemic issue, sustainability encompasses multiple layers, and decisions at more fundamental and basic levels can constrain others. For example, if a city is designed with sprawling communities, it limits the possibilities for implementing mass transit solutions and influences the behaviors and preferences of its residents. In this sense, it is crucial to consider and build sustainability through intentional design. Design efforts must incorporate new concepts, technological solutions, policies, and business models to challenge perceived existing trade-offs within the system.

Advancing Sustainability: A Multistakeholder Challenge

To advance sustainability all concerned stakeholder are called to:

- **Expand the understanding of sustainability**. It must include social, economic and environmental aspects. It is fundamental to translate the concept into clear examples and guidelines that people, organizations and policy stakeholders can easily understand and use.
- **Frame sustainability as an opportunity**. Creating a sustainable future will demand innovation in products, processes, business models, institutions, and beyond. It represents a massive opportunity for innovation, the creation of new value, and the generation of new jobs.
- **Build sustainability by design**. Human systems can and should be engineered to be sustainable. For instance, instead of pondering what to do when waste is generated, supply chains can be engineered to facilitate the circular reuse of materials. Rather than encountering high unemployment during periods of technological change, communities and economies can design initiatives to monitor needs and trends and adjust training and the supply of skills.
- **Take action now**. Advancing sustainability necessitates coordinated action across sectors, disciplines, and boundaries. Stakeholders in business, government, academia, and civil society cannot wait until a particular stage is reached to address the challenges and opportunities of sustainability. All must act promptly, continually assess the situation as they progress, and make necessary course corrections.
- **Use data and technology**. Organizations, communities and humanity at large should leverage all available technology tools to comprehend what is occurring on the planet and within human systems; design more sustainable systems; monitor the functioning of supply chains, nature, the economy, and society; report progress; and prepare to address future challenges and opportunities.
- **Educate society**. Advancing sustainability is also a battle for hearts and minds. In this context, a critical mission is to encourage more individuals to adopt sustainable thinking, raise awareness of sustainability opportunities, and promote the kinds of actions and frameworks required to seize them.

Why is innovation the underpinning factor of sustainability?

Innovation is the transformation of knowledge into new products, processes, methods, business models and organizational solutions that create economic and societal value.

Sustainability is not a burden but a significant opportunity. To create companies, supply chains, communities, economies, and societies that are more sustainable than our current ones, the world will require a range of new solutions that do not exist today. We need innovation in all domains, at scale and speed. The economic opportunities for developing and bringing these solutions to the market are vast. Advancing sustainability will necessitate investments, can stimulate growth, and uplift communities across the planet.

We need to go beyond.

To truly advance the concept of sustainability, a comprehensive update is imperative across various dimensions. First and foremost, we must adopt a perspective that incorporates nature into economic measurement and rationality. Policymakers and investors need to acknowledge the intrinsic link between environmental well-being and economic prosperity, and any sustainable framework should reflect this interdependence.

Furthermore, ethics should be a fundamental component of sustainability thinking and frameworks. It is essential to consider the moral implications of our actions on the planet, society, and future generations.

In the age of artificial intelligence, governments must establish ethical frameworks for AI that address the issue of job sustainability. As automation continues to reshape industries, these frameworks can help ensure that technological advancements benefit society.

Lastly, sustainability disciplines and agenda should integrate a dimension of security. Ensuring the safety and resilience of critical systems and infrastructures is paramount for long-term sustainability.

By addressing these dimensions, we can develop a more holistic and forward-thinking approach to sustainability that encompasses environmental, ethical, and societal considerations while fostering economic stability and security.

Innovation for Sustainability Action: Resources, People, and Systems

Innovation for sustainability must follow a multidimensional and multi-stakeholder approach, encompassing resources, people, and systems. Only by integrating these three dimensions, we can aspire to build a more enduring and resilient world.

Resources

Innovation is the key to boost **resources productivity** and minimize impact on the planet.

Within this domain, the focus lies on the responsible and productive management of resources. Innovation is needed to maximize value creation and at the same time minimize resources utilization. Strategies encompass harnessing renewable energy, implementing precision and nature-friendly agriculture practices, promoting the circular economy, conserving ecosystems, fighting waste of materials and energy, designing and managing urban settings to minimize the use of resources, ensuring sustainable forestry, and managing mineral reserves, maritime resources and water for long-term sustainability.

1. Boost the productivity of natural resources.
2. Seize the energy transition opportunity.
3. Incorporate sustainability as a key criterion for infrastructure development.
4. Adopt sustainable consumption and production models.

People

Sustainability requires equipping **people** to thrive and build a better future together

This domain centers on empowering individuals through skills development and well-being promotion. Innovation in health and skills development systems is essential to democratize access to high-quality services worldwide. The objective is to create a skilled, informed, healthy, and engaged workforce, capable of accessing economic opportunities and contributing to the innovation economy, fostering sustainable choices, economic resilience, and social well-being. Sustainable living, civic engagement and continuous learning are core principles for shaping a more sustainable future.

5. Promote well-being to empower communities to achieve their full potential.
6. Invest in skills development to enable people to access economic opportunities.

Systems

Sustainability calls for innovation in **governance and management** at all levels.

This domain seeks to adjust the systems in place governing organizations, countries, and the international order to make them conducive to sustainability. Innovation in institutions, governance and regulation models, management systems, and metrics is essential to enable a more sustainable future. Key strategies include reimagining global cooperation, advocating ethical business practices, integrating sustainability and ethics into education, advancing financial systems, harnessing the power of data, enhancing transparency and accountability, and innovating governance structures to prioritize long-term sustainability.

7. Couple the expansion of R&D with translation and dissemination.
8. Focus on data and principles for sustainability governance and management.
9. Use novel financial architectures to mobilize resources for sustainable investment.
10. Leverage education to forge a future sustainability-oriented mindset.

Recommendations from the GFCC Community

The following recommended actions synthesize the knowledge and insights gathered from GFCC members and fellows. Organized into 10 action areas, these recommendations cover a wide range of aspects, reinforcing one another and, in some cases, overlapping, reflecting the interconnections among sustainability dimensions and the systemic nature required for any solution. When organizing these recommendations, our primary focus was on presenting a coherent set of ideas and identifying the stakeholders to whom they are directed.

These recommendations, while substantial, are not exhaustive. They represent a robust starting point, but the complete path to advance sustainability may require actions beyond the ones outlined here. We invite you to explore the recommendations below and join us in innovating the sustainable future.

1. Boost the productivity of natural resources.

The productive use of natural resources is at the core of a sustainable future. Investment and innovation that promote sustainable utilization of natural resources should be prioritized while simultaneously conducting systematic monitoring of the impacts on the environment, communities, and ecosystems.

Civil society

- Monitor government and corporate activities to ensure adherence to environmental regulations and commitments.
- Promote community training for more efficient natural resource management.
- Provide training, organization, and market opportunities for locally sourced businesses.

Government

- Fund initiatives enabling cities and communities to assess natural resource status and utilization.
- Incentivize start-up companies to apply sustainability from the inception on the design of business models and processes.
- Prioritize, incentivize, and support efforts to reclaim, recover, and regenerate degraded land areas.

Industry

- Allocate investments to develop and introduce technology solutions that provide accurate and reliable measurements of carbon in nature-based solutions (NBS) projects.
- Establish the role of 'Chief Sustainability Officers' as an industry-wide standard, serving as a permanent function responsible for conceiving and implementing sustainability measures throughout all companies and supply chains.
- Increase resource productivity in food production by scaling up the use of digital technologies, optimizing the utilization of resources such as water, energy, and land.
- Invest in proven technologies to reduce water consumption across all production phases and throughout the entire supply chain.
- Leverage cutting-edge science and technology to enable integrated pest and pathogen management, thereby reducing the reliance on pesticides.

University

- Create research centers and initiatives focused on carbon measurement within nature-based solutions (NBS), soil regeneration, and the adoption of alternative nutrients and feeds.
- Collaborate with local communities and industries to establish innovation hubs that incubate and scale up resource-efficient technologies tailored to the local economy.
- Invest in research aimed at developing more productive and environmentally friendly food systems.

Global Competitiveness Principles

2, 4, 7, 8

Sustainable Development Goals

2. Seize the energy transition opportunity.

The transition from fossil fuels to renewable energy sources presents a significant opportunity for humanity to address climate change while also creating new value and economic opportunities. These efforts should also promote energy efficiency and ensure affordable access to energy.

Civil society

- Disseminate information about energy efficiency, transitioning, and related technologies.
- Form and support industry consortia to accelerate the development, and adoption of new clean technologies.
- Organize rural communities in the generation of power and gas through co-processing manure, slurries, and feedstock.

Government

- Create new financial and institutional architectures to support energy transition through Public-Private Partnerships (PPPs).
- Establish regulatory frameworks that facilitate distributed power generation and commercialization.
- Enhance funding and investments to expedite the development and deployment of clean technologies.
- Give priority to expanding electricity supply using renewable energy technologies.
- Incentivize the adoption of low carbon and clean energy technologies.
- Introduce carbon pricing mechanisms.
- Reduce investment risk in green energy by offering public guarantees.
- Streamline regulation and government processes to remove bureaucratic barriers to green energy projects.

Industry

- Adopt solutions for capturing and recycling carbon emissions.
- Allocate resources to develop solutions for long-duration energy storage technologies.
- Elevate cleantech and carbon capture/recycling technologies as top priorities for corporate venture capital investments.
- Foster cleantech entrepreneurship.
- Harness manure, slurries, and agricultural feedstock for both power generation and nutrient recycling.
- Invest in solutions for long duration energy storage technologies.
- Prioritize long term agreements for low carbon energy.

University

- Establish test beds and demonstration facilities dedicated to clean energy technologies.
- Implement workforce development programs to train personnel for careers in clean energy industries.
- Integrate energy transition and entrepreneurship as essential components of university curricula.

Global Competitiveness Principles

1, 2, 4, 6, 7, 8

Sustainable Development Goals

3. Incorporate sustainability as a key criterion for infrastructure development.

Changing consumption and production models includes deploying solutions and disseminating innovative technologies and business models throughout supply chains to enable reduction, reuse, recycling, and upcycling of materials. Producer responsibilities need to be expanded as well as standards and regulations aimed at reducing obstacles to the adoption of sustainable products.

Civil society

- Collect, systematize, and make available to developers, operators, and funders information about available clean technology products for infrastructure, related standards, and performance data.
- Disseminate information about the importance and opportunities created by sustainability in infrastructures.
- Systematize and disseminate information about preferred funding sources for sustainable infrastructure projects.

Government

- Apply time-bound tax incentives, grants, and subsidies when strictly needed to kickstart investment in sustainable infrastructure.
- Consider a multi-stakeholder perspective and metrics when compensating infrastructure development projects and operations.
- Emphasize the use of proven clean technologies in infrastructure development to lower costs and risks and speed up project implementation.
- Implement transparent and low-friction regulatory frameworks and prioritize Public-Private Partnerships (PPPs) for sustainable infrastructure development.
- Incorporate lifecycle assessments into infrastructure development projects.
- Incorporate sustainability criteria for evaluating and ranking infrastructure project options.
- Leverage purchasing power to generate scale and encourage the adoption of renewable energy and resource efficiency technologies.
- Provide incentives for the creation of sustainable communities and cities that enhance residents' quality of life while optimizing resource usage.

Industry

- Collaborate with startups through open innovation to access and harness innovative clean technologies and business models for sustainable infrastructure.
- Develop innovative financial instruments to fund sustainable infrastructure projects.
- Review current infrastructures and integrate cost-competitive sustainable practices and clean technologies into ongoing operations.
- Utilize information technology to enhance the operational efficiency of infrastructure.
- Use sustainability challenges as opportunities to identify innovative technologies and solutions for infrastructure projects.

University

- Create test beds and demonstration facilities to expedite the adoption of innovative technologies in infrastructure.
- Engage in the design of sustainable infrastructure projects within the communities they serve.
- Partner with government and industry to provide professional training in sustainable infrastructure project modeling and development.
- Work with governments to develop templates, bodies of knowledge, best practices, and datasets for sustainable infrastructure projects.

Global Competitiveness Principles

1, 2, 4, 6, 7, 8, 9

Sustainable Development Goals

4. Adopt sustainable consumption and production models.

Changing consumption and production models includes deploying solutions and disseminating innovative technologies and business models throughout supply chains to enable reduction, reuse, recycling, and upcycling of materials. Producer responsibilities need to be expanded as well as standards and regulations aimed at reducing obstacles to the adoption of sustainable products.

Civil society

- Actively pursue partnerships and collaborations among non-profit organizations dedicated to promoting sustainable consumption.
- Advance the establishment and implementation of standards to expedite the adoption of sustainable technologies such as electric vehicles (EVs) and others.
- Map areas where global industry-wide standards can have the greatest impact in accelerating the adoption of sustainable technologies and products.
- Partner with digital platforms that facilitate recycling and support the circular economy.
- Promote the development of self-sustaining community recycling centers and drop-off units, minimizing waste and fostering local business and work opportunities.

Government

- Collaborate with industry and society to establish standardized eco-labeling systems that facilitate the easy identification of sustainable products by consumers.
- Deploy Extended Producer Responsibility frameworks.
- Expand funding and investments to bolster the development of circular economy solutions and material recycling technologies.
- Fund and incentivize community recycling programs.
- Review consumer protection legislation to enhance clarity and reduce ambiguity regarding the sustainability advantages of products, mitigating the need for legal disputes.

Industry

- Adopt advanced product and supply chain design, engineering, and simulation technologies to project future sustainability impact.
- Allocate resources to develop cost-competitive technologies for upcycling carbon and other underutilized resources.
- Apply advanced design tools and manufacturing technologies, such as additive manufacturing, to create new products that minimize the use of materials while ensuring necessary performance.
- Develop the capability to design, produce, and introduce products that employ materials through reuse, recycling, and upcycling.
- Establish product life-cycle assessment as a standard business practice across all business units and divisions.
- Evaluate and disclose sustainability impact.
- Implement eco-design principles to ensure products are created with their end-of-life destinations in mind, reducing environmental impacts.
- Integrate automation and lean management to enhance manufacturing processes, reduce waste, and improve resource efficiency.
- Use digital technologies to simplify reverse logistics and reduce the costs of material recycling and reuse.
- Leverage the scarcity of materials, the increasing awareness of sustainability among consumers and producers, and digital technologies to develop profitable recycling businesses.

University

- Collaborate with industry to develop advanced manufacturing capabilities and prepare the workforce.
- Establish multidisciplinary advanced sustainable supply chain centers, educational programs, and courses.
- Establish zero-waste innovation hubs in partnership with industry, with a focus on reducing materials usage, recycling and upcycling, circular economy practices and cutting-edge carbon reuse technologies.

Global Competitiveness Principles

2, 4, 7, 8

Sustainable Development Goals

5. Promote well-being to empower communities to achieve their full potential.

Well-being hinges on access to an array of essentials, including services, safety, security, and inclusion. It is important to recognize that when individuals and communities are thriving, they become better equipped to contribute to their fullest potential, fostering more innovative, productive, and resilient economies and society.

Civil society

- Back cultural diversity and provide opportunities for artistic expression and recreational activities that enhance the overall quality of life.
- Create platforms for community digital connectivity in areas where commercial options are unavailable or impractical.
- Form partnerships with government and private sector to advocate for digital inclusion.
- Develop and offer scalable and widely accessible courses and training in soft skills to create opportunities for young individuals to work remotely for local or global companies.
- Promote grassroots initiatives aimed at addressing local community issues.
- Take part in local sustainability initiatives and volunteer for environmental organizations.

Government

- Assure that all levels of government implement effective, transparent, and accountable justice systems.
- Make digital literacy and skills development programs as core components of school and community activities, aiming to equip youth to access opportunities in the digital global economy.
- Create dedicated teams and long-term initiatives to engage youth through digital platforms and social media, promoting community involvement and providing opportunities for skill development.
- Invest in rural areas to make them appealing places to live, fostering diverse communities and attracting talent.
- Streamline zoning regulations to facilitate a rapid increase in housing numbers while also encouraging creative housing solutions.
- Use digital technologies and innovative business models to provide accessible and affordable healthcare services.

Industry

- Develop products and technologies that tackle issues such as healthcare, education, and access to information.
- Engage with and support local communities, contributing to their well-being through job creation, local investment, and philanthropy.
- Participate in corporate social responsibility (CSR) initiatives, backing charitable causes, education, healthcare, and community development.

University

- Encourage entrepreneurship and innovation by supporting social and technology startups and nurturing an entrepreneurial culture.
- Engage in collaborative problem-solving with the communities you serve, working together to enhance local realities and build stronger bonds with local communities.
- Extend the offering of programs in healthcare, public health, and medical training to produce skilled professionals.
- Foster international partnerships and collaborations to address global issues, exchange knowledge and share expertise.
- Motivate students and faculty to participate in civic activities, volunteer work, and community projects aimed at addressing local issues and promoting active citizenship.
- Undertake research to address critical societal challenges.

Global Competitiveness Principles

2, 4, 6, 7

Sustainable Development Goals

6. Invest in skills development to enable people to access economic opportunities.

In a rapidly changing global landscape with accelerated technological advancements, it's crucial to continually improve workforce skills to support community and economic sustainability. This should go hand in hand with ensuring safe working conditions and fair treatment to maintain workforce engagement.

Civil society

- Create community-based programs for skill development.
- Implement community-based mentorship, career guidance, and financial literacy programs.
- Offer mentorship and access to capital for businesses led by entrepreneurs in all demographic groups aiming to include underprivileged groups.

Government

- Commit to making the necessary investments in K-12, and specially early, education to provide individuals with the fundamental skills needed to participate in the innovation economy, including STEM .
- Establish policies and initiatives that promote lifelong learning and upskilling.
- Fund and incentivize upskilling programs run by both community organizations and industries.
- Introduce tools and processes for monitoring skills needs and gaps in the labor market.
- Promote the adoptions of adaptive education technologies.
- Employ digital technology to empower citizens with tools for assessing, enhancing their skills, and identifying work opportunities.

Industry

- Allocate resources to upskilling and reskilling for both employees and communities.
- Conduct pay gap assessments and rectify disparities by implementing a combination of compensation adjustments, gender mentoring, acceleration and skills development initiatives.
- Ensure safe and healthy working conditions, opportunities for employee growth, and wages in line with the cost of living.
- Implement diversity and inclusiveness programs to tap into a broader talent pool.
- Partner with universities and governments to establish and operate joint future skills centers that combine vocational training, higher education, and translational research.
- Systematically survey and incorporate the "voice of employees" into management processes, considering aspects like well-being and engagement.

University

- Develop and broaden upskilling and lifelong learning portfolios to enhance employability, adaptability, and university sustainability.
- Establish collaborative platforms comprising industry, government, and civil society to evaluate emerging technologies that could disrupt employment and take proactive measures to adapt professional and academic education programs to realign the workforce accordingly.
- Offer alternative approaches and strategies to make higher education and continued education more affordable and accessible such as Income-Share Agreements and Income-Adjusted Tuition.

Global Competitiveness Principles

2, 3, 4

Sustainable Development Goals

7. Couple the expansion of R&D with translation and dissemination.

Research and development initiatives on sustainability are pivotal in addressing global challenges such as climate change, resource depletion, social inequality, and non-performing growth models. To generate impact on a scale, knowledge creation must be combined with translation and dissemination. Such efforts require the mobilization of innovative funding sources, public-private partnerships and frameworks to accelerate the dissemination of proven technologies and methods.

Civil society

- Organize and execute community-run sustainable innovation sprints, hackathons and similar events.
- Increase visibility for innovative, eco-conscious local businesses.
- Establish extension programs to disseminate proven sustainable technologies and methods.

Government

- Encourage the use of carbon offset funds for R&D projects and offer incentives for such utilization.
- Increase funding for research and development in clean energy, resource productivity, and circular economy technologies, as well as their market introduction.
- Implement fast-track mechanisms to expedite patent approval process for clean technologies.
- Prioritize clean technologies in national research, innovation, and development strategies.
- Provide funds and incentives for multidisciplinary sustainability research and development, addressing all sustainability dimensions.
- Use time-bound tax incentives, grants, and subsidies to research and develop clean technologies, accelerate adoption and fostering future cleantech industries.

Industry

- Collaborate with peers to understand industry reality, trends, and technologies; develop strategies; conceptualize, fund, and deploy sustainability projects to achieve industry-wide decarbonization.
- Conduct sustainable innovation challenges.
- Report progress and achievements in sustainability-focused research, development, and innovation efforts to all stakeholders to foster trust and garner support.
- Earmark carbon offset money for R&D and technology dissemination projects.
- Emphasize innovation efforts as a higher priority than sustainability disclosure.
- Encourage and reward employees for proposing and developing sustainable innovations.
- Forge collaborative networks with startups and universities to drive sustainable innovations.
- Invest in research and development for environmentally friendly products.
- Incorporate and empower Chief Sustainability Officers in R&D and innovation pipeline decision-making processes.

University

- Engage in transformational technology projects in collaboration with industry and government.
- Collaborate with industry on green technology projects.
- Make sustainability a priority in university strategy and socioeconomic impact initiatives.
- Provide scholarships for students pursuing studies in sustainability.
- Make laboratory infrastructures, equipment, expertise, and other resources easily accessible to entrepreneurs and industry, reducing the costs of validating, testing, and scaling up clean technologies.

Global Competitiveness Principles

1, 2, 4, 5, 7

Sustainable Development Goals

8. Focus on data and principles for sustainability governance and management.

In the pursuit of sustainability, organizations and governments should rely on data, technology, and principles to assess performance, manage sustainability initiatives across sectors, foresee negative impacts, and prepare for potential adverse consequences. Furthermore, regulatory frameworks need to be flexible, welcoming to innovation, founded on principles and outcomes rather than rigid prescriptions.

Civil society

- Advocate for transparency and accountability in sustainability reporting by all stakeholders.
- Partner with universities to engage scientists in local data analysis to assess a community's resilience in the face of sustainability challenges.
- Build alliances and work across sectors to integrate sustainability reporting standards and frameworks both nationally and globally.

Government

- Adopt dynamic frameworks for setting and assessing performance based on rolling sustainability targets instead of time-bounded ones.
- Collaborate with industry to normalize and simplify the use of applicable ESG reporting standards, thereby reducing reporting costs, enhancing credibility, and focusing efforts on measurable outcomes.
- Employ computer simulation and analytics to identify and prepare for future extreme natural events, building resilience.
- Encourage cities to establish waste generation targets and provide visibility of performance metrics to communities, empowering citizens to monitor waste production in relation to these targets.
- Engage on a global scale to establish and disseminate transparent and technically-informed standards for clean technologies.
- Establish dedicated task forces or agencies to monitor emerging threats to the environment, public health, communities, and the economy.
- Implement integrated command and control organizational solutions to deal with potential adverse conditions.
- Leverage digital technology to support sustainability disclosure, to lower reporting costs and to enable the creation of new markets.
- Prioritize principles-based regulation over prescriptive regulations.
- Recognize and reward companies that excel in sustainability performance.
- Streamline regulations, prevent regulatory overload, and standardize interpretation and application across regulatory bodies.
- Use digital technologies to integrate communication about community issues with all relevant stakeholders.
- Use scenario planning, stress tests, and simulation techniques to foresee socioeconomic impacts and develop action plans.

Industry

- Apply scenario planning, risk assessment, and stress tests to foresee, communicate, and mitigate potential environmental, social, and economic negative impacts.
- Collaborate with supply chain partners to ensure sustainability standards are met throughout the supply chain, fostering the exchange of best practices and continuous learning and improvement.
- Deploy organizational solutions and digital tools for ESG (Environmental, Social, and Governance) governance.
- Develop cybersecurity capabilities to ensure data integrity and reliability.
- Leverage digital technology to continually report sustainability progress and practices.
- Nurture the development of digital platforms for companies to report sustainability data.

- Prevent organizational capture through disclosure requirements and routines.
- Promote and adopt standards and certifications.

University

- Collaborate with industry and government to provide expertise and guidance on sustainability issues.
- Conduct research to develop innovative digital solutions for sustainability assessment.
- Partner with industry and government to implement communities of practice at various levels.
- Work with served communities to model extreme scenarios and conduct stress tests to assess resilience and readiness to face sustainability risks.

Global Competitiveness Principles

2, 4, 7, 9, 10

Sustainable Development Goals

9. Use novel financial architectures to mobilize resources for sustainable investment.

Mobilizing finance for sustainable investments requires a multifaceted approach, beginning with comprehensive planning. Public sector investments should serve as catalysts to attract private capital to sustainable projects, rather than replacing them, all while exerting influence and promoting sustainability. By incorporating sustainability considerations into governmental frameworks, standardizing standards across sectors, and aligning initiatives, it is possible to optimize resource allocation and attract private funding.

Civil society

- Actively participate in shareholder activism to advocate for sustainable finance and strategies.
- Develop, harmonize, and disseminate financial standards for sustainable finance and reporting.
- Strive to integrate existing standards for sustainable finance and reporting to enhance market efficiency and reduce transaction costs.
- Systematize best practices and evidence related to sustainable investments to substantiate the case for sustainable finance policies.

Government

- Adopt sustainability criteria for the disbursement of development banks.
- Create institutional frameworks that facilitate the issuance of government debt and securities designed to attract private funding.
- Employ development banks to reduce risks in innovative sustainability solutions investments.
- Encourage the issuance of green bonds to finance sustainability projects.
- Harmonize the policies and procedures of government agencies and financial institutions through a national program for green investments.
- Prioritize public-private partnerships over solely relying on public investment.
- Partner with private entities to initiate and expand impactful sustainable projects.
- Utilize public funds to attract private sector investments rather than substituting them.

Industry

- Bring innovative solutions to market for carbon measurement, commercialization, accounting, and associated investments.
- Create joint ventures, business alliances, and platforms to initiate new projects and seize sustainability opportunities.
- Create market frameworks and solutions, such as marketplaces, clearing houses, certification, and surveillance tools, to facilitate the growth of carbon markets.
- Embrace the opportunities provided by green bonds and carbon markets, utilizing them as primary sources of capital.
- Promote sustainability by incorporating it into the design of investments in new ventures.
- Use offtake agreements for green products and clean technologies.

University

- Expand the range of sustainable finance programs and courses.
- Nurture sustainable finance entrepreneurship.
- Partner with governments, industry, and multilateral organizations to systematize best practices, templates, databases, and reference models for sustainable finance.

Global Competitiveness Principles

1, 2, 4, 7

Sustainable Development Goals

10. Leverage education to forge a future sustainability-oriented mindset.

Education for sustainability aims to instill the knowledge, skills, values, and attitudes necessary for individuals and communities to understand and actively contribute to a more sustainable future. The goal is to make sustainability a fundamental way of thinking in which individuals are educated about and trained in throughout their educational journeys.

Civil society

- Create platforms for community involvement in sustainability projects to reinforce learning.
- Establish global sustainability games and clubs inspired by examples like the Model UN.

Government

- Expand investments in the development of sustainability educational materials and teacher training.
- Include sustainability and environmental stewardship in early education.
- Integrate into undergraduate curricula courses that focus on designing and engineering sustainability models and solutions ("sustainability engineering") across sectors and levels, from the business entity to the supply chain, the economy, and society.

Industry

- Collaborate with universities to create opportunities for students and faculty to gain practical sustainability experience in industrial settings.
- Organize open-door events to engage with local communities and familiarize them with industry realities.

University

- Collaborate with fellow universities to create a collective body of knowledge that can be transformed into curricula and programs for global dissemination of sustainability thinking and practice.
- Create multidisciplinary teams involving students, faculty, and leaders from industry and civil society to participate in global sustainability challenges.
- Develop specialized lifelong training programs for elementary and secondary education teachers to equip them to teach sustainability.
- Establish ethics as a fundamental discipline in curricula to educate future leaders with a strong ethical foundation.
- Incorporate sustainability as a core competency in all programs.
- Inspire students to explore global sustainability challenges and engage in discussions about international cooperation to address these issues.
- Introduce a course titled "Sustainability for the Future".
- Scale up hands-on, project-based learning to actively engage students in sustainability and environmental conservation initiatives.

Global Competitiveness Principles

2, 3, 4, 10

Sustainable Development Goals

Putting Ideas into Action

To achieve sustainability, innovation is a must. We call upon stakeholders at all levels to play an active role in this endeavor. Sustainability depends on both incremental and radical innovation, without neglecting the tremendous opportunities presented by the dissemination of proven technologies, business models, methods, and techniques. There exists a significant need to address a gap in capabilities and applied knowledge that persists in the world.

Policymakers should purposefully act to shape the environment for the advancement of social, environmental, and economic sustainability. They must work to reduce systemic costs that hinder industries and communities from transitioning to sustainable models and practices, address market failures, and collaborate as partners with changemakers in all sectors.

Industry needs to innovate at scale, building the business cases that will enable a sustainable future and scaling up the deployment of sustainable business models, technologies, and practices. A new sustainable economy is emerging with a potentially significant upside for early adopters, but there's also a need to build the business cases that can accelerate the transition in established industry verticals.

Civil society needs to assume a leadership role and help translate policies and ideas into action, coalescing stakeholders across sectors, serving as a neutral platform for them to agree on and disseminate standards, best practices, and critical information. It can and should also go beyond, prototyping and helping to accelerate new models and ventures into the market and community realities across geographies.

Universities need to strengthen their entrepreneurial profiles by mingling in multiple ways with society and industry in addressing sustainability challenges and seizing opportunities. Their traditional toolkits need to be updated to perform such a transformational task. This comes in addition to the fundamental task of educating and training the workforce of the future, and instilling in new generations of professionals and leaders a sustainability mindset.

Above all, achieving a sustainable future requires cross-sector initiatives. We must break down silos and barriers, eliminate institutional obstacles that hinder sectors from working together, and explore new partnership models. We need everyone on board. Now. The competitiveness of economies is at stake, but also the feasibility of societies and humanity.

The wealth of knowledge, ideas, and critical thinking from the GFCC's network of members and fellows were put together to build the set of recommendations in this Call-to-Action. We thank all leaders who contributed to this effort and, particularly, to those who reviewed and provided direct input to this document.

For more information about the GFCC's work and how our organization can support you in translating this Call-to-Action into initiatives on the ground, please contact GFCC Executive Director, Roberto Alvarez (ralvarez@thegfcc.org).

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Global Competitiveness Principles

Developed by the GFCC and its global community of members and fellows, the Global Competitiveness Principles guide nations and organizations in building effective competitiveness strategies suited to today's global environment. Originally introduced in 2010, the Principles cover decision areas such as innovation, intellectual property, skills and workforce, trade, natural resources utilization, infrastructure, and regulation.

About the GFCC

The GFCC is a global multi-stakeholder membership organization founded in 2010 with a footprint spanning more than 30 nations. The GFCC is committed to disseminating best practices to accelerate productivity, growth, and prosperity for countries, regions, and cities. We do that through high-level networking and events, in-depth conversations, analytical tools, advice, and education.

GFCC members include private sector councils on competitiveness and industry organizations, government agencies, global corporations, and leading research universities. All members pay membership dues yearly to secure their placement in the network. Currently, the GFCC hosts 44 members from 21 countries.

Besides its members, the GFCC network also includes experts invited to participate as fellows. Members and fellows have different roles. Fellows contribute by sharing their specialized knowledge and expertise with the community and participating in project development and strategies. Currently, the GFCC hosts 60 fellows from 24 countries.

Learn more about the GFCC at: www.thegfcc.org

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