

A Perspective on Scientific Resilience, Open Science, and International Cooperation in Conflict-Affected and Resource-Limited Regions

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ABSTRACT

Scientific progress increasingly depends on openness, collaboration, and the free exchange of knowledge across disciplines and national boundaries. However, researchers working in conflict-affected and resource-limited regions continue to face substantial barriers, including inadequate infrastructure, limited funding, restricted access to scientific resources, and geopolitical constraints. This perspective examines how scientific resilience, international collaboration, science diplomacy, and open science can strengthen research capacity and innovation under challenging conditions. It highlights examples of scientific achievements from conflict-affected and developing regions, demonstrating that adversity can stimulate innovation, adaptability, and locally relevant solutions with global significance. The article further emphasizes the importance of interdisciplinary partnerships, equitable international collaborations, responsible research practices, and FAIR data principles in improving research quality, reproducibility, and societal impact. In addition, it discusses the critical role of regional scientific journals in promoting local research, strengthening scientific capacity, and connecting underrepresented researchers with the global scientific community. Ultimately, the paper argues that investing in inclusive scientific ecosystems and sustained international cooperation is essential for addressing shared global challenges and advancing sustainable development, peace, and scientific excellence worldwide.

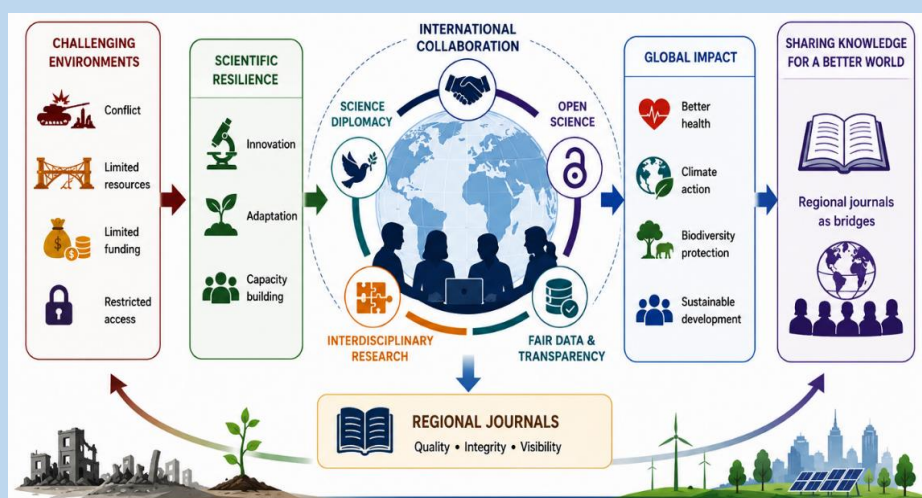
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1. Introduction: Science Has No Borders

We are fundamentally linked to one another and to our surroundings. These connections are evident in our daily observations and experiences. Our interconnectedness provides us with numerous benefits each day. Nevertheless, the effects and consequences of human actions on these connections are clearly apparent to those of us involved in environmental science, engineering, health research, and the endeavors associated with safeguarding public health and the environment. Historically, scientific advancement has thrived when ideas transcended borders more easily than political divisions. From worldwide initiatives aimed at tackling infectious diseases to collaborative international efforts focused on climate change and the loss of biodiversity, science shows that addressing humanity's most significant challenges requires shared knowledge rather than solitary endeavors (Rezaei 2021). Significantly, there is an increasing global awareness of the human-induced pressures on the biosphere, as demonstrated by international initiatives like the Intergovernmental Panel on Climate Change, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, and ongoing efforts to establish an Intergovernmental Science-Policy Panel on Chemicals and Waste. In addition to the fundamental moral and ethical responsibilities we hold toward people and the planet, our varied and extensive connections should foster the creation and preservation of links in environmental science and technology, ensuring continued support for these initiatives. Establishing connections across different fields within environmental science and technology remains crucial, especially as we adopt systems-oriented methods to tackle significant environmental challenges (Sarmiento et al., 2016). Fedoroff (2009) views science diplomacy as a strategic approach to manage intricate global issues through international scientific collaboration, asserting that science serves as a universal language that can bypass political, cultural, and ideological divides. To effectively address challenges like food insecurity, climate change, infectious diseases, and energy shortages, there is a need for interdisciplinary research and enduring partnerships

between developed and developing countries. A key point of this paper advocates for a transition from conventional aid-based models to fair scientific collaborations that enhance local research capabilities, higher education, and innovation ecosystems. This viewpoint is especially pertinent for regions affected by conflict and resource limitations, where scientific infrastructure and human resources are often compromised by ongoing instability. Nevertheless, despite the hopeful outlook on science diplomacy, there is insufficient focus on the structural obstacles that commonly hinder collaboration in fragile contexts. These include political unrest, restricted funding, sanctions, damaged infrastructure, and limited access to advanced technologies, all of which present significant challenges. These circumstances indicate that effective science diplomacy necessitates not only international goodwill but also ongoing investment in institutional resilience, researcher mobility, digital connectivity, and locally driven research priorities. Fon et al. (2023) contend that international scientific collaboration has become a crucial method for addressing complex developmental issues, especially in areas facing resource limitations, institutional obstacles, and shared socio-environmental challenges. Problems like infectious diseases, climate change, loss of biodiversity, and technological inequality cannot be effectively resolved by individual national actions alone, underscoring the need for integrated research collaborations and cross-border knowledge sharing. However, effective collaboration is frequently hindered by issues such as regulatory inconsistencies, disparities in funding, institutional limitations, cultural differences, and geopolitical conflicts. These obstacles can restrict the fair distribution of resources and research opportunities, especially for institutions situated in difficult environments. Therefore, we stress the necessity of aligned policies, inclusive governance frameworks, sustainable funding strategies, and capacity-building efforts to foster enduring scientific collaborations. Nonetheless, our appeal continues to be a fundamental contribution, highlighting that scientific collaboration serves not just as a means for generating

knowledge, but also as a catalyst for peacebuilding, enhancing capacities, and fostering sustainable socioeconomic advancement. We emphasize that science acts as a universal language. No matter the geographical, political, or economic circumstances, scientific inquiry is fueled by curiosity, evidence, and teamwork. Historically, significant scientific breakthroughs have relied on the global exchange of knowledge, data, and expertise.

2. Science in Challenging Environments

Throughout history, scientific research has thrived in contexts marked by political stability, ongoing investment, and robust research infrastructure. Nonetheless, a growing collection of evidence reveals that significant scientific advancements can also originate from areas affected by armed conflict, economic turmoil, natural disasters, and persistent resource shortages. Scholars operating in these challenging environments often face disrupted education systems, impaired laboratory facilities, shortages of necessary equipment and supplies, limited access to scientific publications, restricted funding options, unreliable electricity and internet connectivity, and fewer chances for international collaboration (Al-Worafi, 2024). Despite these obstacles, we persist in producing important scientific insights that tackle both local and global issues. Research carried out in demanding circumstances is often marked by impressive resilience, flexibility, and creativity. Researchers frequently create cost-efficient techniques, make the most of restricted laboratory resources, forge local partnerships, and utilize open-source technologies to navigate infrastructural challenges. These adaptive strategies have resulted in significant progress in areas like public health monitoring, biodiversity preservation, agricultural sustainability, environmental stewardship, and community-focused healthcare. Instead of simply being a reaction to challenges, these innovations often offer scalable and economical solutions that can assist other low- and middle-income nations, as well as resource-sensitive research settings globally (AAAS & The Royal Society, 2025). Regions affected by conflict serve as powerful

examples of scientific resilience. In Northeast Syria (Rojava), years of warfare and political turmoil have severely disrupted higher education, healthcare systems, and research infrastructure. Despite these challenges, universities, independent research centers, and healthcare professionals have continued their work in areas such as public health, clinical medicine, microbiology, ethnobotany, agriculture, environmental science, and biotechnology. These research initiatives not only meet urgent regional requirements but also provide valuable insights from populations and ecosystems that are often overlooked in global scientific publications. A similar trend has been noted in Ukraine, where researchers have sustained their scientific output in spite of extensive infrastructure damage and the displacement of academic personnel. The swift adaptation of Ukrainian institutions through digital collaboration, international partnerships, and remote research efforts demonstrates that scientific communities can maintain research continuity even amidst prolonged conflict. Numerous nations in Sub-Saharan Africa showcase the ability of scientific communities to generate significant research even in the face of ongoing financial and infrastructural challenges. Researchers from Africa have made notable contributions that are recognized worldwide in areas such as infectious disease monitoring, genomics, vaccine creation, malaria management, antimicrobial resistance, biodiversity preservation, climate adaptation, and advancements in agriculture. The development of regional research collaborations, genomic sequencing facilities, and public health labs during outbreaks of Ebola, COVID-19, and other emerging infectious diseases underscores the continent's growing scientific leadership. These accomplishments illustrate that continuous investment in local scientific capabilities can yield considerable global advantages. Similarly, researchers across Latin America have made significant contributions to scientific knowledge despite facing ongoing economic downturns, political chaos, and inconsistent funding for research. Institutions in countries like Argentina, Brazil, Colombia, Peru, and Mexico have established research

programs in environmental sciences, biodiversity, tropical medicine, renewable energy, biotechnology, and public health that are competitive on an international scale. Strong academic collaborations and regional networks have allowed these researchers to sustain their scientific output while tackling pressing global issues such as biodiversity in the Amazon, and sustainable farming practices. In addition to conflicts and economic struggles, natural disasters and climate-related challenges also represent significant hurdles for scientific inquiry. Scientists based in disaster-prone areas provide crucial data for risk assessment, disaster preparedness, and climate adaptation strategies that are increasingly important on a global scale. A key feature of fruitful research in difficult settings is collaboration. Global scientific partnerships grant access to state-of-the-art laboratories, funding sources, mentorship opportunities, data-sharing platforms, and specialized skills that may be lacking on a local level. Similarly significant are South–South collaborations, regional research networks, and partnerships within communities that foster tailored solutions and enhance local scientific capabilities. Furthermore, digital technologies, open-access publishing, cloud-based data storage, virtual conferences, and online training have diminished geographical barriers, enabling researchers in resource-constrained environments to engage more actively in the worldwide scientific community (Morgan et al., 2023). Even with these promising advancements, considerable structural inequalities persist, hindering scientific progress in difficult conditions. Researchers often encounter obstacles such as insufficient research funding, high publication fees, lack of access to subscription-based journals, poor laboratory facilities, challenges in acquiring research materials and equipment, limited chances for advanced training, and underrepresentation in global collaborations and decision-making institutions. To address these disparities, it is essential to make ongoing investments in research infrastructure, implement equitable funding approaches, promote open science efforts, develop capacity-building programs, and establish policies that acknowledge the

importance of research led by local entities (Quak 2025). In the end, science pursued in difficult circumstances shouldn't simply be seen as a tale of struggle. Rather, it showcases remarkable scientific resilience, innovation, and dedication to society. Researchers operating in areas impacted by conflict, disasters, or limited resources persist in producing knowledge that enhances health, safeguards biodiversity, promotes sustainable development, and guides evidence-based policy. It is vital to bolster these scientific communities through fair international collaboration and sustained institutional support, as this is crucial not just for local growth but also for tackling various intricate global challenges that cross national boundaries.

3. Innovation Through Collaboration

Scientific innovation is becoming more reliant on collaboration that crosses boundaries of disciplines, institutions, and countries. The intricate nature of modern scientific issues like sustainable energy transitions cannot be sufficiently undertake through isolated research or single-discipline efforts. Instead, these global problems necessitate the merging of various scientific viewpoints, cutting-edge technologies, and shared research facilities. As a result, interdisciplinary and international collaboration has become a fundamental aspect of contemporary scientific advancement and innovation (Luo et al., 2025). Interdisciplinary research brings together expertise from different scientific domains to create new methodologies, improve problem-solving abilities, and speed up knowledge generation. For instance, progress in genomics increasingly depends on partnerships among molecular biologists, bioinformaticians, statisticians, clinicians, and computer scientists, working together to analyze extensive genomic datasets and apply findings to precision medicine. Likewise, the swift evolution of artificial intelligence (AI) has revolutionized scientific research by facilitating automated data analysis, predictive modeling, and decision support across various fields, from biomedical sciences to environmental monitoring. The combination of AI with biotechnology and healthcare has greatly accelerated drug

discovery, disease diagnosis, and the development of personalized treatment approaches (Shao et al., 2026). The realm of biotechnology clearly illustrates the importance of collaboration across various disciplines. Breakthroughs such as CRISPR-based genome editing, synthetic biology, vaccine creation, and regenerative medicine necessitate the combined efforts of experts from genetics, molecular biology, engineering, computational science, chemistry, and clinical medicine. The rapid development of COVID-19 vaccines showcased how cooperative international research networks can significantly speed up the process from fundamental scientific findings to their clinical implementation. In a similar way, managing climate change requires teamwork among climatologists, ecologists, engineers, economists, geographers, and social scientists. Effective climate modeling, strategies for mitigation, adaptation planning, and the creation of environmental policies all rely on the integration of data collected globally and analyzed via multidisciplinary methods. Research in renewable energy also thrives on collaboration among materials scientists, physicists, chemists, electrical engineers, economists, and environmental scientists in order to enhance solar panels, wind technologies, energy storage solutions, and sustainable hydrogen generation. Global collaboration has become essential in public health, where the monitoring of infectious diseases, genomic tracking of pathogens, epidemiological modeling, and coordinated responses to pandemics necessitate quick international data sharing and collaborative research frameworks. The COVID-19 pandemic underscored the significance of global scientific partnerships through open-access databases, multinational clinical trials, and joint vaccine development efforts that sped up scientific breakthroughs and guided evidence-based public health strategies. In the realm of biodiversity conservation, interdisciplinary teamwork combines ecology, genetics, remote sensing, conservation biology, environmental policy, and local ecological insights to create effective approaches for safeguarding ecosystems and endangered species. International collaborations promote standardized biodiversity monitoring, enhance

species distribution modeling, and reinforce conservation planning across political borders, acknowledging that ecological systems seldom adhere to national limits. Working together on research projects grants access to specialized tools, advanced computing resources, extensive databases, and unique research locations that might not be available to individual institutions or countries. This shared infrastructure minimizes redundancy, boosts research efficiency, and allows scientists from resource-constrained areas to engage in state-of-the-art scientific investigations. Furthermore, international cooperation promotes the sharing of knowledge, technologies, and best practices, thereby enhancing scientific capabilities on a global scale. Another important advantage of international collaboration is the integration of a wide range of expertise and viewpoints. Research teams made up of individuals from various cultural, educational, and disciplinary backgrounds are likely to develop more innovative solutions, as they handle problems using varied methodologies and theoretical perspectives. This kind of diversity fosters creativity, enriches the critical assessment of research outcomes, and mitigates disciplinary biases. Collaborative research enhances both reproducibility and scientific rigor. When findings are independently validated across various laboratories and populations, it boosts confidence in research results and supports the creation of standardized methods. Utilizing shared protocols, adopting transparent data-sharing practices, and conducting multicenter studies are essential for tackling the ongoing reproducibility issues faced by many scientific fields (Nature Editorial, 2025). Bibliometric analyses consistently show that publications co-authored internationally receive more citations, are featured in higher-impact journals, and gain wider scientific exposure compared to those from a single institution. These collaborations broaden research networks, increase funding opportunities, and promote the global spread of scientific knowledge. Furthermore, multinational research consortia often have the capabilities to pursue large-scale, ambitious projects that would be beyond the reach of individual laboratories. Collaboration in science has shifted from being

a commendable practice to a crucial element of research excellence. As scientific inquiries grow more intricate and interconnected on a global scale, interdisciplinary and international collaborations will be vital for speeding up innovation, improving research quality, bolstering scientific resilience, and devising solutions to the urgent challenges confronting humanity.

4. Science Diplomacy

Science diplomacy has become a crucial tool for enhancing global collaboration, enabling the exchange of knowledge, and tackling intricate international issues that cannot be resolved by single nations alone. In a practical context, science diplomacy goes beyond official political discussions; it involves utilizing scientific collaboration to foster relationships, encourage mutual understanding, and back decisions based on evidence. Scientific partnerships frequently endure even amid political strains, illustrating that common scientific objectives can create reliable avenues for dialogue and collaboration (Rüland et al., 2025). One of the key contributions of science diplomacy is its capacity to foster trust among researchers, institutions, and countries. Scientific collaboration is built on the principles of transparency, reproducibility, peer review, and the open sharing of knowledge. These common values cultivate an environment where researchers from various cultural, social, and political backgrounds can collaborate on shared goals. Long-term partnerships, joint publications, and global research networks enhance professional connections and promote mutual trust that lasts beyond single projects (Fährnich, 2017). Additionally, science diplomacy is vital in promoting evidence-based policymaking. International scientific collaboration empowers governments and organizations to obtain trustworthy data, unify research methods, and formulate coordinated strategies informed by the best available evidence. In this manner, science acts as a conduit between research and policy, ensuring that decisions are based on objective information rather than immediate interests. Another key feature of science diplomacy is its ability to remain steadfast during times of

political or economic instability. While diplomatic ties between nations may vary, scientific collaborations often persist through universities, research organizations, professional associations, and international bodies. Scientists pursue shared research goals, engage through established academic networks, and sustain collaborative projects that enhance global understanding. This continuity is crucial for tackling cross-border issues, such as pandemic readiness, environmental protection, disaster risk mitigation, and sustainable resource management, where ongoing scientific cooperation is vital. The effectiveness of science diplomacy is also bolstered by the common ethical standards that guide scientific research around the globe. Regardless of their country of origin, researchers typically follow internationally accepted principles of research integrity, which include honesty, transparency, accountability, consideration for human participants and biodiversity, responsible data management, and ethical standards in publication (Lips et al., 2025). These standard practices promote collaboration by setting shared expectations for research quality, reproducibility, and ethical conduct. Global ethical guidelines and peer-review processes further enhance trust in collaborative research and boost the reliability of scientific findings. Contemporary scientific organizations are increasingly acknowledging science diplomacy as a vital element of global research management. International efforts are promoting collaborative research infrastructures, researcher mobility, open science initiatives, and fair access to scientific information. These initiatives foster skill development, narrow the gap in research resources, and empower scientists from both advanced and developing countries to play a significant role in addressing global issues. In areas affected by conflict or lacking resources, science diplomacy can also help sustain academic progress by linking local researchers with global expertise, training opportunities, and research facilities (Kaltoven 2018). In the end, science diplomacy illustrates that science serves not just as a source of knowledge but also as a significant tool for promoting international discussion, trust, and collaboration. By

supporting evidence-driven policymaking, maintaining partnerships across political divides, and upholding common ethical standards, science diplomacy bolsters the international scientific community and improves our collective ability to overcome the complex challenges of the twenty-first century. As scientific issues grow more global in scope, effective science diplomacy will continue to be essential for progressing research, innovation, and sustainable development.

5. Open Science and Research Integrity

Open science has become a crucial framework for enhancing the quality, transparency, accessibility, and societal impact of scientific research. By encouraging open access to scientific knowledge, research data, methodologies, and software, open science allows researchers across the globe to validate findings, replicate experiments, and build on previous work more effectively. This approach is especially beneficial in areas with limited resources or those affected by conflict, where access to scientific infrastructure and subscription-based journals can be constrained. Consequently, open science not only aids in scientific progress but also promotes greater equity in participation in global research (UNESCO, 2021). Maintaining transparency during the research process is vital for upholding scientific integrity. Researchers must provide detailed descriptions of study designs, sampling techniques, experimental protocols, statistical methods, and computational approaches to enable independent verification of their results (Limongi et al., 2026). Transparent reporting helps to reduce selective reporting, mitigate methodological bias, and bolster trust in published findings. The growing adoption of reporting guidelines like CONSORT, PRISMA, STROBE, and ARRIVE highlights the increasing recognition that methodological transparency is essential to research quality and informed decision-making based on evidence (Khan et al., 2025). The principle of reproducibility is closely tied to transparency and has emerged as a fundamental aspect of contemporary scientific integrity. Reproducibility enables independent researchers

to achieve consistent results using identical methods and data, thus validating scientific assertions and uncovering possible errors or biases. Concerns about the widespread "reproducibility crisis" in various fields—including psychology, biomedical sciences, and preclinical research—have underscored the necessity for better experimental design, sufficient statistical power, thorough data reporting, and the open sharing of research materials. By reinforcing reproducibility, we ultimately foster public confidence in science and promote dependable scientific advancements. The FAIR data principles—Findable, Accessible, Interoperable, and Reusable—offer globally accepted guidelines for effective management of research data. Datasets that comply with FAIR standards are given persistent identifiers, include standardized metadata, are kept in readily accessible repositories, and are formatted using interoperable standards that enable reuse by both people and automated systems. Following FAIR principles enhances research productivity, encourages collaboration across disciplines, and maximizes the enduring value of scientific data. As large-scale, data-centric research becomes ever more prevalent, adopting FAIR practices is crucial for ensuring that scientific datasets remain discoverable and reusable across different institutions and countries. The swift incorporation of artificial intelligence (AI) into scientific research has opened up unique avenues for data analysis, literature synthesis, drug discovery, genomics, climate modeling, and personalized medicine. Nonetheless, responsible AI usage demands transparency, accountability, fairness, and human oversight. Researchers must carefully assess the outputs generated by AI, disclose their use of AI tools when applicable, safeguard confidential data, and make sure that algorithms do not introduce hidden biases or undermine scientific objectivity. International bodies are increasingly advocating that AI should support, not replace, essential scientific reasoning and ethical decision-making (UNESCO, 2021). Ethical publishing serves as a crucial foundation of research integrity. Scientific articles must accurately present methods and findings, free from fabrication, falsification, plagiarism,

inappropriate authorship, or duplicate publication. Researchers are also required to reveal any conflicts of interest, secure the necessary ethical approvals for studies involving human or animal subjects, and comply with established publication ethics as set forth by groups like the Committee on Publication Ethics (COPE). Upholding ethical publishing practices is vital for maintaining the trustworthiness of the scientific record and sustaining public confidence in academic research. Thorough peer review is a key mechanism for ensuring the quality and reliability of scientific publications. Independent expert assessments help uncover methodological flaws, statistical inaccuracies, unsupported claims, and ethical issues before research is published. While peer review has its limitations, enhancements such as open peer review, reviewer training, clear editorial policies, and post-publication evaluations have improved its overall effectiveness. It is essential to recognize constructive peer review not just as a process of gatekeeping, but as a vital element in the enhancement of scientific quality. In the end, maintaining scientific integrity is much more important than simply focusing on the number of publications. The increasing reliance on publication metrics, citation numbers, and journal impact factors can sometimes lead to practices that favor productivity over the quality of research. These pressures can result in questionable research methods, disjointed publications, and a decrease in reproducibility. On the other hand, research carried out with honesty, sound methodology, transparency, and ethical responsibility holds significant scientific value, regardless of the volume of publications. Institutions, funding bodies, and journals are progressively acknowledging that research excellence should be assessed not only by how much is published but also by the reliability, reproducibility, transparency, and societal impact of scientific work. Upholding these standards is crucial for maintaining public trust, promoting international collaboration, and ensuring that science continues to effectively benefit humanity.

6. The Role of Regional Journals

Regional scientific journals are crucial in bolstering research ecosystems, especially in developing areas and regions affected by conflict, where researchers often encounter challenges such as limited funding, inadequate infrastructure, and restricted opportunities for international publication. These journals do more than just serve as venues for publication; they offer an important platform for emerging scientists to share original research, hone their academic writing abilities, and achieve recognition within the wider scientific community. By providing accessible channels for scholarly exchange, regional journals foster the development of the next generation of researchers and aid in establishing long-term scientific capabilities. Additionally, regional journals act as significant links between local and international research communities. They promote the dissemination of scientific knowledge by publishing work focused on issues specific to their regions, ensuring that these findings reach a global audience. This exchange of information encourages collaboration among researchers from various disciplines and countries, facilitates the sharing of methodologies and data, and opens doors for collaborative research efforts. Such partnerships are especially important for considering intricate global challenges that require coordinated international responses. Another crucial role played by regional journals is fostering interdisciplinary research. Many of the scientific issues we face today transcend individual disciplines, necessitating knowledge from various fields. By inviting submissions from a wide range of scientific areas, regional journals promote collaboration among experts in biology, medicine, engineering, environmental science, information technology, and the physical sciences. This interdisciplinary strategy sparks innovation and aids in creating comprehensive solutions to societal and environmental challenges. Additionally, regional journals help enhance the integrity and credibility of scientific research by advocating for ethical publishing practices. Through peer review, compliance with international publication standards, transparency in reporting research, and strict policies against plagiarism and scientific misconduct, these journals

work to guarantee the quality and dependability of the findings published. Maintaining high ethical standards builds public trust in science and supports the reproducibility and long-term significance of scientific research. Furthermore, regional journals serve as important repositories of scientific knowledge that is pertinent to local contexts. They safeguard significant research that focuses on issues such as regional biodiversity, indigenous expertise, public health, agriculture, natural resources, environmental conservation, and technological advancements—subjects that may not receive adequate focus in more expansive international publications. By documenting scientific progress within specific geographical and cultural frameworks, regional journals produce evidence that supports policy-making, directs sustainable development efforts, and meets local community needs, all while enriching the global pool of scientific knowledge. The *Rojava Journal of Science and Technology* was established with these purposes in mind. The journal is dedicated to offering a high-quality, peer-reviewed, and globally accessible platform for sharing original scientific research that aids both regional advancements and worldwide scientific development. It aspires to enhance scientific capabilities, encourage international collaboration, and support research excellence across various disciplines. The journal is open to original research articles, reviews, short communications, and interdisciplinary studies across a wide array of scientific domains, such as biotechnology, medicine, environmental science, engineering, agriculture, computer science, mathematics, physics, chemistry, and other related fields. By fostering collaboration among researchers from various backgrounds and institutions, the journal aims to promote scientific advancement, encourage innovation, and tackle the urgent scientific and technological issues that confront both the region and the global community.

7. Looking Forward

Scientific discovery has historically advanced through openness, collaboration, and the unrestricted exchange of

ideas across different fields, institutions, and countries. Over the ages, significant breakthroughs in areas such as medicine, agriculture, engineering, environmental science, and technology have occurred when researchers unified their knowledge, resources, and viewpoints to tackle common challenges. In our increasingly interconnected world, scientific advancement relies not only on individual brilliance but also on the collective ability of the global research community to collaborate towards shared objectives. The issues facing humanity—including climate change, loss of biodiversity, emerging infectious diseases, food and water insecurity, antimicrobial resistance, sustainable energy, and rapid technological change—cross political borders and demand coordinated international efforts. No single entity or country has all the knowledge, infrastructure, or resources necessary to independently address these intricate challenges. Therefore, enhancing international scientific collaborations, fostering interdisciplinary research, and ensuring fair access to scientific information have become essential for achieving sustainable development and strengthening global resilience. It is equally vital to establish an inclusive global scientific environment where researchers from low- and middle-income countries, conflict-affected areas, and resource-constrained institutions can actively engage in the creation of new knowledge. Investing in research capabilities, enhancing access to funding and modern scientific tools, fostering researcher mobility, and promoting open and responsible science initiatives can help bridge the gaps in scientific opportunities while enriching the diversity of viewpoints that fuel innovation. Scientific excellence thrives when talent is acknowledged irrespective of geographical location or political context. Digital technologies, open-access publishing, international data-sharing platforms, and collaborative research networks are transforming the conduct of science, allowing for quicker dissemination of findings and fostering more transparent, reproducible, and inclusive research practices. These advancements offer unparalleled opportunities to boost innovation and build greater trust among scientists,

policymakers, and society. However, to fully realize these advantages, continuous investment in research infrastructure, ethical governance, data integrity, and international collaboration is essential. As we look ahead, the advancement of science will rely not only on technological innovations but also on our united dedication to cooperation, inclusiveness, and shared responsibility. Assisting scientists across all regions of the globe goes beyond an academic goal; it represents a strategic investment in global health, environmental sustainability, economic progress, and social stability. By fostering equitable partnerships, enhancing scientific diplomacy, and encouraging the free flow of ideas, the international research community can develop innovative solutions to the world's most urgent issues and help create a more resilient, peaceful, and sustainable future for everyone. We stay interconnected. In light of geopolitical tensions, the importance of mutually beneficial scientific dialogue and broader science diplomacy initiatives is greater than ever for the community focused on environmental science and technology, especially as the world starts to recover from the various effects of the global COVID-19 pandemic. Indeed, dismantling barriers and fostering collaboration across borders and disciplines is crucial for tackling significant environmental issues of global relevance and achieving the United Nations' Sustainable Development Goals, which are designed to benefit everyone, irrespective of race, gender, religion, or national origin. In simple terms, our collective well-being relies on our mutually beneficial relationships. It's time to intensify our efforts to build these bridges. In support of this mission, the Rojava Journal of Science and Technology team is broadening our global initiatives in environmental science, engineering, and health, with a particular focus on regions that have been historically underrepresented. We enthusiastically invite your urgent, timely, and valuable contributions to enhance cross-disciplinary research in environmental science and technology, no matter where you are located.

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