

IMMIGRATION FOR SUSTAINABLE DEVELOPMENT: A SCIENCE DIPLOMACY PERSPECTIVE

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Abstract

This paper provides a comprehensive overview of the intersection of immigration and sustainable development, highlighting the potential of science diplomacy to address the challenges and opportunities associated with immigration. The abstract and introduction effectively set the stage for the paper, emphasizing the importance of understanding the relationship between immigration and sustainable development in an increasingly interconnected world. The paper is organized into three main sections, each thoroughly examining a specific aspect of immigration and sustainable development. First, it provides a detailed analysis of the role of immigration in sustainable development, covering economic, social, and cultural dynamics, as well as environmental considerations. Secondly, it explores the role of science diplomacy in shaping immigration policies, highlighting the importance of evidence-based decision-making, data collection and analysis, and stakeholder engagement. The section provides a clear and concise overview of how science diplomacy can contribute to the development of effective immigration policies. Third, it addresses the challenges and opportunities associated with immigration and sustainable development, emphasizing the need for global cooperation, policy integration, and the importance of addressing the complexities of immigration holistically and sustainably. The conclusion effectively summarizes the main arguments of the paper, highlighting the critical role of science diplomacy in promoting sustainable immigration practices that contribute to overall development goals. The paper also provides a comprehensive and nuanced analysis of the relationships between immigration and sustainable development. The use of empirical evidence and case studies adds depth and credibility to the analysis. Therefore, paper highlights the importance of science diplomacy in addressing the challenges associated with immigration and sustainable development. The organization and structure of the paper are clear and logical, making it easy to follow and understand. In this study, based on a strategic partnership approach and using a descriptive-analytic methodology (a combination of quantitative and qualitative methods), in meantime, the research provides a valuable contribution to the literature, with meticulous collection and analysis of reputable sources such as scholarly articles, books, reports, case studies, and relevant databases on immigration and sustainable development, highlighting the critical role of science diplomacy in promoting sustainable and equitable immigration practices.

Keywords

Immigration, Sustainable Development, Science Diplomacy, Environmental Consideration, Social Challenges

Introduction

Immigration and sustainable development are two interconnected concepts impacting the livelihoods of individuals, families, and communities. These two concepts are relevant to academic discourse, and each one has its effects on the largest human society for various reasons.

Immigration refers to the movement of individuals from one country to another intending to reside permanently or temporarily in the host country. It is a complex phenomenon influenced by various factors, including economic opportunities, social circumstances, political stability, and environmental conditions. Immigration has been a fundamental aspect of human history, shaping cultures, economies, and societies throughout time (International Organization for Migration, 2016). On the other hand, sustainable development is a concept that emerged in response to the growing concern for the environment, social equity, and economic well-being. Immigration, when managed sustainably, can support the principle of meeting present needs without compromising future generations' ability to meet their own. SD seeks to strike a balance between environmental preservation, social inclusivity, and economic growth to ensure the long-term wellbeing of societies (Hariram et al., 2023). The relationship between immigration and sustainable development is complex and multifaceted.

Immigration can contribute positively to sustainable development by addressing labor shortages, fostering cultural diversity, and driving economic growth through entrepreneurial activities and innovation. For instance, migrants often fill essential roles in sectors such as healthcare and agriculture, which are crucial for the economy's overall sustainability (United Nations, 2020). It contributes to sustainable development by bringing in a diverse range of skills, knowledge, and perspectives.

Immigrants often contribute to economic growth, innovation, and cultural enrichment, fostering social cohesion and diversity within host societies. They can also fill labor market gaps, support aging populations, and contribute to the overall productivity and competitiveness of nations. Additionally, the remittances sent by immigrants to their home countries can significantly support local development initiatives and reduce poverty (World Bank, 2018). However, immigration also presents challenges and potential trade-offs related to sustainable development. Large-scale immigration can strain resources, including housing, healthcare, and education systems. It may also lead to social and economic inequalities, cultural tensions, and environmental pressures. Therefore, large influxes of migrants can strain public services and infrastructure if not managed properly, potentially hindering sustainable development goals. Understanding the complex dynamics between immigration and sustainable development is crucial for formulating effective policies and strategies. By considering the economic, social, and environmental aspects, policymakers can create frameworks that promote inclusive societies, equitable distribution of resources, and environmental stewardship while harnessing the potential benefits that immigration can bring. By exploring this relationship, we gain insights into how immigration can be managed to foster sustainable and inclusive societies through science diplomacy, a powerful approach that combines

scientific collaboration and international relations to address global challenges. This framework recognizes the value of scientific knowledge and expertise in shaping policies, fostering cooperation, and promoting peaceful international relations.

Science diplomacy bridges the gap between scientific communities and policymakers by facilitating the exchange of ideas, research findings, and technological advancements. It recognizes that many global challenges, such as climate change, public health crises, and sustainable development, require international collaboration and evidence-based decision-making (Bulut et al., 2023). The relevance of science diplomacy in addressing global challenges is evident in several key aspects: for example, sharing scientific knowledge, data, and research findings across borders to promote open dialogue and collaboration between different countries to work together, share expertise, and collectively develop solutions to complex problems (Fedoroff, 2009). Science diplomacy emphasizes the use of scientific evidence and expertise in policymaking processes, encouraging policymakers to adopt reliable scientific approaches. This leads to more informed and effective policies that address global challenges (Gluckman, 2014). Additionally, it fosters international collaboration among scientists, researchers, and policymakers. By transcending national boundaries and facilitating networks, science diplomacy enables the pooling of resources, sharing of best practices, and joint efforts in scientific research, technology development, and innovation (Gluckman et al., 2014). Science diplomacy plays a crucial role in building trust and fostering positive diplomatic relations among nations. It provides a common ground for engagement, facilitates dialogue and cooperation on shared challenges, and emphasizes capacity building in developing countries (Ruffini, 2017). Promoting scientific collaborations and technology transfer, it supports the advancement of scientific research, education, and infrastructure in these regions, fostering sustainable development and reducing global inequalities (Van Langenhove, 2017). Thus, this study critically examines the role of science diplomacy in addressing immigration for sustainable development, which aims to highlight the problems, challenges, and barriers that exist at national, regional, and international levels. This study also highlights the challenges faced by Afghan migrants and those across the region, examining how science diplomacy can bridge gaps between migration issues and sustainable development. It further emphasizes the fundamental benefits of fostering long-term engagement, collaboration, and support for migrant populations through a science-based approach. This approach will guide effective policies and strategies, enabling the design of sustainable development programs tailored to migration needs. Additionally, the study explores how science diplomacy can shape immigration policies that advance sustainable development, particularly in key areas of social progress and socio-economic collaboration.

Due to the importance of research topics, there are many literatures, international migration and remittances have been shown to significantly reduce poverty in developing countries, highlighting the economic impacts of immigration (Adams & Page, 2005). Within economic impact, climate change is increasingly driving migration as an adaptation strategy, affecting both source and destination countries (Black et al., 2011). Thus, while forcing the migration is a critical issue, it intersects with broader social transformations (Castles, 2003).

Thereafter, science diplomacy, which includes sharing scientific knowledge across borders, is essential for addressing global challenges (Fedoroff, 2009). Transitioning to sustainable development is a major challenge for the scientific community, requiring significant shifts in how science is conducted and applied (Martens & Rotmans, 2002). Migration is also seen as a viable adaptation strategy to the impacts of climate change, where, the Sustainable Development Goals provide a comprehensive framework for global development, succeeding the Millennium Development Goals (Sachs, 2012).

In the meanwhile, Science diplomacy plays a pivotal role in fostering international collaboration and leveraging scientific advancements for global benefit. The 2030 Agenda for Sustainable Development outlines ambitious goals to achieve sustainable development worldwide, emphasizing the interconnectedness of global challenges (United Nations, 2015). Survival migration, which arises from the need for protection rather than economic opportunity, presents a new framework for understanding and addressing forced migration (Betts, 2010). The challenges liberal states face in controlling immigration underscore the complexities of modern migration policies. Comparative studies of fishery management in different countries illustrate the importance of sustainable practices in resource management (Marten & Povlovina, 1982). Science diplomacy and international cooperation are crucial for addressing global issues, as they enable the pooling of scientific resources and knowledge across borders. The phenomenon of premature deindustrialization in developing countries poses significant challenges for sustainable economic development (Rodrik, 2016). According to the literature of the research, there is no specific subject entitled: *Immigration for Sustainable Development: A Science Diplomacy Perspective*. Where, this paper will overcome the gap and also, it will provide literature for the future research accordingly.

This study aims to examine the relationship between migration policies and sustainable development from the perspective of science diplomacy. The main research question focuses on how science diplomacy shapes the interaction between these two areas. In this context, it is argued that science diplomacy-oriented migration policies contribute positively to sustainable development outcomes by enhancing knowledge transfer, scientific collaboration, and innovation capacity. In particular, the role of scientific cooperation and knowledge transfer-facilitated by migration mobility achieving the Sustainable Development Goals (SDGs) lies at the core of this contribution. However, to assess whether this contribution truly materializes, the study also considers an alternative hypothesis: "A science diplomacy-oriented migration policy does not contribute to sustainable development outcomes through increased knowledge transfer, scientific collaboration, and innovation capacity."

The study adopts a descriptive-analytical method, and its conceptual framework is constructed through a systematic literature review and content analysis. Within this scope, academic publications, policy documents, and national/international institutional reports are examined to provide a multidimensional evaluation of how science diplomacy can serve the Sustainable Development Goals through migration mobility.

The Economic Impact of Immigration & Sustainability: A Science Diplomacy Approach

The paper analyzes the relationship between immigration and sustainable development, considering economic, social, and environmental aspects. Exploring the concept of science diplomacy and its relevance to addressing immigration, the relationship between immigration and sustainable development encompasses various economic, social, and environmental aspects.

Economic Aspects

According to the economic aspect, it could say that immigration can contribute to economic growth by bringing in new skills, labor, and entrepreneurship. Immigrants often fill labor market gaps and contribute to innovation and productivity, leading to increased economic output. Another important issue that affects economic growth is job creation, where immigrants can create new job opportunities through entrepreneurship and by increasing demand for goods and services. Thus, it can also fill labor shortages in specific sectors, which can stimulate economic growth. In the meantime, immigrants often send remittances back to their home countries, which can contribute to economic development and poverty reduction (United Nations, 2019). These financial flows can support local businesses and improve living standards in the countries of origin.

Social Aspects

From a social perspective, immigration influences cultural diversity, social services, integration processes, and inclusion outcomes. Cultural Diversity: Immigration brings cultural diversity, enriching societies by promoting tolerance, understanding, and intercultural dialogue (United Nations, 2019). It can lead to the exchange of ideas, traditions, and perspectives, fostering social cohesion and cultural vitality. Immigrants help sustain critical social services like healthcare and pensions by expanding the tax-paying workforce. They can help support aging populations and ensure the viability of social welfare systems. Thereafter, social integration also involves ensuring equal access to education, healthcare, housing, and social protection, as well as combating discrimination and promoting social inclusion (United Nations, 2019).

Environmental Aspects

The environmental aspect is critically important due to current climate and resource challenges. Climate change significantly influences migration patterns, as environmental factors, including rising temperatures, extreme weather events, and natural disasters, can displace populations. Environmental degradation and resource scarcity often force people to migrate in search of more sustainable living conditions (European Union, n.d.). Addressing climate change and environmental challenges is essential for sustainable development and managing migration flows. They can bring knowledge and skills related to sustainable agriculture, renewable energy, and conservation. Immigrants can also contribute to sustainable urban development by promoting energy efficiency and green infrastructure.

Overall, the relationship between immigration and sustainable development is complex and multifaceted. It involves the use of scientific collaboration and knowledge exchange to foster international cooperation and find sustainable solutions to global issues. By leveraging scientific expertise and interdisciplinary networks, science diplomacy can contribute to addressing the complex challenges associated with immigration and promoting sustainable development. Here are some key points to consider regarding the relevance of science diplomacy in addressing immigration challenges for sustainable development: Understanding the root causes of immigration: Science diplomacy can contribute to a better understanding of the underlying factors that drive immigration, such as climate change, economic disparities, and political instability. So, research and sharing scientific knowledge could help policymakers to make decisions and develop strategies to address these root causes. Science diplomacy can help develop policies that are grounded in scientific research and data, which can lead to more effective and sustainable approaches to managing immigration challenges (TÜBA & AASSA, 2024).

Another key aspect is the enhancement of international cooperation. Immigration challenges are often transnational, requiring collaborative efforts among nations to develop sustainable solutions. Science diplomacy can facilitate collaboration between countries, enabling the sharing of best practices, resources, and expertise. By fostering international partnerships, science diplomacy can contribute to the development of comprehensive and coordinated approaches to immigration. When examining immigration's impact on the SDGs, evidence shows that migration can produce both beneficial and detrimental effects on their realization. To achieve these goals, building capacity and knowledge exchange is an essential factor; thus, science diplomacy promotes the exchange of knowledge and resources across countries and regions. By building scientific capacity and facilitating knowledge exchange, science diplomacy can empower countries to address immigration challenges more effectively. It can include sharing expertise in areas such as migration policies, integration strategies, and sustainable development practices. In conclusion, science diplomacy is relevant to addressing immigration challenges for sustainable development.

The Role of Science Diplomacy in Addressing Immigration Challenges

Science diplomacy plays a crucial role in addressing immigration challenges by promoting international cooperation, fostering understanding, and leveraging scientific expertise to find innovative solutions. It involves the collaboration between scientists, policymakers, and diplomats to address global issues, including those related to immigration. Science diplomacy offers a framework for addressing immigration challenges through international cooperation, evidence-based policy-making, and the application of scientific and technological innovations. Through fostering global partnerships and leveraging scientific knowledge, countries can develop more effective and humane responses to migration issues, benefiting both migrants and hosts. Communicative diplomacy facilitates the collection and sharing of accurate data on migration patterns, demographics, and economic impacts. For instance, the International Organization for Migration (IOM) and the United Nations High Commissioner for

Refugees (UNHCR) collaborate on gathering and analyzing data to inform policy decisions (IOM, 2020). The EU-funded Horizon 2020 project 'Migrant Integration Policy Index (MIPEX)' enables cross-national analysis of integration policies, offering policymakers' evidence to improve their strategies (MIPEX, 2015). It further facilitates the exchange of scientific knowledge, data, and research findings among countries. Promoting international collaboration in research helps address immigration challenges by providing evidence-based solutions and informed policy decisions (The National Academies Press, 2021).

Addressing Root Causes: Science diplomacy can contribute to addressing the root causes of immigration by focusing on research and development in areas such as agriculture, climate change, and public health. By addressing these challenges, science diplomacy can help create conditions that reduce the need for migration (The National Academies Press, 2021). For example, the Global Environment Facility (GEF) funds projects that aim to mitigate climate change impacts, thereby addressing one of the root causes of forced migration. Science diplomacy is vital in building capacity and infrastructures to address global challenges, including migration, health crises, and environmental issues. By fostering international cooperation and leveraging scientific expertise, science diplomacy enhances the capabilities of nations to manage complex problems effectively. Here are some specific examples illustrating this role by providing technical assistance, training programs, and infrastructure development; it helps countries strengthen their scientific capabilities and address the underlying issues that contribute to immigration. International educational programs provide opportunities for students and researchers from various countries to collaborate and enhance their skill, which fosters a global network of experts who can address migration challenges with advanced scientific and technical knowledge (Global Environment Facility, 2021). Also, the IOM provides training for government officials on migration management. It includes developing policies and systems to handle migration effectively and humanely. On the other hand, it extends international cooperation through multilateral engagement and cooperation; for example, the Global Health Security Agenda is a multilateral initiative aimed at building global capacities to prevent, detect, and respond to infectious disease threats. It enhances national capabilities through international cooperation and shared scientific expertise, which is crucial for managing migration-related health issues (IOM, 2019). Science diplomacy plays a critical role in building capacity and infrastructure through international cooperation, enhancing scientific and technical expertise, and developing essential resources and infrastructures. By fostering global partnerships and leveraging scientific knowledge, countries can improve their ability to manage migration and other complex global challenges, benefiting both migrants and host communities.

Informing Policy Decisions: Science diplomacy provides policymakers with scientific evidence and expertise to inform immigration policies by integrating scientific knowledge into policy discussions; it helps ensure that decisions are evidence-based, effective, and sustainable. It is pivotal in informing policy decisions and bridges scientific expertise with diplomatic efforts for global challenges. It integrates knowledge exchange

and collaboration between nations to address issues like climate change and health pandemics. This synergy fosters evidence-based policymaking, strengthening international relations through collaborative solutions.

Promoting International Cooperation: Science diplomacy fosters collaboration and cooperation among countries, including those affected by immigration challenges. By bringing together scientists, policymakers, and diplomats from different nations, it promotes dialogue, understanding, and joint efforts to address common immigration issues (Global Health Security Agenda, 2019).

While documented cases of science diplomacy directly addressing immigration challenges in specific countries or regions remain limited, this approach can help mitigate the underlying factors contributing to migration pressures. By promoting scientific collaboration, knowledge sharing, and evidence-based policymaking, science diplomacy can contribute to addressing the root causes of migration, such as poverty, climate change, and lack of economic opportunities. Here are a few examples of how science diplomacy can indirectly address immigration challenges:

- **Climate Change and Migration:** Climate change is a significant driver of migration, as it can lead to environmental degradation, natural disasters, and resource scarcity. Science diplomacy can facilitate international cooperation in climate research, adaptation strategies, and mitigation efforts. Through scientific collaboration on climate change mitigation, countries can collectively reduce environmental degradation, potentially decreasing climate-driven migration pressures.

Technological innovation and scientific progress can stimulate sustainable economic growth, potentially mitigating migration pressures rooted in financial instability. Science diplomacy can promote collaboration in research and innovation, leading to the development of new technologies, job creation, and economic growth. By fostering scientific cooperation and knowledge exchange, countries can work together to create more favorable conditions for economic development, reducing the push factors for migration.

- **Health and Migration:** Science diplomacy can also play a role in addressing health challenges that contribute to migration. For example, by promoting international collaboration in public health research, countries can work together to address infectious diseases, improve healthcare systems, and enhance access to healthcare. By improving health conditions and healthcare infrastructure, science diplomacy can contribute to reducing the health-related factors that drive migration.

It is important to note that addressing immigration challenges requires a comprehensive approach that involves multiple stakeholders, including policymakers, diplomats, scientists, and civil society. Science diplomacy can provide a platform for collaboration and knowledge exchange, enabling evidence-based decision-making and policy development.

Science diplomacy, Immigration Challenges and Sustainable development

Science diplomacy can play a vital role in addressing immigration challenges for sustainable development. By leveraging scientific collaboration and international cooperation, science diplomacy can contribute to finding innovative solutions and promoting sustainable development in the context of immigration. Here are some ways in which science diplomacy can follow:

Data-driven policy-making: Science diplomacy can provide evidence-based data and research to inform policy-making related to immigration. By analyzing migration patterns, demographic trends, and socio-economic impacts, scientists can contribute valuable insights to policymakers, helping them make informed decisions. Driven data policymaking for sustainable development, rooted in science diplomacy, leverages scientific data to craft policies addressing global challenges such as climate change, health crises, and sustainable development (Flink & Rüffin, 2019). This approach fosters international cooperation, ensuring that policies are informed by reliable data and scientific consensus, ultimately promoting global sustainability and resilience through evidence-based decision-making and collaborative international efforts (Turekian et al., 2015)

Understanding root causes: Science diplomacy can facilitate research and collaboration to better understand the root causes of immigration. By studying factors such as climate change, conflict, economic disparities, and social inequalities, scientists can contribute to identifying sustainable solutions that address the underlying causes of migration. So, sustainable development addresses the root causes of global challenges by promoting integrated solutions that balance economic growth, social inclusion, and environmental protection (Sachs, 2015). By focusing on the SDGs, it tackles issues such as poverty, inequality, and climate change. For instance, ending poverty (SDG 1) involves enhancing access to education, healthcare, and economic opportunities, thus breaking the cycle of deprivation (United Nations, 2020). Similarly, addressing climate action (SDG 13) involves reducing greenhouse gas emissions and promoting renewable energy, which mitigates environmental degradation and fosters resilience against climate impacts (IPCC, 2018). Sustainable development also promotes inclusive institutions and governance (SDG 16), ensuring that policies are equitable and just, thereby preventing conflicts and fostering peace (Kanie & Biermann, 2015). This holistic approach ensures that the underlying causes of socio-economic and environmental issues are systematically addressed, leading to long-term, sustainable solutions.

Capacity building and knowledge sharing: Science diplomacy can support capacity-building efforts in countries affected by immigration. By promoting scientific cooperation and knowledge sharing, scientists can help build local research capabilities, develop sustainable solutions, and empower communities to address the challenges associated with immigration.

Technology and innovation: Science diplomacy catalyzes technological progress in addressing complex immigration challenges through international research collaboration and knowledge exchange. By facilitating joint scientific endeavors across borders, this approach stimulates innovation in critical areas such as border security

technologies, humanitarian assistance systems, and sustainable settlement infrastructure. The collaborative nature of such scientific partnerships enables the development of more sophisticated and humane solutions to migration management challenges.

Through coordinated research initiatives, scientists and engineers can devise advanced systems for migration monitoring that balance security concerns with fundamental human rights protections. Similarly, technological innovations in humanitarian aid delivery, developed through international scientific cooperation, can improve the efficiency and effectiveness of assistance programs for displaced populations. In the realm of urban planning and infrastructure development, science diplomacy fosters the creation of sustainable settlement solutions that accommodate migrant populations while minimizing environmental impacts and promoting social cohesion. These technological advancements, grounded in rigorous scientific research and developed through multilateral cooperation, represent a progressive approach to immigration management that aligns with sustainable development principles (National Academies of Sciences, Engineering, and Medicine, 2021).

Health and well-being: Science diplomacy can contribute to addressing the health and well-being of migrants. By collaborating on research related to healthcare access, disease prevention, mental health support, and social integration, scientists can help improve the overall well-being of migrants and promote sustainable development.

International cooperation and dialogue: Science diplomacy can facilitate international cooperation and dialogue on immigration issues. By bringing together scientists, policymakers, and stakeholders from different countries, science diplomacy can promote mutual understanding, exchange best practices, and foster collaboration to address the complex challenges associated with immigration.

The potential of scientific collaboration, knowledge exchange, and policy dialogue in finding innovative solutions. Scientific collaboration, knowledge exchange, and policy dialogue have the potential to play a crucial role in finding innovative solutions to immigration challenges. Bringing experts, policymakers, and stakeholders from various fields together can foster a deeper understanding of the complexities of immigration and contribute to the development of evidence-based policies and practices. Interdisciplinary scientific cooperation, cross-border knowledge transfer, and multilateral policy discussions collectively enable novel solutions to global issues. These elements of science diplomacy foster environments where interdisciplinary and cross-border partnerships can thrive, leveraging diverse expertise and perspectives to address complex issues. A prime example of it is the international response to climate change, particularly through the Intergovernmental Panel on Climate Change (IPCC, 2018). The IPCC, established in 1988 by the United Nations, exemplifies how scientific collaboration and policy dialogue can lead to groundbreaking solutions. Comprising scientists from various disciplines and countries, the IPCC conducts comprehensive assessments of climate science, impacts, and potential mitigation strategies. This collaborative framework ensures that the latest scientific knowledge informs policy decisions globally. One notable case study illustrating the power of this collaborative approach is the Paris Agreement of 2015. The agreement

emerged from extensive negotiations involving scientists, policymakers, and diplomats from nearly 200 countries. Scientific assessments from the IPCC were instrumental in establishing the Paris Agreement's targets, including the goal of limiting global temperature rise to well below 2°C above pre-industrial levels (UNFCCC, 2015). The collaborative dialogue facilitated a consensus on critical issues, leading to a unified global commitment to combat climate change. Beyond climate change, the potential of scientific collaboration is evident in health crises, such as the COVID-19 pandemic. The rapid development and distribution of vaccines were made possible by unprecedented levels of international scientific cooperation and knowledge exchange. Organizations like the World Health Organization coordinated global efforts, ensuring that data and research findings were shared openly, accelerating the development of effective vaccines (WHO, 2020). These examples highlight that scientific collaboration, knowledge exchange, and policy dialogue are not merely academic exercises but essential tools for addressing global challenges. By fostering an environment of cooperation and shared learning, these processes enable the development of innovative solutions that are scientifically robust and widely accepted, ultimately contributing to global sustainability and resilience.

Policy Recommendations

Policy Recommendations for Leveraging Science Diplomacy to Address Immigration Challenges for Sustainable Development in Afghanistan:

Strengthen International Collaboration: Due to the importance of the matter, it's essential to have scientific cooperation and collaboration. So, it has been recommended to foster partnerships among Afghan scientific and academic institutions and international organizations to promote knowledge exchange, capacity building, and research collaborations (International Science Council, 2021).

Encourage joint research projects and scientific exchanges to enhance scientific cooperation and promote sustainable development in Afghanistan (International Science Council, 2021).

Facilitate the participation of Afghan scientists in international conferences, workshops, and training programs to enhance their skills and knowledge (International Science Council, 2021).

Support Displaced Scientists: Establish programs and initiatives to support Afghan scientists who have been displaced due to conflict or political instability, providing them with resources, funding, and opportunities to continue their research.

Collaborate with international organizations, such as the International Science Council and Scholars at Risk, to provide assistance and resources for Afghan scholars and scientists seeking refuge.

Create mechanisms to facilitate the repatriation of Afghan scientists once the situation stabilizes, ensuring their safe return and the continuity of their contributions to sustainable development (International Science Council, 2021).

Promote Science Education and STEM Programs: Invest in science education and STEM (science, technology, engineering, and mathematics) programs in Afghanistan to empower the younger generation with the necessary skills and knowledge for sustainable development.

Collaborate with international partners to develop and implement science education initiatives, including teacher training programs, curriculum development, and the provision of educational resources (International Science Council, 2021).

Encourage the inclusion of women and girls in science education and STEM fields, addressing gender disparities and promoting gender equality in scientific research and innovation.

Establish Science Diplomacy Platforms: Create science diplomacy platforms and networks that bring together Afghan scientists, policymakers, and international stakeholders to address immigration challenges and promote sustainable development.

Organize science diplomacy forums, workshops, and conferences to facilitate dialogue, knowledge sharing, and collaboration on immigration-related issues and their impact on sustainable development.

Engage with international science diplomacy initiatives and organizations to leverage their expertise and resources in addressing immigration challenges and promoting sustainable development in Afghanistan (International Science Council, 2021).

Conclusion

Based on the current search results, it appears that there is limited information specifically addressing the key findings of research on immigration in the context of sustainable development from a science diplomacy perspective. However, we can draw some implications based on the broader understanding of science diplomacy and its potential role in addressing immigration and sustainable development issues. Science diplomacy can facilitate international collaboration. Science diplomacy involves the collaboration between scientists, policymakers, and diplomats to address global challenges. In the context of immigration and sustainable development, science diplomacy can facilitate international collaboration on research projects, data sharing, and best practices. It could inform evidence-based policymaking, contribute to sustainable development goals, address the root causes of migration, and promote innovation and technology transfer. Science diplomacy can facilitate the transfer of knowledge, technology, and innovation between countries, which can contribute to sustainable development and address the challenges associated with immigration. This can involve collaborations on renewable energy, agricultural practices, healthcare, and other areas that are relevant to both immigration and sustainable development. Although science diplomacy promotes integration and social cohesion, addresses health and well-being, builds partnerships, and fosters cooperation

Overall, the potential for future research and the importance of continued efforts in science diplomacy to address immigration challenges are immense. By leveraging scientific knowledge, collaboration, and evidence-based approaches, science diplomacy can contribute to finding sustainable and effective solutions to the complex issues surrounding immigration.

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