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The World Academy of Sciences for the advancement of science in developing countries (TWAS)

Strategic Plan P7 (2026-2030)

Introduction

Enabling Science for a Changing World

The World Academy of Sciences for the advancement of science in developing countries (TWAS) enters its seventh strategic planning cycle (2026–2030) at a time of transformation and turbulence. The global scientific and geopolitical landscape is evolving rapidly, marked by intersecting crises—from climate change and biodiversity loss to pandemics, political conflicts and wars, inequality and technological disruption. These challenges call for renewed scientific engagement, global solidarity, and targeted investment in scientific capacity, particularly in the global South. TWAS stands uniquely positioned to respond, leveraging over four decades of action, collaboration, and innovation to empower scientists and institutions across developing countries.

A Legacy of Impact

Since its inception, TWAS has been a champion of scientific excellence and cooperation. Over the years, the Academy has funded thousands of research grants and fellowships, supported international collaboration, recognized outstanding scientists from the global South, and fostered the next generation of science diplomats through its events and trainings. Strategic Plan 6 (2021–2025) saw several milestones: the graduation of the 1,000th South-South PhD fellow; the establishment of the TWAS Young Affiliate Network (TYAN)[1]; the strengthening of initiatives for gender equity and inclusion; and the Academy's active role in climate change, pandemic-related science and the promotion of open science and science diplomacy. The foundations laid in this period now serve as a launchpad for an even more ambitious agenda.

[1] The TWAS Young Affiliates Programme was launched in 2007, whereas TYAN was formally established in 2016. TYAN includes both TWAS Young Affiliates and Alumni.

The TWAS Strategic Imperative

Strategic Plan 7 builds upon this legacy with a clear and urgent mission: to empower science in the global South as a driver of sustainable growth, innovation, and social progress. The Academy's vision aligns with key international frameworks, including the UN 2030 Agenda for Sustainable Development and the UN Pact for the Future, the UNESCO Recommendation on Open Science, the African Union's Agenda 2063, the International Decade of Science for Sustainable Development, and the UNESCO Priority Africa initiative. TWAS aims to harness the demographic and scientific potential of the global South, foster inclusive scientific ecosystems, and ensure that scientific advancement contributes to peace, socio-economic development, equity, and prosperity. This includes focusing on the influence of science and the democratization of the scientific method, particularly in the global South, where trust in science is often shaped by broader societal and political dynamics. TWAS also recognizes the importance of providing evidence-based input to inform policy discussions, while maintaining a clear distinction from the political decision-making process.

Navigating a Shifting Global Context

The need for a new, indispensable, bold, adaptive strategy is underscored by growing complexity in the global context. Artificial Intelligence (AI) and digital transformation are reshaping research and innovation systems, bringing both promise and risk. Meanwhile, misinformation, attacks on science–especially, and unexpectedly, within the global North–and geopolitical tensions threaten international collaboration. TWAS recognizes this by promoting science, and it believes that science-informed policies are more important than ever.

The COVID-19 pandemic and its ongoing aftermath have offered a stark reminder of the importance of investment in research capacity, particularly in lower-income settings. Looking ahead, TWAS will promote preparedness and resilience by supporting health-related research infrastructures, interdisciplinary approaches to global challenges and South-led and nature-based solutions.

The climate crisis affects particularly the Science- and-Technology-Lagging Countries (STLCs) identified by TWAS–that contributed least to this crisis–and makes TWAS's long-standing priority of supporting STI capacity in the global South even more compelling. This occurs with a renewed awareness of the importance of promoting scientific leadership and raising the voice of Low- and Middle-Income Countries (LMICs) in critical international forums. TWAS also acknowledges the importance of supporting displaced scientists and asylum seekers, recognizing the immense value they bring to host countries, as exemplified by TWAS's own founder Abdus Salam.

Importantly, the demographic shift in the global South—especially the youth boom in Africa and South Asia—presents an unprecedented opportunity. SP7 responds with programmes that invest in the next generation of scientists, ensuring that education and opportunity keep pace with demographic change.

TWAS's strong commitment to digital transformation and gender equity aligns closely with UNESCO's Digital Strategy and Priority Gender, reinforcing inclusive and forward-looking approaches to science capacity-building. These efforts ensure that technological advancement

and gender-responsive policies are embedded in TWAS's vision for a resilient and equitable global research landscape.

A Forward-Looking, Values-Driven Approach

Throughout Strategic Plan 7, TWAS reaffirms its commitment to excellence, inclusivity, sustainability, and integrity. The Academy will modernize its operations, embrace digital transformation, and strengthen monitoring, evaluation, and learning (MEL) systems to enhance programmes' effectiveness. This will be underpinned by a unified results-based management structure, ensuring that outcomes are systematically tracked, assessed, and used to inform continuous improvement. TWAS also commits to integrating ethical considerations into all programming, particularly as it engages with emergent technologies like AI.

As TWAS advances its mission, it will continue to rely on its most vital asset: its network of fellows, young affiliates, alumni, and partners. In particular, it is worth mentioning two associated international organizations, each dedicated to serving the scientific needs of developing nations: the Organization for Women in Science for the Developing World (OWSD) and the InterAcademy Partnership (IAP). OWSD and IAP are hosted by TWAS and together, we form the backbone of a global movement for science-driven development. This Strategic Plan reflects a more structured collaboration among the three organizations, with shared goals in promoting inclusive scientific excellence, coordinated governance mechanisms and communication activities, and synergistic programming that amplifies collective impact. TWAS will also continue to strengthen partnerships and collaborations, including with the Italian government, whose support plays a pivotal role in sustaining TWAS's mission, as well as with other long-standing governmental partners and the TWAS Regional Partners.

Conclusion

Strategic Plan 7 is a call to action. It positions TWAS as a central voice and actor in the global effort to harness science, technology and innovation for a more equitable, peaceful and sustainable world. By building on past achievements and adapting to emerging realities, TWAS is poised to lead with purpose and partnership, supporting scientists in the developing world to meet the most pressing challenges of our time. By contributing to the achievement of the Sustainable Development Goals, TWAS reinforces a forward-looking vision of science—one that serves and benefits all of humanity, with excellence and innovation as its key drivers.

References (selected)

1. TWAS Annual Report 2024, https://www.twas.org/sites/default/files/media/TWAS_AR%2024_web.pdf

2. UNESCO International Decade of Science for Sustainable Development (2024–2033), https://www.unesco.org/en/articles/unesco-launches-international-decade-science-sustainable-development-2024-2033

3. TWAS General Conference Report 2023, https://www.unesco.org/en/articles/hundreds-developing-world-scientists-gather-twas-16th-general-conference

Mission, Vision, and Core Values

Mission:

"To advance scientific excellence and cooperation in the global South through capacity building, knowledge sharing, and collaborative networks that drive sustainable development and social progress."

Vision:

"To be the premier global science hub empowering researchers and institutions in the global South to lead transformative research, shape evidence-based policies, and build a more equitable and sustainable future."

Core Values

1. Equity and Inclusivity
   We champion diversity and ensure equitable participation across multiple dimensions—including, but not limited to, geography, gender, academic discipline, generation, ability, and culture. We aim to lift barriers and strive to create environments where every voice is valued and all participants can reach their full potential, with particular attention to empowering underrepresented communities in science and research.
2. Excellence and Empowerment
   We pursue the highest standards in research and education as catalysts for innovation and sustainable progress. We are committed to building scientific research capacity and fostering autonomy, enabling scientists, institutions, and communities—especially in the global South—to become independent leaders and drivers of scientific progress.
3. Integrity and Transparency
   We maintain unwavering ethical standards and professional conduct in all our activities. Through openness, accountability, and clear communication, we ensure our work is credible, auditable, and worthy of public trust. Furthermore, we must advocate and act against ethical misconduct, predatory academic practices, and all forms of misinformation and disinformation regarding scientific issues.
4. Sustainability and Impact
   We align our mission with the United Nations Sustainable Development Goals (SDGs), championing science that advances both human development and environmental stewardship. Our work contributes to solutions that benefit current and future generations.
5. Collaboration and Engagement
   We build meaningful partnerships at local, regional, and global levels, with special emphasis on South-South and South-North cooperation. Through cross-disciplinary dialogue and hands-on engagement, we translate scientific evidence into practical solutions that inform policy and drive positive change for peace building and social and economic growth.

The Strategic Imperative of TWAS

The TWAS vision for the 2026-2030 period is centered around a strategic imperative: to empower science in the LMICs especially in STLCs and Least Developed Countries (LDCs) as a key driver for socio-economic progress, innovation and sustainable development.

This approach recognizes that sustainable development requires not only global coordination but also locally driven solutions that harness traditional ecological knowledge (TEK) of Indigenous Peoples' and Local Communities (IPLCs), strengthen South-South cooperation, and ensure that scientific advancement serves as a catalyst for equity, peace, and prosperity.

As a South-led convener of scientific collaboration and policy dialogue, TWAS positions itself as a unifying voice for the global South—championing inclusive science that addresses shared challenges and advances sustainable development.

TWAS's strategy for the next five years will focus on:

- Expanding scientific capacity and excellence in the global South through fellowships for masters, doctoral and postdoctoral training, research grants, institutional partnerships, and targeted support for early-career scientists to build sustainable research ecosystems.
- Strengthening science-policy interfaces to achieve effective dialogue between researchers and policymakers, leading to stronger scientific systems and evidence-based policies.
- Championing equity, diversity, and inclusion in S&T across all dimensions of the scientific enterprise, with dedicated programmes for gender equity, support for traditionally underrepresented or excluded groups (such as women, minorities, indigenous scholars, scholars from less-advantaged countries and low-resource languages), and initiatives that ensure fair access to scientific opportunities regardless of geographic or socioeconomic barriers.
- Promoting transformative South-South, South-North and triangular cooperation by leveraging TWAS's unique network of partners and Fellows, Young Affiliates and alumni to facilitate collaborative research, knowledge exchange, interdisciplinary problem-solving, and joint reports addressing critical global challenges.
- Advocating and advancing science diplomacy and scientific cooperation to build trust, foster dialogue across cultures and political divides, and mobilize scientific collaboration to address transnational challenges including climate change, health security, and sustainable growth.
- Supporting displaced and at-risk scientists worldwide through advocacy for academic freedom, emergency fellowships, research continuity programmes, and comprehensive career development opportunities that ensure scientific talent is preserved and nurtured regardless of adverse geopolitical circumstances.

- Fostering open science, academic integrity and knowledge democratization by championing practices that prioritize accessibility, transparency, reproducibility, ethical behaviour and equitable global participation in scientific discovery and innovation.
- Rewarding scientific excellence, promoting recognition and visibility through prestigious awards, strategic science communications, and advocacy that highlights exceptional scientific achievements in the global South while raising awareness of the critical role of science in addressing global challenges.
- Empowering the next generation of scientists providing mentorship, leadership development, networking opportunities, and platforms for emerging researchers to shape the future of science and contribute to effective, evidence-based solutions for their communities.

To bring about this strategic imperative, TWAS will continue to leverage partnerships, improve its governance and operational models, and promote a culture of impact monitoring and evaluation. By doing so, the Academy aims to remain at the forefront of global efforts to harness science for the common good, with a focus on the needs and priorities of the developing world and in particular of the Least Developed Countries.

Strategic Goals (2026-2030)

In order to implement its vision and fulfill its mission, TWAS has defined six Strategic Goals for the period 2026–2030, defined from the nine focal priorities. Each goal is accompanied by a set of objectives, key initiatives, and performance indicators to guide actions and monitor progress.

Strategic Goal 1: Promote Scientific Excellence and Build Capacity in the Global South

Objectives:

- Expand access to world-class education, research opportunities, and professional development for scientists in developing countries.
- Provide comprehensive support for early-career researchers through fellowships, exchanges, mentorship, and career-advancement pathways, while preventing brain drain.
- Help to support centers of excellence and regional hubs that serve as catalysts for scientific collaboration and knowledge creation.
- Promote international recognition of outstanding scientific achievements from researchers in the developing countries through prestigious awards and honors

Key Initiatives:

- Scale up TWAS fellowships, including set up of a MSc or MSc converting to PhD programme, postdoctoral programmes, and institutional capacity-building grants.
- Devise and cultivate strategic partnerships with science funding agencies, leading universities, research institutions, and academia.

- Establish targeted support programmes for scientific institutions in LDCs.

Performance Indicators:

- Number and effectiveness of fellowships awarded annually, with emphasis on LDCs participation.
- Number of PhD graduates with a growing proportion from STLCs and LDCs.
- Number of quality of publications and patents by alumni.
- Number of new funding agencies and programme partners gained.
- Number of institutions strengthened through capacity-building programmes.
- Career progression of the beneficiaries of TWAS programmes.
- Regional distribution and impact of supported scientists and projects.

Strategic Goal 2: Advance Science, Technology, and Innovation for Sustainable Development

Objectives:

- Promote cutting-edge research that addresses pressing global and sub-national development challenges aligned with the UN SDGs.
- Foster interdisciplinary research that bridges basic science, applied research, and community needs.
- Strengthen integration between scientific discovery, technological innovation, and solutions for a sustainable growth.
- Promote the inclusion of humanities and social sciences in the design, analysis, communication and implementation of research and programmes to expand the relevance and accessibility of scientific projects in and for the communities they affect.
- Continue to invest in basic science research as the foundation of the knowledge required to develop applied and sustainable scientific research.

Key Initiatives:

- Launch thematic research programmes and calls targeting critical SDG areas including climate, health, food security, and energy.
- Support science-based innovation, entrepreneurship, and technology transfer initiatives.
- Create ways to turn research findings into real-world solutions.
- Create pathways for linking academic research to national Technical and Vocational Education and Training (TVET) programmes and solutions that benefit livelihoods of communities at risk.

Performance Indicators:

- Number and impact of research projects directly contributing to SDGs.
- Innovation outputs and technology transfer successes from supported research.
- Engagement metrics with innovation ecosystems across the global South (consultancy, board participation).

Strategic Goal 3: Support Equity, Diversity, and Inclusion in Global Science

Objectives:

- As of 2026, conduct a comprehensive assessment to establish the baseline status of gender parity across all aspects of the organization, and set realistic targets to be achieved within the specified timeframe.
- Achieve gender balance and ensure meaningful participation of underrepresented groups across all scientific disciplines and career levels within the Academy.
- Transform institutional practices to create inclusive, supportive environments for all scientists.
- Fight against systemic barriers that limit scientific career advancement in the global South.

Key Initiatives:

- Establish robust data collection and monitoring systems to track participation, retention, and advancement of underrepresented groups across all TWAS programmes, ensuring disaggregated data informs policy and programme design.
- Implement targeted programmes and programme components for women scientists, including dedicated fellowships, grants, and leadership development, and enhanced communication support.
- Establish inclusive nomination, selection, and evaluation procedures across all TWAS activities.
- Create mentoring networks and professional development opportunities for marginalized groups.
- Advocate for and support institutional diversity policies among partners

Performance Indicators:

- Gender balance in fellowships, grants, and Academy membership (targeting 50% women representation).
- Participation rates of underrepresented groups in TWAS programmes.
- Implementation and effectiveness of diversity policies across partner institutions.

- Career advancement outcomes for supported scientists from underrepresented groups.

Strategic Goal 4: Strengthen Science-Policy Integration and Public Engagement

Objectives:

- Establish science as a cornerstone of evidence-based policy making at local, national, and international levels.
- Build capacity among scientists to effectively engage in policy processes and science diplomacy.
- Enhance public understanding and appreciation of science's role in addressing societal challenges.
- Cultivate a new generation of scientific communicators equipped to address complex global challenges.

Key Initiatives:

- Organize multidisciplinary and intergovernmental high-level science-policy dialogues and policymaker engaging workshops.
- Develop comprehensive science diplomacy and science communication capacity-building programmes both at TWAS HQ and regionally rotating among the five Regional Partners.
- Provision of “action grants” to alumni pairs to support their collaboration in science diplomacy for greater impact.
- Create accessible platforms and resources that help connect science with decision-making and engage the public in scientific issues.
- Promote open science practices that enhance transparency and accessibility of research.

Performance Indicators:

- Number of policy-relevant dialogues and their measurable impact on policy decisions.
- Number of scientists trained in science diplomacy and communication, with evidence of application.
- Number of alumni networks set up at regional level and their impact.
- Growth in public engagement through digital platforms, media, and community outreach.
- Adoption of open science practices among supported researchers and institutions.

Strategic Goal 5: Expand South-South, South-North and Triangular Cooperation Networks

Objectives:

- Harness the collective knowledge, resources, and innovation capacity of the global South.

- Facilitate transformative partnerships and knowledge exchange among developing countries.
- Build inclusive North-South partnerships that prioritize global South leadership and ownership.
- Highlight the value of 'diaspora' scientists and develop a strategy for their increased integration and impact in the TWAS community.

Key Initiatives:

- Expand and strengthen TWAS South-South cooperation platforms and joint research programmes.
- Expand and strengthen alumni networks.
- Facilitate collaborative research networks addressing shared challenges across the global South.
- Engage strategic multilateral and bilateral partners to support triangular cooperation initiatives.
- Create mechanisms for resource sharing and joint funding of South-South scientific collaboration.

Performance Indicators:

- Number and quality of joint research projects and publications by LMICs.
- Number of alumni collaborating with their host institutes after the programme end.
- Financial resources mobilized through South-South and triangular cooperation mechanisms.
- Scientist mobility and exchange statistics across global South networks.
- Impact and sustainability of South-South collaborative initiatives

Strategic Goal 6: Achieve Organizational Excellence and Innovation

Objectives:

- Strengthen TWAS's governance, operational efficiency, and strategic leadership capacity.
- Improve strategic evaluation of projects and programmes to concentrate resources on those that bring higher value, increasing our ability to deliver.
- Foster a culture of continuous learning, rigorous monitoring and evaluation, adaptive management, open communication, and teamwork.
- Leverage digital transformation, internal synergies and strategic communications to maximize global impact.

Key Initiatives:

- Implement robust monitoring, evaluation, and learning systems across all programmes.
- Modernize internal systems, governance structures, and operational procedures.
- Incentivize internal knowledge exchange, sharing of best practices, and standardized processes.
- Enhance TWAS's global visibility, thought leadership, and strategic communication and partnerships, including through the publication of an annual Science Impact report in partnership with UNESCO to showcase TWAS's contributions to global science and development.
- Invest in digital infrastructure and data-driven decision-making capabilities.
- Invest in research undertaken by staff, consultants and fellows that keeps TWAS Secretariat and Council up to date on the latest data and findings between science and development.
- Develop a programme for hosting researchers in science & society themes.

Performance Indicators:

- Implementation and effectiveness of evaluation mechanisms and adaptive management practices.
- Operational efficiency metrics and stakeholder satisfaction scores.
- Growth in global influence, digital reach, and strategic partnership development.
- Innovation in programme delivery and organizational learning outcomes.

Organizational Integration and Enhanced Autonomy

Current Organizational Structure

The World Academy of Sciences for the advancement of science in developing countries (TWAS) operates within a unique institutional framework. Legally, TWAS is a programme unit of the United Nations Educational, Scientific and Cultural Organization (UNESCO), which, under a 1991 agreement, assumed responsibility for administering TWAS funds and personnel. In 2004, the Italian Government adopted a law that ensured an annual financial contribution to the Academy's operation. Representatives of the Italian Government and UNESCO are members of the TWAS Steering Committee, which meets annually to discuss the activities and financial matters and approves the budget. TWAS encompasses three interconnected organizations (sub-programmes) —namely TWAS, OWSD and IAP—sharing common administrative infrastructure. The current structure features:

Direct UNESCO Connection: TWAS Secretariat maintains direct reporting lines to UNESCO Headquarters, ensuring alignment with UNESCO's broader scientific mandate while

benefiting from institutional support and global recognition. At the same time, TWAS is exploring pathways toward increased operational autonomy, including streamlined administrative processes. Progress toward this autonomy will be guided by defined benchmarks and periodic review mechanisms to ensure accountability, transparency, and alignment with both TWAS's mission and UNESCO's overarching framework—while maintaining full compliance with UNESCO's rules, regulations, and oversight procedures.

Shared Administrative Platform: A unified secretariat provides essential common services across all three organizations, including:

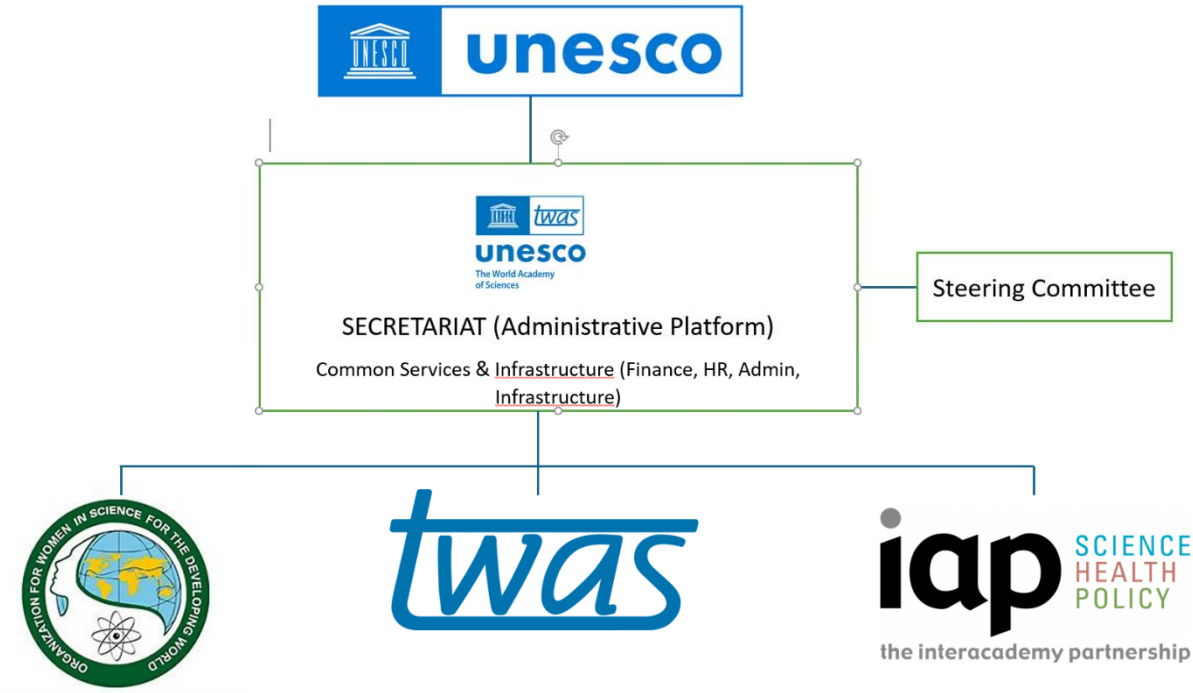
- Financial management and budgetary oversight.
- Human resources and administrative support.
- Infrastructure maintenance and facilities management.
- Legal and compliance coordination.
- Executive Director's Office.

Three Autonomous Organizations: From the administrative viewpoint OWSD and IAP are considered sub-programmes, operating under this shared platform:

- TWAS (The World Academy of Sciences for the advancement of science in developing countries)–operational branch, with dedicated programmes and projects.
- OWSD (Organization for Women in Science for the Developing World).
- IAP (InterAcademy Partnership)

It is also important to mention that TWAS operates in close relationship with a Category 1 UNESCO Institute, the Abdus Salam International Center for Theoretical Physics (ICTP). All the organizations are located on the ICTP Campus, where TWAS relies on all the infrastructure support (IT, cleaning, security, etc.). There are currently some staff members shared between TWAS and ICTP, and some programmes made in partnership.

Current Organizational Chart



Strategic Vision for SP7: Enhanced Integration and Autonomy

Strengthening UNESCO Partnership with Greater Responsiveness

During the SP7 period, TWAS will pursue a dual approach to optimize its relationship with UNESCO:

- Enhanced Integration: Deepening collaboration with UNESCO initiatives to maximize synergies in scientific capacity building, research promotion, and SDGs. This includes TWAS programmes supporting UNESCO's science priorities while contributing our unique expertise in South-South cooperation and scientific excellence in LMICs.
- Increased Autonomy and Responsiveness: Engaging in constructive dialogue with UNESCO Headquarters to secure greater operational flexibility and decision-making autonomy. This enhanced independence will enable TWAS to respond more rapidly to emerging scientific challenges and opportunities in the developing world while maintaining strong institutional ties with UNESCO.

Organizational Restructuring for Enhanced Effectiveness

- Integrated Secretariat Model: We will redesign the secretariat structure to create more effective coordination mechanisms between TWAS, OWSD, and IAP. This restructuring aims to:
    - Optimize resource, knowledge sharing, and teamwork across all operational and programmatic areas.
    - Eliminate duplication of efforts while preserving each organization's distinct identity.

    - Create synergistic opportunities for joint programming and impact.
- Shared Strategic Framework: Design common approaches where organizations' values and missions align, particularly in:
    - Promoting scientific excellence and capacity building.
    - Supporting underrepresented groups in science.
    - Fostering international scientific cooperation.
    - Advancing science and technology for a sustainable growth.
- Resource Integration: Implementing comprehensive resource-sharing mechanisms that extend beyond administrative services to include:
    - Joint fundraising and donor engagement strategies, with a focus on donor diversification and long-term financial sustainability to mitigate funding uncertainties.
    - Shared expertise and human capital.
    - Coordinated programme design and implementation.
    - Unified communications and outreach efforts.
- Implementation Approach: The organizational transformation will be implemented through structured dialogue and consultation processes involving:
    - Regular strategic planning sessions with all three organizations and their respective Governing Bodies.
    - Stakeholder engagement with governing bodies and key partners.
    - Phased implementation to ensure continuity of operations.
    - Performance monitoring and adaptive management approaches.

This restructuring represents a fundamental evolution in how TWAS operates, positioning the organization to be more agile, effective, and impactful in fulfilling its mission of advancing science for sustainable development in the global South, while maintaining its valued partnership with UNESCO and fostering deeper and mutually beneficial collaboration with OWSD and IAP.

Operational Plan: Strategic Projects

Strategic Project 1: South-South Excellence Fellowship Network

Strategic Goals Alignment

Goals 1, 5

SDGs Alignment

SDG 4 (Quality Education), SDG 10 (Reduced Inequalities), SDG 17 (Partnerships for the Goals)

Description

Expand and integrate the existing PhD, Postdoctoral, and Short-term Fellowship programs into a comprehensive South-South Excellence Network that facilitates systematic knowledge exchange, collaborative research, and capacity building across developing countries.

Key Activities and Goals

- Scale up PhD fellowships from 180 to 250 annually, with enhanced focus on LDCs.
- Increase postdoctoral fellowships from 90 to 150 annually.
- Establish new partnerships in underrepresented regions.
- Create alumni mentorship networks connecting current fellows and alumni with current recipients of fellowships.
- Liaise with OWSD to ensure synergies, partnerships and best practices on the development and implementation of fellowship programmes.
- Develop digital platform for ongoing collaboration among fellows, affiliates and alumni, reducing fragmentation in social media groups and platforms.
- Implement mandatory return-service components to strengthen home institutions.

Key Partnerships

- Host institutions in partner countries.
- National research councils and academies.
- UNESCO Field Units and Institutes.
- Private sector partners for innovation components.

Strategic Project 2: Climate Science and Sustainability Research Initiative

Strategic Goals Alignment

Goals 2, 4

SDGs Alignment

SDG 13 (Climate Action), SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 14 (Life Below Water), SDG 15 (Life on Land)

Description

Establish a comprehensive research program addressing climate change impacts and sustainable development solutions specifically tailored to developing country contexts, building on existing research grant and fellowship/exchange programmes.

Key Activities and Goals

- Launch 20 targeted research grants annually for climate-related projects.
- Create 5 regional climate research networks focusing on local solutions.

- Deliver climate science communication training for 200 scientists annually.
- Implement the Project Grants for Gender Equity and Climate Action Climate Women Programme (Global Climate Women) in 5 LDC countries (see Strategic Project 3 below).
- Create climate policy briefing series for policymakers.

Key Partnerships

- Intergovernmental Panel on Climate Change (IPCC) and climate organizations.
- National meteorological services and climate research agencies.
- Regional development banks.
- Private sector clean technology companies.
- Indigenous knowledge holders.

Strategic Project 3: Women in Science Leadership Acceleration Programme

Strategic Goals Alignment

Goals 1, 3

SDGs Alignment

SDG 5 (Gender Equality), SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth)

Description

Drawing on in-house expertise developed by partner organization, OWSD, and building on gender surveys carried out by IAP, transform the existing support for women scientists within TWAS into a comprehensive leadership development programme that addresses systemic barriers and creates pathways to scientific leadership positions.

Key Activities

- Target of 50% of all programmes for women scientists.
- Create leadership development programmes for 500 women scientists.
- Develop mentorship networks connecting senior and junior women scientists.
- Launch advocacy campaigns for institutional policy changes.
- Create women-led research programmes addressing gender-relevant challenges (see, for example, Global Climate Women above).
- Ensure equitable representation of women scientists in all TWAS communication activities.

Key Partnerships

- OWSD.
- IAP.

- UN Women.
- National women's scientific associations.
- Corporate sponsors committed to gender equality.
- Academic institutions with strong gender policies.

Strategic Project 4: Science Diplomacy Academy

Strategic Goals Alignment

Goals 4, 6

SDGs Alignment

SDG 16 (Peace, Justice and Strong Institutions), SDG 17 (Partnerships for the Goals), SDG 9 (Industry, Innovation and Infrastructure)

Description

Expand current science diplomacy training into a global academy offering hybrid modules, workshops and policy labs. Strengthen the science-policy interface by creating systematic mechanisms for evidence-based policy making and enhancing the capacity of both scientists and policymakers.

Key Activities and Goals

- Offer annual training to early-career scientists and diplomats.
- Train 50 scientists and diplomats in science diplomacy and science communication per year.
- Organize annual science diplomacy summits.
- Develop crisis communication protocols for scientific issues.
- Establish a partnership with SISSA and/or University of Trieste for a possible Master course on Science Diplomacy.
- Develop policy impact assessment tools.
- Link with OWSD Game Changers Programme developed for early career women scientists to link with policy makers.

Key Partnerships

- IAP.
- OWSD.
- American Association for the Advancement of Science (AAAS).
- International Science Council (ISC).
- National and International science communication organizations.

- Media houses and broadcasting networks.
- Technology companies for platform development.
- Diplomatic academies and foreign ministries.
- Civil society organizations.
- Parliamentary networks and legislative bodies.
- Think tanks and policy centers.
- Scuola Internazionale Superiore di Studi Avanzati (SISSA).
- University of Trieste.

Strategic Project 5: Science in Exile Initiative

Strategic Goals Alignment

Goals 1, 4

SDGs Alignment

SDG 16 (Peace, Justice and Strong Institutions), SDG 4 (Quality Education), SDG 10 (Reduced Inequalities)

Description

Expand the initiative into a comprehensive support system for displaced, at-risk, and refugee scientists, building on humanitarian values and academic freedom principles.

Key Activities

- Develop a replicable emergency fellowship programme for at-risk scientists.
- Advocate for academic freedom and support at international forums.
- Advocate for institutions in the TWAS network (target of 30) to create their own safe havens.
- Liaise with OWSD Masters programme for Displaced Women Scientists (Wisdom) to identify best practices, synergies and possible collaborations.

Key Partnerships

- IAP.
- OWSD.
- Scholars at Risk Network.
- UNHCR and humanitarian organizations.
- Human rights organizations.
- National academies and universities.

- Legal aid organizations.
- ISC.
- International academic freedom coalitions.

Strategic Project 6: Academy Excellence and Global South Scientific Leadership

Strategic Goals Alignment

Goals 1, 4, 5, 6

SDGs Alignment

SDG 4 (Quality Education), SDG 17 (Partnerships for the Goals), SDG 9 (Industry, Innovation and Infrastructure), SDG 16 (Peace, Justice and Strong Institutions)

Description

Strengthen TWAS's role as the premier academy for the global South by enhancing the Fellow election process, expanding prestigious awards, maximizing the impact of biennial conferences, and mobilizing the academy network to produce authoritative policy papers and establish interdisciplinary research networks that address critical global challenges.

Key Activities

- Elect an average of 200 distinguished Fellows (approximately 40 per year), with a strong emphasis on gender, geographic, and disciplinary diversity, aiming at 50% women representation.
- Keep TWAS awards to around 15 annual prizes recognizing excellence across all scientific disciplines.
- Transform biennial General Conference into premier global South science summit.
- Mobilize Fellow networks to produce authoritative policy papers on critical issues (climate, health, AI, food security, etc.).
- Establish 10 interdisciplinary Fellow-led working groups addressing cross-cutting challenges.
- Support the regional networks fostering collaboration among national academies.
- Develop mentorship programmes pairing senior Fellows with early-career scientists.
- Create travelling lecture series featuring TWAS Fellows across developing countries.
- Establish virtual academy platforms for ongoing collaboration and knowledge sharing.
- Facilitate and develop links between OWSD national chapter executive committees with TWAS regional office representatives and IAP Regional Networks.

Key Partnerships

- National academies of sciences across developing countries.
- IAP.
- OWSD national chapters.
- ISC.
- Regional scientific organizations.
- Policy research institutes.
- Major universities and research centers.
- Science media and publishing houses.
- Government science advisory bodies.

Strategic Project 7: Early-Career Researcher Leadership Incubator

Strategic Goals Alignment

Goals 1, 2, 3,4, 5, 6

SDGs Alignment

SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), SDG 17 (Partnerships for the Goals)

Description

Transform the TWAS Young Affiliates Network (TYAN) into a dynamic leadership incubator that develops the next generation of scientific leaders and social entrepreneurs.

Key Activities

- Expand TYAN membership to 1,000 young scientists.
- Develop leadership academies for emerging scientists.
- Create mentorship programmes with senior TWAS Fellows.
- Establish links and joint activities with IAP's Young Physician Leaders.
- Build on the leadership training curriculum for women scientists developed by OWSD.
- Develop the "Leadership in Sustainable Development for the Global South" initiative.
- Scale up some existing programmes:
    - TCGA (TYAN Collaborative Grant Awards): Supporting South-South research collaborations.

- TITOs (TYAN International Thematic Workshops): Capacity-building in priority research areas.
- Teach 4SD: Promoting SDG-aligned science education and engagement

Key Partnerships

- OWSD.
- IAP.
- Universities.

Strategic Project 8: Science Communication and Public Trust Initiative

Strategic Goals Alignment

Goals 2, 4

SDGs Alignment

SDG 4 (Quality Education), SDG 16 (Peace, Justice and Strong Institutions), SDG 3 (Good Health and Well-being)

Description

Develop comprehensive programmes to enhance public understanding of science and technology, combat misinformation, and rebuild trust in scientific institutions across developing countries, addressing the growing challenges of science skepticism and pseudoscience.

Key Activities

- Train 200 scientists as certified science communicators using culturally appropriate methods.
- Develop anti-misinformation campaigns in local languages addressing health, climate, and technology misuse.
- Establish 10 community science center units in collaboration with the IAP Science Education Programme.
- Launch science literacy programmes in partnership with schools reaching 100,000 students.
- Develop rapid response teams to address science-related misinformation during crises.
- Create science storytelling festivals celebrating local scientific achievements.
- Advocate for the inclusion of science communication in university curricula across the global South.

Key Partnerships

- IAP.
- OWSD.

- TWAS Regional Partners.
- TYAN.
- National science museums and centers.
- Community organizations and traditional leaders.
- Educational broadcasting networks.
- Social media platforms and fact-checking organizations.
- Teacher training institutions.
- Cultural and arts organizations.
- Religious and community leaders.
- Local media outlets and journalists.

Strategic Project 9: Organizational Excellence and Digital Transformation

Strategic Goals Alignment

Goal 6

SDGs Alignment

SDG 9 (Industry, Innovation and Infrastructure), SDG 17 (Partnerships for the Goals), SDG 16 (Peace, Justice and Strong Institutions)

Description

Modernize TWAS operations through digital transformation, enhanced governance structures and processes, improved internal communication and robust monitoring and evaluation systems to maximize organizational effectiveness.

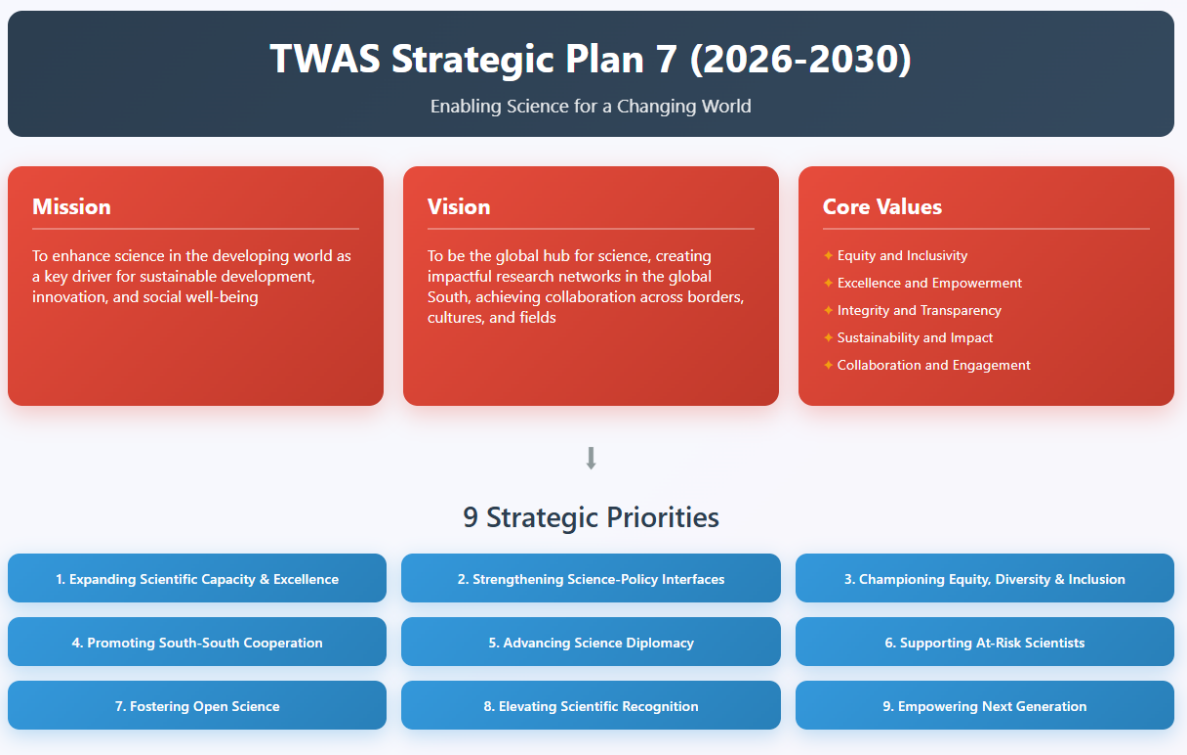
Key Activities

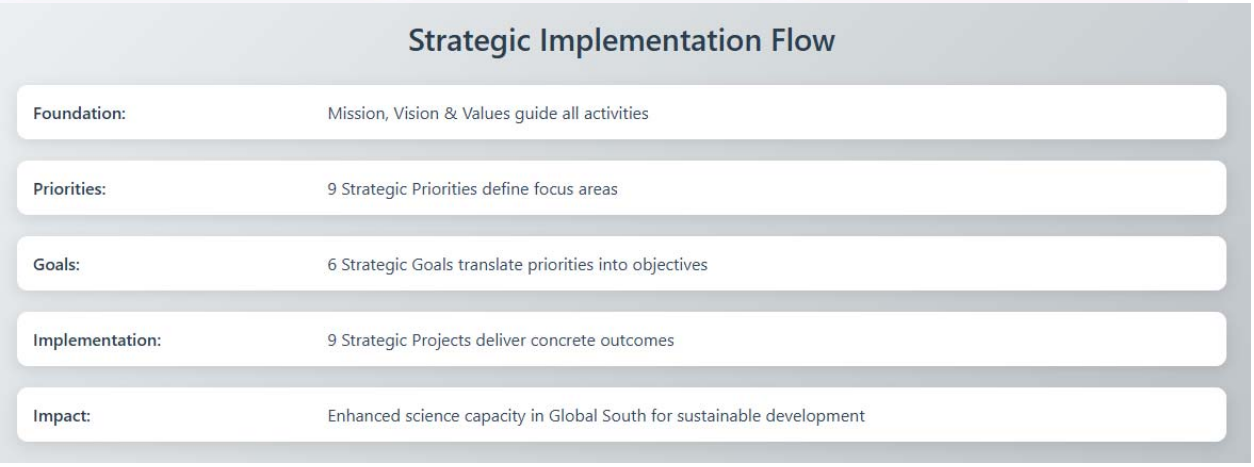
- Implement comprehensive digital management systems.
- Establish integrated monitoring and evaluation framework.
- Create unified brand identity across TWAS, OWSD, and IAP.
- Develop internal communication protocols to improve coordination, knowledge sharing, collaboration across units, and ensuring consistent and correct branding.
- Develop data-driven decision-making capabilities.
- Establish stakeholder engagement platforms.
- Improve transparent governance and accountability mechanisms.
- Implement sustainability and environmental management systems.

Key Partnerships

- ICTP.
- Technology service providers.
- Management consulting firms.
- Evaluation and assessment organizations.
- Governance reform organizations.
- UNESCO and partner institutions.

Strategic Map





Visual Representation of Strategic Connections

Hierarchical structure

The TWAS Strategic Map shows a clear hierarchical flow from foundational elements to specific implementation projects:

Foundation level (red)

- Mission: To advance science in the global South through capacity building and knowledge sharing, fostering sustainable development, innovation and social progress.

- Vision: To be the premier global platform that empowers scientists and institutions in the global South to lead breakthrough research, drive evidence-based solutions, and shape a more equitable and sustainable future for all.
- Core Values: Equity & Inclusivity, Excellence & Empowerment, Integrity & Transparency, Sustainability & Impact, Collaboration & Engagement.

Strategic priorities level (blue) - 9 priorities

1. Expanding scientific capacity and excellence.
2. Strengthening science-policy interfaces and communication.
3. Championing equity, diversity, and inclusion (EDI).
4. Promoting South-South and South-North collaboration.
5. Advancing science diplomacy and peaceful cooperation.
6. Supporting at-risk and displaced scientists.
7. Fostering open science and democratization of knowledge.
8. Elevating scientific recognition and visibility.
9. Empowering emerging leaders via TYAN and leadership initiatives.

Strategic goals level (green) - 6 goals

- Goal 1: Promote Scientific Excellence and Build Capacity in the Global South.
- Goal 2: Advance Science, Technology, and Innovation for Sustainable Development.
- Goal 3: Champion Equity, Diversity, and Inclusion in Global Science.
- Goal 4: Strengthen Science-Policy Integration and Public Engagement.
- Goal 5: Expand South-South, South-North and Triangular Cooperation Networks.
- Goal 6: Achieve Organizational Excellence and Innovation.

Strategic projects level (orange) - 9 selected projects

1. South-South Excellence Fellowship Network.
2. Climate Science and Sustainability Research Initiative.
3. Women in Science Leadership Acceleration Programme.
4. Science Diplomacy Academy.
5. Science in Exile Initiative.
6. Academy Excellence and Global South Scientific Leadership.
7. Early Career Researcher Leadership Incubator.
8. Science Communication and Public Trust Initiative.
9. Organizational Excellence and Digital Transformation

Key connections and relationships

From Priorities to Goals:

- Priorities 1, 8, 9 → Goal 1 (Scientific Excellence).
- Priority 2 → Goal 2 (Innovation for Development).
- Priority 3 → Goal 3 (Equity & Inclusion).
- Priority 2 → Goal 4 (Science-Policy Integration).
- Priorities 4, 5 → Goal 5 (Global Cooperation).
- Priority 6 → Goal 6 (Organizational Excellence).

From Goals to Projects:

- Goal 1 → Projects 1, 6, 7 (Fellowship Network, Academy Excellence, Leadership Incubator).
- Goal 2 → Project 2 (Climate Research).
- Goal 3 → Project 3 (Women Leadership).
- Goal 4 → Projects 4, 8 (Diplomacy Academy, Science Communication).
- Goal 5 → Project 5 (Science in Exile).
- Goal 6 → Project 9 (Digital Transformation).

Annexes

Annex I: TWAS Strategic Planning Process

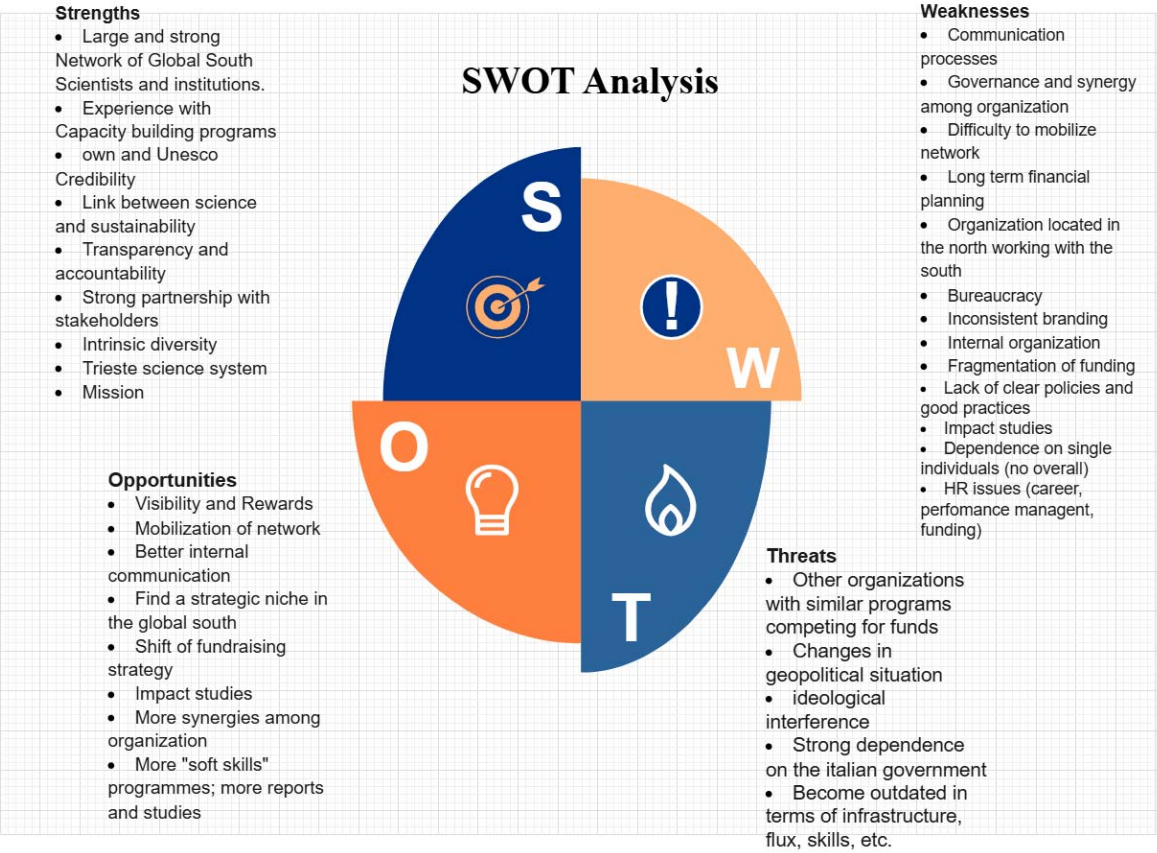
The preparation of TWAS Strategic Plan 7 (2026–2030) was guided by a participatory, inclusive, and evidence-based process that involved:

- Consultations with stakeholders, including TWAS Fellows, Young Affiliates, alumni, partners, and staff.
- Review of global trends, scientific developments, and policy frameworks, including the UN 2030 Agenda for Sustainable Development.
- Evaluation of the implementation of Strategic Plan 6 (2019–2023) and lessons learned.
- Strategic foresight activities, including scenario analysis and risk assessments.
- Approval by the TWAS Steering Committee, followed by endorsement by the TWAS General Meeting.

This process ensured alignment with TWAS's core values and responsiveness to the evolving needs of the global South.

SWOT Exercise

A SWOT exercise took place on 28/04/2025.



Strengths

TWAS benefits from a robust network of global South scientists and institutions, providing a strong foundation for its operations and impact. The organization has built significant experience in capacity building programs, bolstered by its own credibility and UNESCO affiliation. TWAS serves as an important bridge between scientific endeavors and sustainability initiatives, maintaining transparency and accountability in its operations. Its strong partnerships with various stakeholders enhance its reach and effectiveness. The organization's intrinsic diversity is a key asset, complemented by the Trieste science system and a clear mission that guides its activities.

Weaknesses

Several internal challenges hamper TWAS's effectiveness. Internal communication processes are suboptimal, and there are governance issues affecting synergy among different parts of the organization. The network proves difficult to mobilize effectively, and long-term financial planning remains challenging. A notable structural weakness is the geographic disconnect between the organization's northern location and its southern focus. Bureaucratic processes slow progress, while inconsistent branding undermines recognition. Internal organizational challenges, funding fragmentation, and unclear policies further constrain operations. The

organization lacks comprehensive impact assessment mechanisms and faces vulnerability due to dependence on key individuals rather than systems. Human resources issues related to career development, performance management, and funding allocation also present significant challenges.

Opportunities

TWAS has several avenues for growth and improvement. Increasing visibility and developing reward systems could enhance engagement. Better mobilization of its network and improved internal communication would strengthen operational efficiency. Finding a strategic niche within the global South presents a significant opportunity, as does a shift in fundraising strategy. Developing rigorous impact studies would demonstrate value more effectively. Creating more synergies within the organization could unlock new potential, while developing 'soft skills' programmes and producing more reports and studies would expand its contribution to the field.

Threats

External factors pose significant risks to TWAS's continued success. Competition from similar organizations for limited funding creates resource pressure. Changing geopolitical situations and ideological interference threaten operational stability. The organization's strong dependence on the Italian government represents a vulnerability in terms of sustainability. There is also a risk of becoming outdated in infrastructure, methodologies, and skills if adaptation to changing scientific and technological landscapes is not prioritized.

This comprehensive analysis highlights the complex position of TWAS as an organization bridging North-South scientific collaboration, with significant strengths and opportunities but also facing substantial internal challenges and external threats that require strategic attention.