UNESCO
United Nations
Educational, Scientific and
Cultural Organization

ISTIC
INTERNATIONAL SCIENCE, TECHNOLOGY AND
INNOVATION CENTRE FOR SOUTH-SOUTH
COOPERATION UNDER THE AUSPICES OF UNESCO

**KEMENTERIAN SAINS,
TEKNOLOGI DAN INOVASI**
MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION

THE REVIEW REPORT

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THE REVIEW OF THE INTERNATIONAL SCIENCE, TECHNOLOGY AND INNOVATION CENTRE FOR SOUTH-SOUTH COOPERATION (ISTIC) UNDER THE AUSPICES OF UNESCO AS A CATEGORY II CENTRE IN KUALA LUMPUR, MALAYSIA

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Acronyms and Abbreviations

ADB	Asian Development Bank
AfDB	African Development Bank
ASM	Academy of Sciences Malaysia
CAE	Chinese Academy of Engineering
CARISCIENCE	The Network of R&D and Postgraduate Programmes in the Basic Sciences in the Caribbean
CIDB	Construction Industry Development Board Malaysia
COREN	Council for the Regulation of Engineering in Nigeria
EBK	Engineers Registration Board of Kenya
ERB	Engineers Registration Board Tanzania
ESCI	Engineering Staff College of India
FU	The Future University, Sudan
IAP SEP	InterAcademy Partnership's Science Education Programme
IBSE	Inquiry-Based Science Education
ICESCO	The Islamic World Educational, Scientific and Cultural Organization
ICT	Information and Communication Technology
IEM	The Institution of Engineers, Malaysia
IKCEST	International Knowledge Centre for Engineering Sciences and Technology, under the auspices of UNESCO
IRIS	Isfahan Regional Centre for Technology Incubator and Science Park Development
IsDB	Islamic Development Bank
ISM	Institut Sosial Malaysia
ISTIC	International Science, Technology and Innovation Centre for South-South Cooperation
ISTT	Isfahan Science and Technology Town
KISR	Kuwait Institute for Scientific Research
KISTEP	Korea Institute of Science & Technology Evaluation and Planning
LAMAP	La main à la pâte Foundation
MESTECC	Ministry of Energy, Science, Technology, Environment and Climate Change

MIMOS	MIMOS Berhad
MNCU/NATCOM	Malaysian National Commission for UNESCO
MOE	Ministry of Education Malaysia
MOF	Ministry of Finance Malaysia
MOSTI	Ministry of Science, Technology and Innovation, Malaysia
MoWFCD	Ministry of Women, Family and Community Development
MTDC	Malaysian Technology Development Corporation
NAM S&T Centre	Centre for Science and Technology of the Non-Aligned and Other Developing Countries
NCSTE	National Centre of State Science and Technology Evaluation
NGOs	Non-Governmental Organizations
NIEW	NAM Institute for the Empowerment of Women Malaysia
OBOR	One Belt One Road
OCE	Office for Climate Change
PAPC	Prima Asia Pacific Consulting
PETRONAS	Petroliam Nasional Berhad
PSF	Pakistan Science Foundation
R&D	Research and Development
RECSAM	Regional Centre for Education in Science and Mathematics
SEAMEO QITEP	Southeast Asian Ministers of Education Organization, Regional Centre Programme for Quality Improvement of Teacher and Education Personnel in Science
STEM	Science, Technology, Engineering and Mathematics
STI	Science, Technology and Innovation
TBP	The Business People Limited, Nigeria
ToR	Terms of Reference
TWAS	The World Academy of Sciences
UN SDGs	United Nations Sustainable Development Goals
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Science and Cultural Organization
UNOSSC	The United Nations Office for South-South Cooperation

USAINS	USAINS Holding Sdn Bhd
USM	Universiti Sains Malaysia
UTM	University Technology Malaysia
YACHAY	Yachay - City of Knowledge

Executive Summary

This report reflects the accomplishments of the International Science, Technology and Innovation Centre for South-South Cooperation (ISTIC) under the auspices of UNESCO over the last five years. ISTIC represents the true spirit of South-South Cooperation and it has reinforced the existing regional and international networks of science and technology policy and promoted new partnerships through development of mutually beneficial initiatives with existing organizations. The commitment of the Malaysian Government through the Ministry of Science, Technology and Innovation (MOSTI) to the sustainability of ISTIC is evident from the strong support it has received. In addition, ISTIC has also received strong support from its host organization, the Academy of Sciences Malaysia (ASM), which is also one of the main strategic partners of many ISTIC's programmes and activities.

In conformity with the Terms of Reference (ToR) provided by UNESCO, the undertaken review exercise was focused on ascertaining the credibility of ISTIC as a Category II Centre and as a basis for renewing its Agreement between the Government of Malaysia and UNESCO on ISTIC. The evaluation has been conducted in October until the end of December 2020. Due to the COVID-19 pandemic, it was not possible to conduct an evaluation in presentia. Therefore, online interviews with the critical internal and external stakeholders were done to gather the required information.

It has been found that ISTIC, with a network of seven-seven local and international partners, has positive impacts on over One Thousand seven Hundred (1,700) individuals. To achieve this on an average budget of Five Hundred Thirty Thousand US Dollars (USD 530,000) per year is a remarkable feat.

The success and achievement of ISTIC are largely due to the commendable efforts of the Chairman of ISTIC Governing Board and the Director of ISTIC. Their personal commitment, dedication and deployment of their vast local and international networks have, in no small margin, helped to account for the overall success of such a small organization over the past five years. It also earned the support of a small though very dedicated, effective, and highly

professional team. However, this has also been made possible with the high-level support received by ISTIC from UNESCO, both at national and international levels.

In spite of achieving these successes, there is a need to address the accompanying areas toward further expanding and deepening ISTIC's footprint across the South-South:

1. Implement a focused progression plan to ensure its sustainability;
2. Consolidate on the accomplishments of the programmes and activities with strong support system;
3. ISTIC to seek extrabudgetary funding and develop a strategy to attract donor funds on a regular basis. This will allow ISTIC to have a greater flexibility and control over the planning and execution of its programmes. ISTIC should also have more collaborative partners for its programmes which will also support on the financial aspect. Focus on extending funding sources from predominant local organization like Petroliam Nasional Berhad (PETRONAS) and international organizations of World Bank, ICESCO, Islamic Development Bank (IsDB), African Development Bank (AfDB);
4. ISTIC deserves more autonomy as a Category 2 Centre and part of UNESCO's intention. Presently, ISTIC has limited authority to exercise its capacity to full potential;
5. ISTIC needs more support on human resources and staff career development including staff exchange programmes with other Centres;
6. Emphasize the programmes on Open Science, Mobility of Engineering Practitioners and Digital Technology. Upgrade core programmes with new version and emphasize relevant programmes to post-COVID-19 situation (ICT and digital technology);
7. Plan forward to go beyond the Capacity building and Training for more impact and tangible results for South-South countries.

The panel believes that ISTIC is a highly important Category 2 Centre for South-South Cooperation in STI. It has a critical role to play as the leading international collaborative platform for science, technology and innovation policy in developing countries. This review exercise is concluded that ISTIC has adhered to the requirements of its Founding Agreement and recorded many triumphs. Therefore, **the Review by the external evaluator recommends renewing for another six years the Agreement between UNESCO and the Government of**

Malaysia on International Science, Technology and Innovation Centre for South-South Cooperation (ISTIC) as a Category 2 Centre, under the auspices of UNESCO. This will provide ISTIC the opportunity to implement this report's recommendations while consolidating and expanding on its accomplishments in advocating the progression of STI in South-South countries.
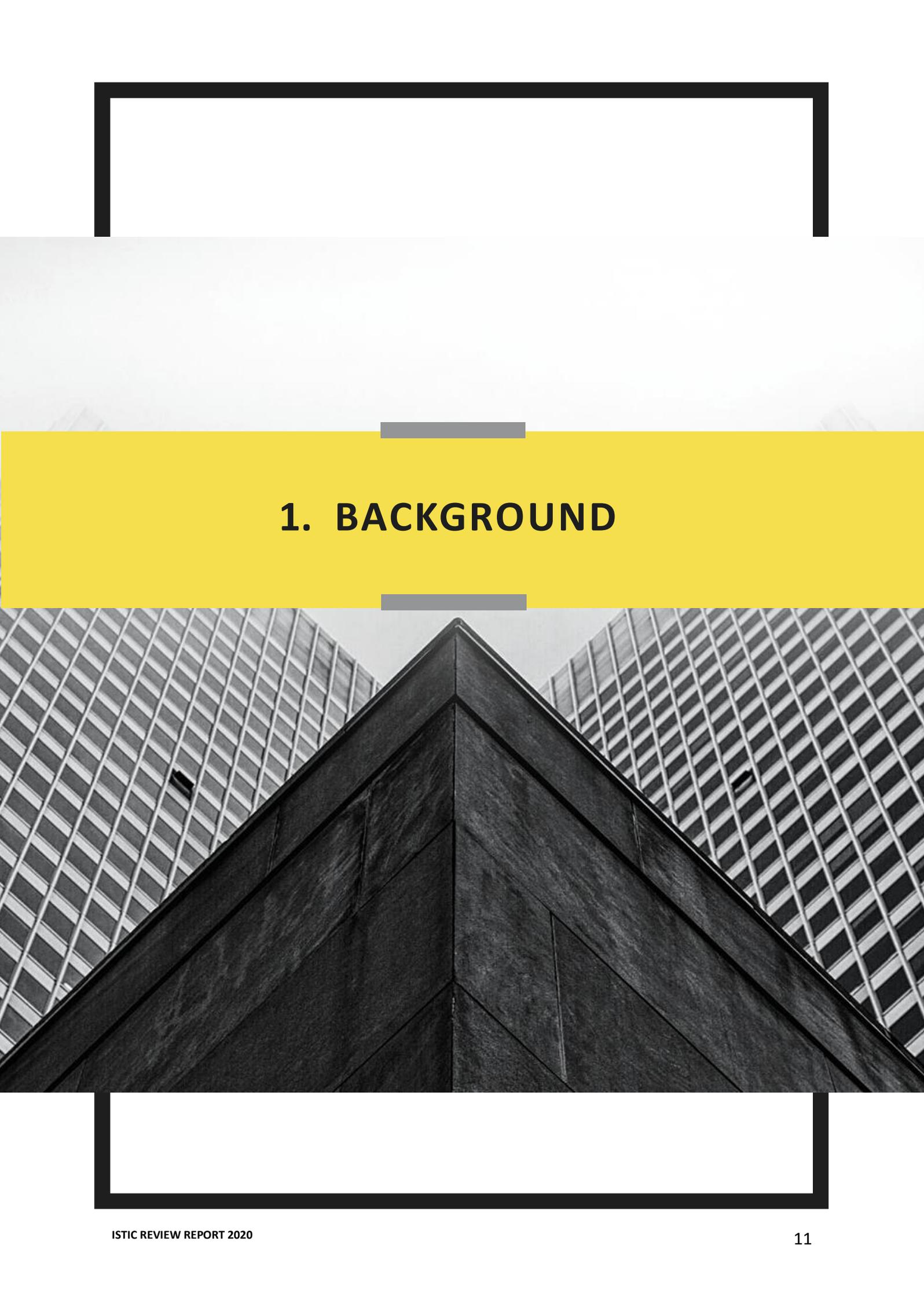
1. BACKGROUND

Background

The International Science, Technology, and Innovation Centre for South-South Cooperation (ISTIC) under the auspices of UNESCO has been reviewed in accordance with its understanding towards renewing its status as a Category II Centre. In recent past 5 years, ISTIC has been dynamic, and sometimes playing a leading role in organizing international cooperation and exchange activities concerning Science, Technology and Innovation (STI) in South-South countries. In doing so, it has performed in line with the broader strategic direction of UNESCO on the importance of grassroots innovation as a source of solutions that meet the needs of developing countries.

This review was based on the need to ascertain the grounds for the renewal of the Agreement between the Government of Malaysia and UNESCO on ISTIC which elapsed in September 2021. In accordance with the review Terms of Reference (ToR) – (Appendix I)- this report includes the findings of the independent evaluator from the documents provided by ISTIC, responses of online interview with stakeholders and survey instrument (Appendix IV and V) distributed to individuals who have had one form of relationship or the other with ISTIC over the past five years. Regarding findings, it is shown that ISTIC has engaged in activities geared towards establishing links between academia and industry in participating countries, addressing networking and collaborative research and development (R&D) and training programmes at the regional and international level, and facilitation of information exchange and dissemination.

Objectives

The fundamental target of the review is to find out through external processes, the advancement recorded by ISTIC over the course of the most recent five years through its programmes in accordance with its agreement. More explicitly, the review is aimed to:

1. The alignment of the activities effectively pursued by the Centre with those set out in the Agreement signed with UNESCO;
2. The relevance of the institute/centre's programmes and activities for achieving UNESCO's strategic programme objectives and sectoral or intersectoral programme priorities and themes, as defined in the Agreement;

3. The effectiveness of the institute/centre's programmes and activities for achieving its stated objectives;

4. The quality of coordination and interaction with UNESCO, both at Headquarters and in the field (including UNESCO field offices and UNESCO National Commissions), and other thematically related category 1 and 2 institutes/centres with regard to planning and implementation of programmes;

5. The quality of partnerships with government agencies, public/private partners and donors;

6. The nature and quality of organizational arrangements, including management, governance and accountability mechanisms;

7. The human and financial resource base and the quality of mechanisms and capacities, as well as context-specific opportunities and risks for ensuring the sustainable institutional capacity and viability;

8. The process of mobilizing extra budgetary resources and to what extent such extra budgetary funding is aligned to the strategic programme objectives of UNESCO.

About ISTIC

ISTIC has acted on three levels to build a culture of innovation around STI issues in South-South countries in line with the Founding Agreement, establishing it as an organization under the auspices of UNESCO. The Government of Malaysia and UNESCO renewed the agreement on the International Science, Technology and Innovation Centre for South-South Cooperation (ISTIC) in Kuala Lumpur, Malaysia on 7th September 2015 for continuing the operation of the Centre for six years. The agreement is a period of six years and shall be renewed upon common agreement based on the results of the renewal assessment.

1. First, it seeks to facilitate the development of innovative systems of key actors, a lack of an appropriate innovation system to ease interaction is a major challenge in promoting technological innovation in developing countries. ISTIC has made an attempt to fill this void through different activities such as conferences and workshops to foster investment in advanced technology and

promote the development of affordable technology.

2. Second, given that building innovative systems in developing countries is a complex task that involves the formal sector (enterprises, universities, research institutes, the government, financial institutions, and Non-Governmental Organizations - NGOs) and the informal sector, including grass roots inventors as well as local and indigenous knowledge, capacity building and development of a network of up-and-coming talent for innovation have been performed.

3. Lastly, keeping with the overall strategic emphasis of UNESCO, ISTIC has provided support for the development of ideas, adopting policies and creation of country programmes in bridging the formal and informal sector which has sometimes been difficult in circumstances of high social disparities. ISTIC has, therefore, worked with partners from different regions among the South-South countries towards generating excitement about policies and programmes around STI such as innovation ecosystems for sustainable development.

After eleven years of practice, ISTIC has truly become an international platform for South-South Cooperation in STI, focusing on seven areas with high priorities, including:

1. STI Policy for Development

2. Inquiry-Based Science Education (IBSE) and Science, Technology, Engineering and Mathematics (STEM) Education

3. Technopreneurship

4. Women in Science, Technology and Innovation

5. Maintenance of Infrastructure

6. Digital Technology

7. Climate Change Education

2. REVIEW SCOPE

The main purpose of the review is to inform the decision-making process on the renewal of the Category 2 status of the Centre. The findings of the review will be included in the Director-General's report to the Executive Board with her recommendations as to whether the designation as Category 2 Centre under the auspices of UNESCO should be maintained, terminated or not renewed.

The external evaluator performs the following tasks:

a. The review framework (inception paper) highlighting, among other details, the methods to be adopted by the evaluator, and the time schedule for completing the review, no later than 15 October 2020.

b. The draft review report, which will be circulated among stakeholders for comments, no later than 15 November 2020.

c. The final review report in which comments submitted by the various stakeholders would have been considered and appropriately incorporated by the external evaluator, no later than 31 January 2021.

The final report should include but not necessarily be limited to, the following elements:

• Executive Summary (maximum 3 pages)

• Purpose of the review

• Scope of evaluation

• Methodology

• Findings (given in terms of achievements and challenges)

• Recommendations (including a formal recommendation on (dis)continuation of the Category 2 status)

• Annexes (including interview list, data collection instruments, key documents consulted, Term of Reference, etc.).

3. REVIEW METHODOLOGY

The review has been conducted in October until the end of December 2020. The applied methodology consolidated both the narrative as well as the subjective frameworks of rating which gave the measurement scores to each and every assessment criteria in accordance with the data given by ISTIC and those collected through interaction with not only its institutional but its individual partners.

The accompanying activities are to form the core aspects of the review:

1. A framework (Reference appendix section II) of review was set up to give a guideline to the external evaluator specialist towards practicing their obligations as per the review (ToR) and covers all the arranged review measures focusing especially on the methodology embraced including the criteria for assessment.

2. Desktop reviews of existing reports and documents that contained the accompanying:

   - The Agreement Between the Government of Malaysia and UNESCO on ISTIC Category 2 Centres;

   - Annual progress reports, Yearly reports of projects and task results/ outcomes;

   - Minutes of Administering/Governing Board meetings;

   - Yearly Financial Report;

   - Key Publications;

   - List of staff;

   - List and contact details of donors and project partners;

   - List and contact details of the stakeholders;

   - Support provided to the Member States;

   - Available audit and evaluation reports;

   - Account of networking achievements linked with other thematically related category 2 institutes/centres and UNESCO's programmes.

3.   Due to the COVID-19 pandemic, it was not possible to conduct an evaluation in presentia. Therefore, virtual Zoom online platform and phone interviews have been used to collect the information from the ISTIC's personnel, stakeholders and beneficiary groups or persons.

4.   A survey of the partners and recipients of ISTIC programmes and activities over the South-South nations that have had a consistent engagement and predictable commitment with ISTIC through the utilization of a questionnaire. Online questionnaires/surveys with ISTIC's personnel, stakeholders and beneficiary groups or persons.
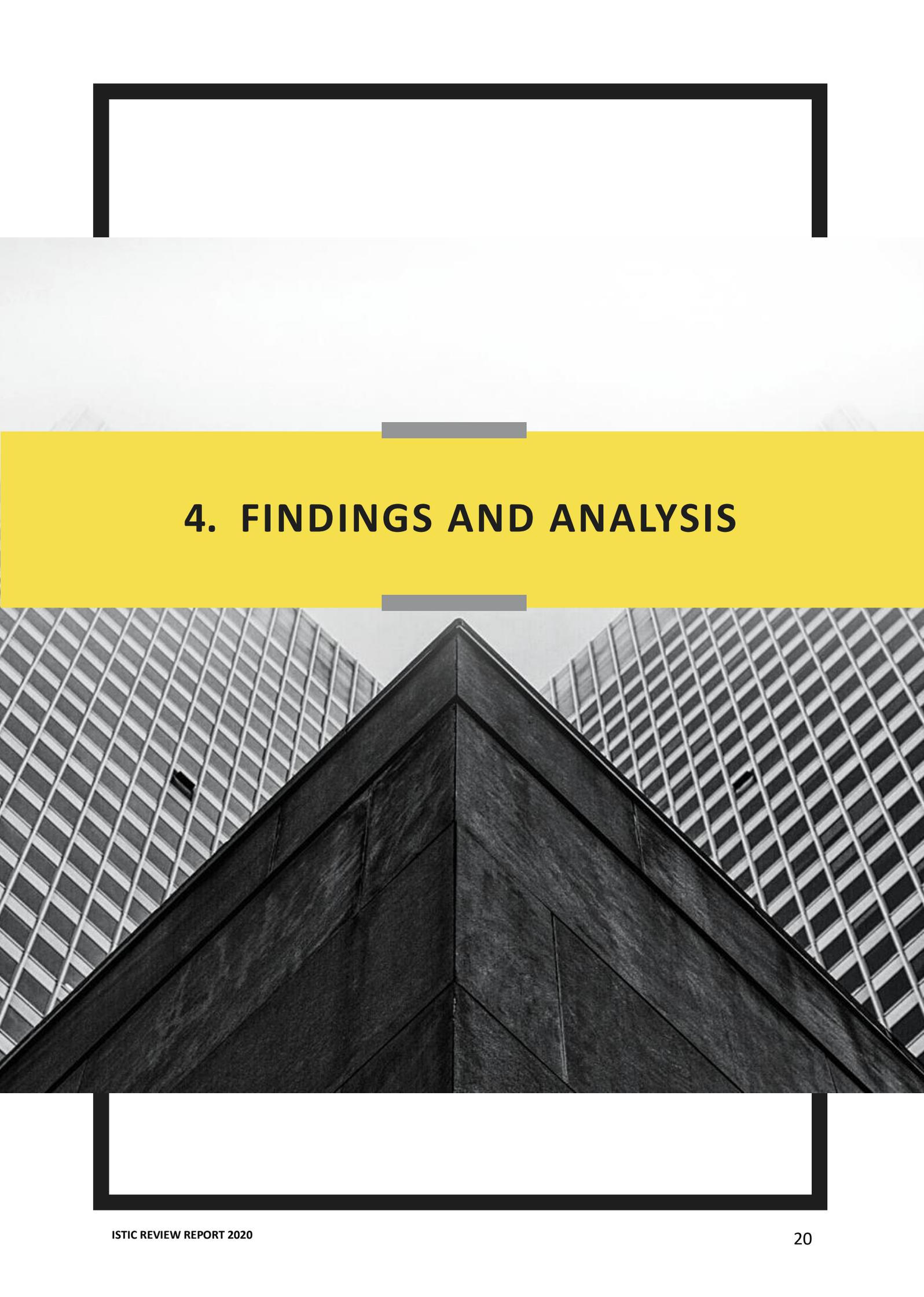
4. FINDINGS AND ANALYSIS

Conducted through the qualitative and subjective tools as illustrated above, the review provided imperative data to give a thorough picture of the ISTIC's accomplishments over the last five years considering possible areas of improvement. The strategic focus of ISTIC has already been set regarding the Agreement between UNESCO and the Government of Malaysia on ISTIC and it has additionally given guidance on its programmes and activities. It has accordingly served as a kind of reference point in all programmes and activity reports of ISTIC. The survey was done through questionnaires and 86 stakeholders had participated. The findings, based on the results of the questionnaire will cover as follows:

Engagement with Key Stakeholders: Based on the continuous review of ISTIC programmes and activities, it provided a platform for the engagement of the stakeholders to legitimately comprehend the effect of ISTIC endeavours through the point of view of partners. The engagement was led in two different ways: online interviews and discussions with a wide range of key partners straight forwardly engaged with ISTIC and a questionnaire disseminated across institutional partners and beneficiaries concerning the ISTIC programmes and practices. According to the findings, a positive impact of ISTIC on its partners can be seen. It provided clear and insightful understandings of the Organization Effectiveness of ISTIC through the commitment of its internal stakeholders. Its existing core values underpin its work and being connected with its partners and beneficiaries. Its performance is also relevant to diversified stakeholders' needs and level of feedback on its programmes is relatively good. The engagement approach to key stakeholders was stated in Figure 1.
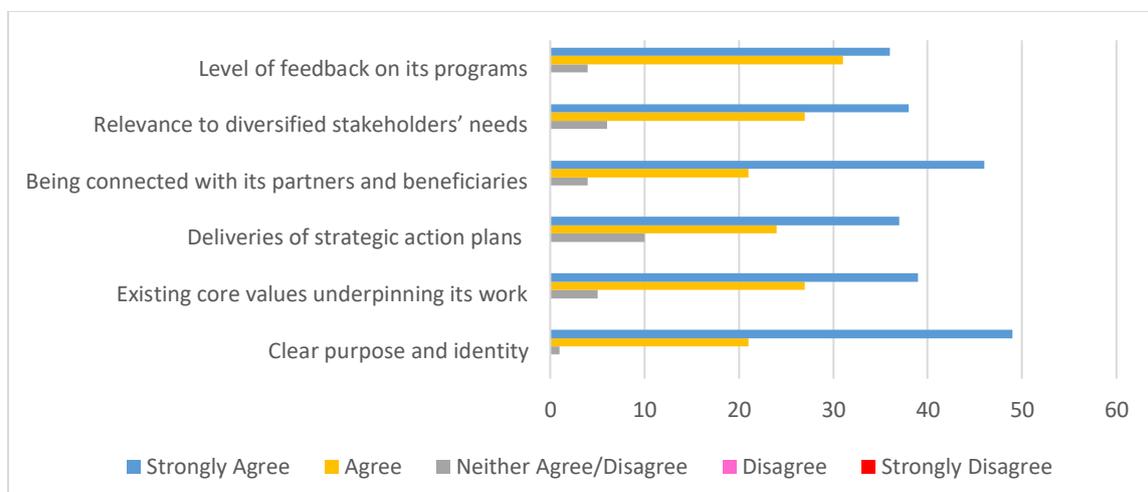

Figure 1: Engagement with Key Stakeholders

Programmes and Services: In terms of programmes and services, ISTIC has sorted out various programmes and services across nations and most of their initiatives were said to be the development of the STI policies across South-South countries. In this regard, formulating and implementing policies has direct linkage with participants in their own countries. Based on the survey results, most partners have impressed on its activities. Programmes and activities are well-planned and ISTIC conducts its activities focusing on getting the best results for partners. Its programmes and activities have been appropriate to fulfil the needs of the beneficiaries. It has also linked holistically with other organizations. In the previous five years, ISTIC has conducted key publications. Figure 2 describes the status of ISTIC's programmes and services based on the survey results.
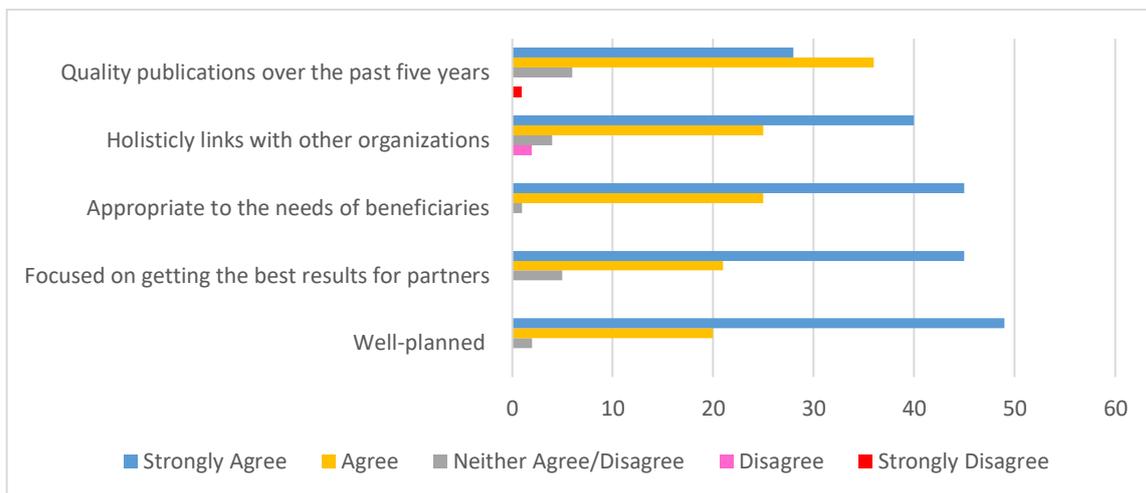

Figure 2: Status of ISTIC's Programmes and Services

ISTIC's Performance in Community Interactions: According to the response of the participants, ISTIC has a good interaction with host community and advocacy for structural changes in South-South countries. It also indirectly contributes to social development beyond direct impact on STI. Its best practices are shared among local communities and South-South countries and it strengthens the engagement with communities to promote STI at the grassroots level. Its overall performance in community interactions can be clearly seen in Figure 3.
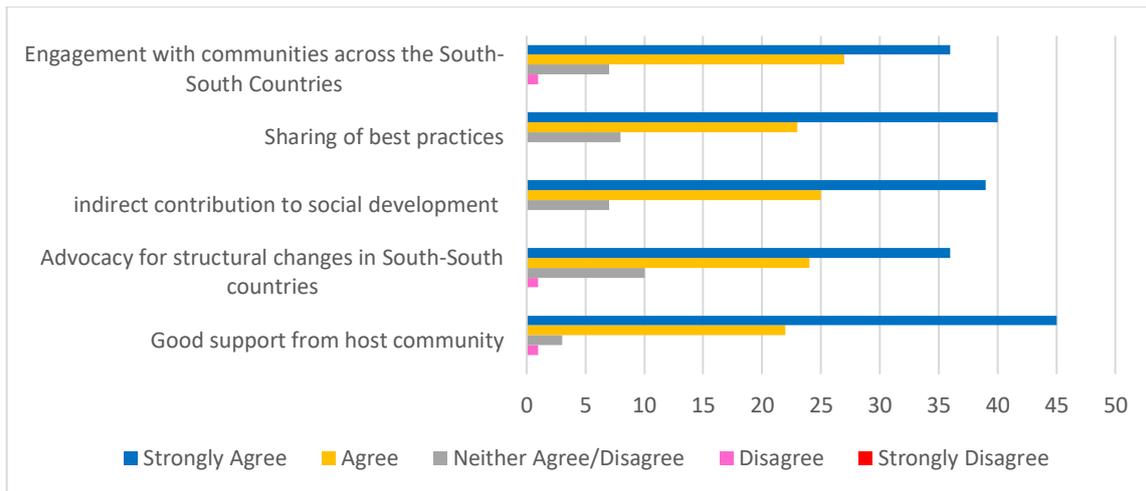
Figure 3: ISTIC's performance in community interactions

The Organizational Systems, Processes, and Procedures of ISTIC: Its efforts over the past five years have enhanced in advancing Science, Technology and Innovation within South-South countries. The evidence of this achievement has been made visible through the survey results (Figure 4). It continually focused on amplifying the achievements and capacity enhancement of internal stakeholders, level of teamwork and improved management processes. Yearly review of its programmes and activities has been conducted and amended appropriate policies and framework for internal stakeholders' actions.
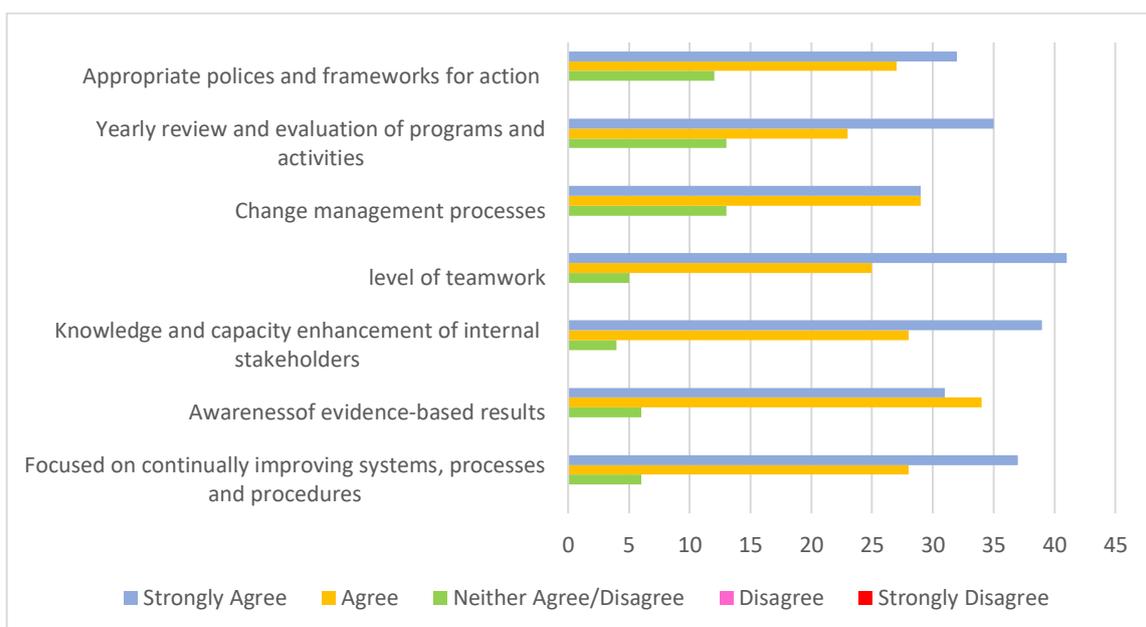
Figure 4: Organizational Systems, Processes, and Procedures of ISTIC

**ISTIC and Participants:** For this category, altogether nine questions are formulated to know the actual performance of ISTIC and its participants. According to the response of the partners, almost all respondents have agreed that it has a positive impact on their activities and performance, saying that it has a clear team of engagement and robust communication has implemented in the ISTIC network. Conducting periodic meetings or events ensured ISTIC to actualize its continuous agreement and communicate its activities and programmes with partners and beneficiaries at the interval. In addition, almost all respondents agreed that ISTIC implemented its programmes and activities based on the recommendations and outcomes of meetings, but a few respondents were not aware of it. Almost two-third of respondents agreed that ISTIC conducted follow-up activities concerning its material supports and awards in the advancement of STI in South-South countries and its responses are timely through technology-based channel.
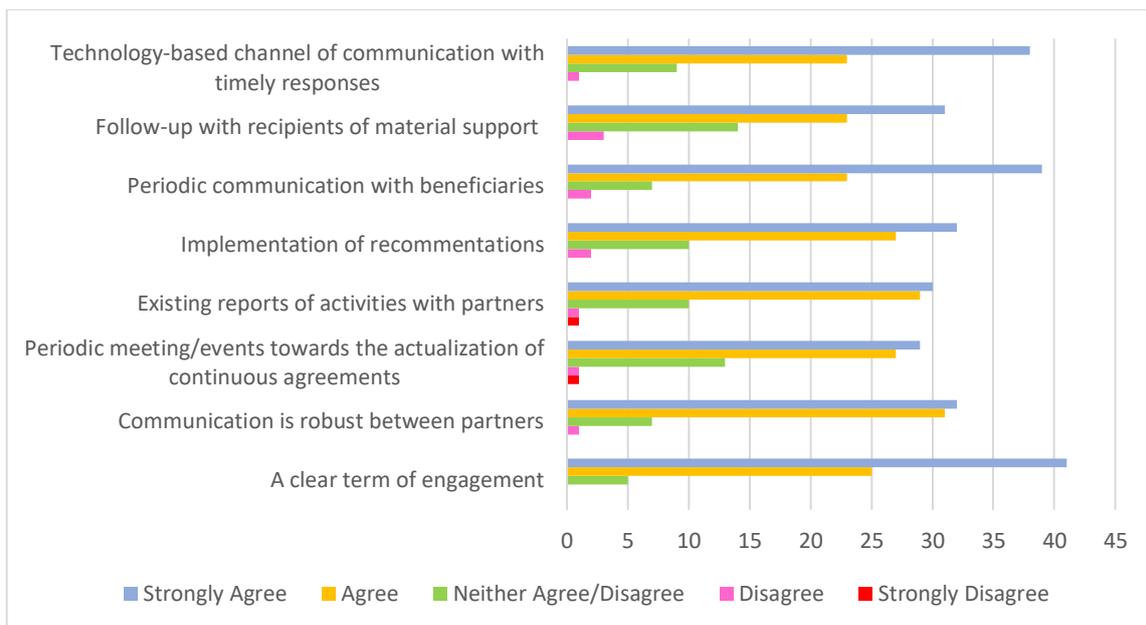

Figure 5: ISTIC and Participants

The Programmes and Activities

According to the results of the survey and interview with ISTIC's stakeholders concerning its different programmes and activities, ISTIC has strengthened its activities and programmes and it has inspired its partners and beneficiaries. ISTIC has good engagement with its stakeholders and good coordination of the work of several partners. Its programmes and activities are well-planned and well-organized so it is helpful for its partner's and beneficiaries to train excellent capacity building for researchers, innovators, and technologists. In addition, trainers and facilitators are professionalized, and have a clear vision and mission of ISTIC programmes and activities. ISTIC also addressed the issues concerning its programmes and activities by collecting and analysing feedback from beneficiaries.

Interaction on Agreement between the Government of Malaysia and UNESCO on ISTIC

ISTIC is the only Category 2 Centre in the South-South Corporation under UNESCO. Their programmes/workshops of IBSE/STEM, STI policy, Women in STI, Maintenance of Infrastructure, Technopreneurship and Digital Technology are fully aligned with the UNESCO strategic programmes objectives (C/5) and beyond and even the Climate Change and Digital Technology are included. ISTIC is contributing to natural science education as well as social and human sciences, covering UN SDG 4, 5, 8, 9, 13 and 17. The organization also focused on Women in Science to eliminating gender inequality and helping South-South countries in social inequality.

Therefore, ISTIC programmes and activities are totally relevant, achieving UNESCO's sectoral and intersectoral priority and themes. ISTIC's functions involve adopting innovative approaches to support science and education in South-South and other countries; promoting exchange of experience and best practices; supporting the exchange of researchers and scientists among developing countries. ISTIC is highly appreciated by the UNESCO and all other regional science bureau, member states and Academy of Sciences Malaysia due to its tremendous efforts in its programmes and activities.

Partners

During the previous five years, ISTIC has made a remarkable development of institutional relationships with seventy-seven (77) strategic partners around the world (Appendix III). Organizations from developed and developing countries involved in UNESCO programmes or its nodal centres and Centre of Excellence in STI and Engineering have been the partners of ISTIC. Therefore, it can be said that the findings revealed a strong partnership between ISTIC and local organizations underlining its effect on STI issues in the host nation.

Project and Project Outcomes

The ISTIC programmes, including partners, number of participants and times conducted are shown in Table 1. ISTIC has sorted out various programmes and practices across nations, like China, Indonesia, Republic of Korea, France, Pakistan, Thailand, Iran, Sudan, Egypt, South Africa, India, Seychelles, United Arab Emirates, Chile, Tehran, Mexico, Peru, Ecuador, Tunisia, Kazakhstan, Nigeria, United States of America, Hungary, Vatican City and Malaysia. Most of their initiatives were said to be the development of the STI policies and IBSE/STEM across South-South countries. In this regard, formulating and implementing policies has direct linkage with participants in their own countries working relationships.

According to the high-level policy making cadre in participating countries, participation policy has been drawn, expecting that their ideas and lessons learnt can be stepped down the government can in formulating and implementing appropriate policies. From the observations, the programmes of ISTIC are experienced programmes and updating to real-time with accumulated know-hows.

Table 1: ISTIC Programmes and Activities Summary

Programme	Number	Participants	Partners
STI Policy	10	230	KISTEP; PAPC; MESTECC; ICESCO; IsDB; UTM; NAM S&T Centre
Women in STI	5	340	UNESCO; UN Women; MoWFCD; NIEW; MESTECC; ICESCO; IsDB

IBSE/STEM	10	432	LAMAP; RECSAM; FU; IAP SEP Global Council; MOE; MNCU; QITEP in Science
Maintenance of Infrastructure	5	175	ESCI; IEM; CIDB; EBK; ERB; COREN
Technopreneurship	7	191	USAINS; ICESCO; IsDB; TWAS; FU; KISR; CARISCIENCE; NCSTE; MTDC; YACHAY; IRIS; ISTT
Digital Technology	3	126	IKCEST; MIMOS; CAE; CARISCIENCE
Climate Change Education	2	187	OCE
Total	**42**	**1681**	

Funding and Financial Position

Funded and supported by the Government of Malaysia, ISTIC has office space, necessary equipment, and consumables. This has been used as displayed in its budgetary reports throughout the previous five years on programme activities, contingencies and recurring costs for staffing. Its capacity enlarged as a government-sponsored organization that received a total of USD 1,810,605 from the Malaysian government. In addition, it has received financial support from the NAM Institute of the Empowering Women (NIEW), Malaysia National Commission for UNESCO (MNCU), Ministry of Energy, Science, Technology Environment and Climate Change (MESTECC), Institut Sosial Malaysia (ISM) and Ministry of Science, Technology and Innovation Malaysia (MOSTI). Regarding ICT facilities, office space, vehicles, and honorarium for speakers and facilitators, MOSTI has mostly diverted the financial support.

The Islamic Educational, Scientific and Cultural Organization (ICESCO), Islamic Development Bank (IsDB), The World Academy of Science (TWAS), UNDP (Bangladesh) and IAP SEP have also provided further financial support. Another financial inflow comes through the registration fees from participants at some ISTIC's programmes. Despite the technology

moving at a faster pace and the world's socio-economy evolving, ISTIC needs to upgrade and expand programmes in order to fulfil the changes; the budget allocation of the Malaysia government is descending year by year.

The Fulfilment of Previous Stakeholders' Concern

The previous review report highlighting the following concerns has been fulfilled.

- The succession plan of ISTIC has been taken care of and it is no longer a concern. The gap can be easily filled up with the help of host's support in the future by having its representative in the governing board and also to ensure the continuity of ISTIC's internal efficiency as well as external effectiveness.

- ISTIC as a compact organization operating with defined budget, the programmes are prioritised with planning in advance and the feedbacks and results are observed as justified. And it is also obvious that the new programmes following global trends such as climate change education and digital technology had been introduced.

- To catch up with updated information and Communication Technology (ICT), the new position of IT officer has been appointed.

Stakeholder Commendations

a. Such a high level of achievement has been brought about by the efforts of the Chairman of ISTIC Governing Board and the Director. ISTIC's Governing Board Members embody regional diversification, influential political and professional individuals with broad network covering beyond South-South countries of the Asia-Pacific and Africa and also developed countries like the Republic of Korea and even France.

b. ISTIC worked in close partnership with China, in innovation and in the implementation of capacity-building initiatives with the Republic of Korea for example.

c. ISTIC is a great organization with vast network within South-south countries, bringing together international partnerships. It is a catalyst to bring Science, Technology and Innovation (STI) to the developing countries. The leadership and Governing Board are excellent with outstanding and productive, committed team members, bringing the

accomplishment of its mission as intended in the Founding Agreement between UNESCO and the Malaysian Government.

d. ISTIC has a great support from the Government of Malaysia and its host organization as well as UNESCO.

e. ISTIC's reputation with UNESCO reflects Malaysia's importance with UNESCO.

f. ISTIC's small pool of staff displayed efficiency and effectiveness with multitasking by an individual as well as working as a team. Clarity in communication with partners is well demonstrated. ISTIC's well-organized programmes and well-planned activities are the testimony of the competencies of its staffs. The layered staffs are also well-trained and very receptive to the visitors received and engaged.

g. ISTIC over the past 11 years has made significant contribution to the development of STI especially for the South-South countries. It has played a significant role in STEM education, an effort which is well-recognized by ASM. ISTIC has also implemented many collaborative R&D training programmes and workshops which had benefited many. It also has a strong presence and a strong network in South-South countries. This is how ISTIC contributed to the UNESCO strategic programme objectives.

h. ISTIC's IBSE/STEM programmes are one of ISTIC's highest achievements. ISTIC has displayed the right kind of collaboration in this endeavour.

i. ISTIC is gaining momentum in having the right kind of collaboration to their programme internationally.

j. Online virtual trainings/workshops are preferred, which are in line with new normal situation. It is also cost-effective and beneficial for both host countries as well as South-South countries to attend more conveniently.

k. From the perspective of information dissemination and promotion of ISTIC's publication, ISTIC should expand its network at all level and maximise their current partners to assist them increase awareness of their existence including establishing a communication plan with the aim to sustain their presence as Category 2 Centre.

Stakeholder Concerns

In terms of the stakeholder concerns about ISTIC, six areas of concerns are mentioned: the financial resources; follow-up programmes; extended autonomy; human resources; government support; upgrading core programmes.

1. **Limited financial resources:** In the current global framework, funding everywhere is a challenge especially now in the post-COVID-19 recovery phase where the priorities of Government are shifting. ISTIC's primary source of funding is from the Malaysian Government. It needs to increase its efforts in seeking secondary source of income to sustain and expand its programmes and activities.

2. **Monitoring and evaluation of programmes and activities**: Support system upon completion of programmes and activities need to be in place to follow up on the outcome, impact and effectiveness of its services and to continue the partnerships for the long run.

3. **Enhanced and revitalized roadmap:** After almost twelve years of establishment, ISTIC has to reinvent itself to stay relevant and competitive. It needs to reshape itself by having a strategic plan with clear impact of its programmes. It requires building on, and robustly strengthening the foundation laid in the current programmes. Efforts also need to continue to align ISTIC in the national agenda to enable the host government to also benefit from the organization.

4. **Extended autonomy**: ISTIC deserves more autonomy as a Category 2 Centre and part of UNESCO intention. Presently, ISTIC has limited authority to exercise its full capacity potential.

5. **Human resources**: There is a need for staff to further professional development and capacity building.

6. **Government support** and cohesiveness in the coordination and interaction between the Academy of Sciences Malaysia (ASM) and ISTIC.

7. **Upgrading the Core programmes**: Its core programmes need to be upgraded with new version and emphasize relevant programmes to post-COVID-19 situations (ICT and digital technology).
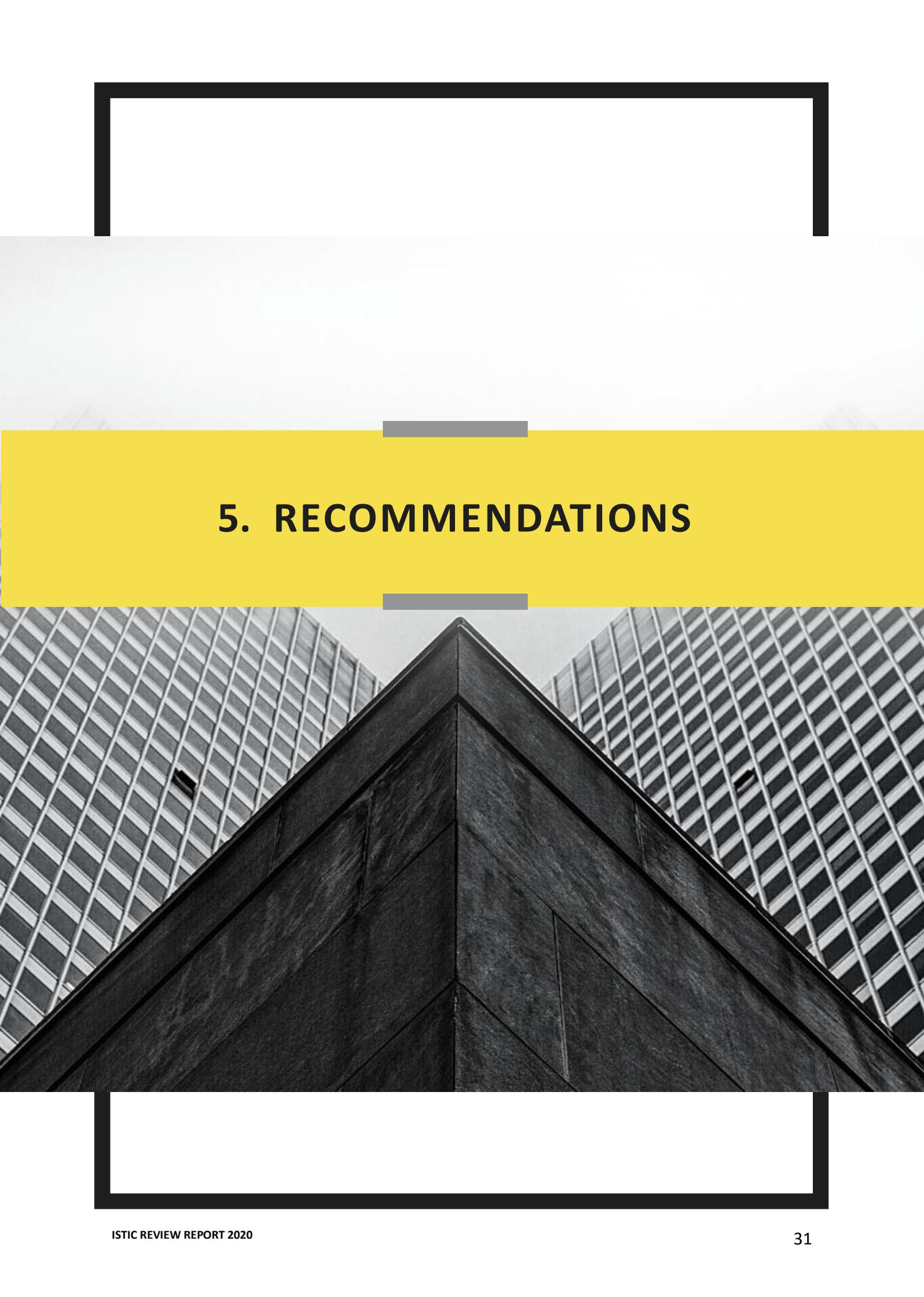
5. RECOMMENDATIONS

In accordance with ISTIC's mandate following from the Founding Agreement with UNESCO, its efforts over the past five years have enhanced in the areas of advancing Science, Technology and Innovation within South-South countries. The evidence of this achievement has made visible for the outcomes and outputs of its programmes and activities. The Government of Malaysia also understands very well that social and economic inequality in the neighbouring countries will hinder Malaysia's development. Therefore, the use of "prosper-thy-neighbour" policies were introduced since the late '90s and the ISTIC's programmes and activities are well in line with the above policies. **Based on the review, the external evaluator recommends to renew, for another six years, the agreement between UNESCO and Government of Malaysia International Science, Technology and Innovation Centre for South-South Cooperation (ISTIC) as a Category 2 Centre, under the auspices of UNESCO.** However, ISTIC needs to make further improvement in its impact and increase its footprint in the South-South countries in as much as STI is concerned. The following recommendations are for implementing the robust policies of ISTIC.

ISTIC 1.0 to 2.0

Currently, ISTIC is strengthening its context by establishing more linkages between academia and industry and facilitating information/technology transfers, information dissemination with the big network of ISTIC. The centre is also addressing some specific problems faced by developing countries such as the environment, sharing data among scientists in South-South countries. In order to transform into ISTIC 2.0, ISTIC needs to improve more collaborative research between industry and academia.

ISTIC should establish STI Economy Framework to bring emerging technology to the industry. By doing so, there will be more bring-in industrial participation in R&D into the South-South countries. Based on market and research-driven, that will result in local large and multinational companies in South-South countries assisting ISTIC, reaching out and sharing information from other South-South countries. This approach will increase the experimental development research and attract the organizations with similar kind of vision and aims to have leverage on sharing of local and other South-South countries' knowledge to commercialize and come up with new products and services. ISTIC can play a role as the

catalyst to help developing countries to step to the next level, in turn, easing the extrabudgetary funding to ISTIC.

With a strong network and experience, ISTIC can scan and bring emerging technology of South-South countries and implement and disseminate the innovation ecosystem among South-South countries to address UN SDGs. Therefore, it is highly recommended that ISTIC should come up with a new strategic plan to have more impactful programmes and giving tangible development for developing South-South countries with the support of ASM and MOSTI beyond training, workshops and capacity building.

Trainings and Programmes

ISTIC needs to recruit more subject matter experts on ICT and Digital Technology, including IoT, AI and Data Science, in order to catch up with, and participate in Big Data and Open Science developments which are expected to flourish as the leading-edge technologies. This is most important to ensure the sustainability and relevancy of ISTIC's programmes. It also needs to enhance the programme delivery with more expertise (programme officer) in each area of programme to increase participation. ISTIC should also diversify its joint-programme by engaging more stakeholders such as UNESCO Associated Schools Programme Network (ASPNet), universities, private sectors and youth societies. This will contribute to more participation and encouragement to youth in ISTIC's programmes in support of STI initiatives.

ISTIC needs to track the effectiveness of its programmes and activities such as:

- Develop database on programme alumni and update information/ongoing ISTIC programme to all alumni and a platform for alumni to communicate.
- Follow-up with recipients of material support or award in the advancement of Science, Technology and Innovation.
- Follow up on past participants who may not be part of the winners for the present year but might have developed something worthwhile afterwards. Past participant should be given opportunity to contact them on their future innovation development. The outcome of the ISTIC programmes and its tangible impact on the people need to be highlighted or evaluated.

- Follow-up with member states to ensure the implementation. ISTIC makes a contact with regular participation of previous attendees to make sure that whether the materials used match with the current demands and ask for their feedback and re-engagement of past fellows.
- Follow up training sessions to learn what kind of transformation was brought due to the first training.

Funding

ISTIC shares the cost and benefits: ISTIC benefits its partner countries and also ISTIC shares the cost with the collaborated organization. To extend budgetary funding, ISTIC needs to do more collaboration with strategic partners and comes up with proposal, including cost-sharing with beneficiaries which already exists. ISTIC funding can be extended from predominant local organization like PETRONAS and international organizations like the World Bank, Asian Development Bank, Islamic Development Bank and African Development Bank. Besides, it is suggested for ISTIC to align the institute towards self-funding or having a secondary source of income apart from the annual budgetary received from the ministry. This will allow ISTIC to have a greater flexibility and control over the planning and execution of its programmes.

Staff for Professional Development

ISTIC is a small organization with only seven office staff in total. There is minimum career prospect ahead for the staff and everything is entrusting on loyalty and commitment. There should be some attractive pathways for their career development such as project management training, staff exchange programme to another centre to enhance staff knowledge, skills and international exposure. It is also a great idea for organizational effectiveness to introduce data management system for accessible and efficient data to all, which is essential with current small pool of staffs in order to improve on the new norm on handling programmes such as in IT area and to analyse on each programme and produce intelligent analysis/report.

New Normal

During the pandemic, ISTIC needs to emphasize and upgrade IT technology to leverage the digital IT platform and E-learning platform for active and effective virtual programmes and trainings, adopting Learning Management system in order not to halt its successes.

Among the entire strategic partners, China plays an important role in supporting science programmes and project like The Belt and Road Initiative, formerly known as One Belt One Road (OBOR), which will improve socio-economy and socio-technical system of South-South countries while taking care of most UN SDGs. Most importantly, programmes on Open Science should be given priority and working together with China will contribute the essence of the availability of information and data in the post-COVID-19 era. With the support of developed countries like Korea, China and France, ISTIC will serve as a connector to all South-South countries, disseminating knowledge, information, transferring technology and know-hows. By emphasizing emerging technologies, ISTIC becomes a champion and leverage its own system, benefiting to the people of Malaysia.
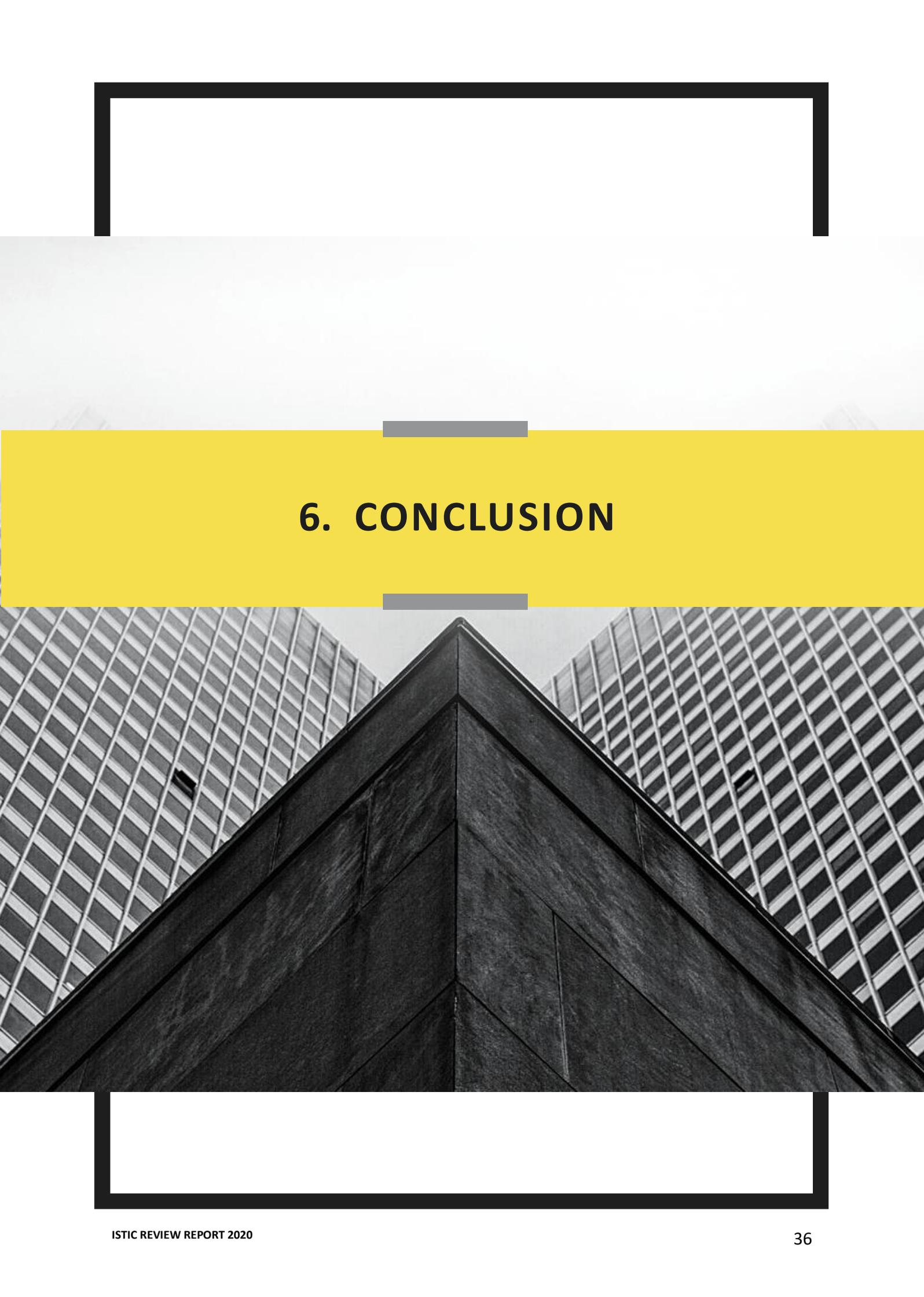
6. CONCLUSION

Based on the review, the agreement between UNESCO and the Government of Malaysia is vital to be reached out for another six years to support ISTIC as a Category 2 Centre, under the auspices of UNESCO. Making the status renewed in this report, all stakeholders and partners got further encouragement to proceed in their endeavours and find a unifying platform by consolidating on their successes and achieve STI goals. In doing so, UNESCO is a must to keep on playing a more dynamic role in advocating in support of ISTIC with regard to facilitating its programmes and activities and this is necessary for a funding reason as well as towards different stakeholders and partners across various South-South countries.

ISTIC is one of the sustainable organizations as it has the ability to ensure a robust system of cooperation within its stakeholders. Therefore, if given the platform once again, it can show greater achievement more than that, and outpace its existing highly pace of progress.
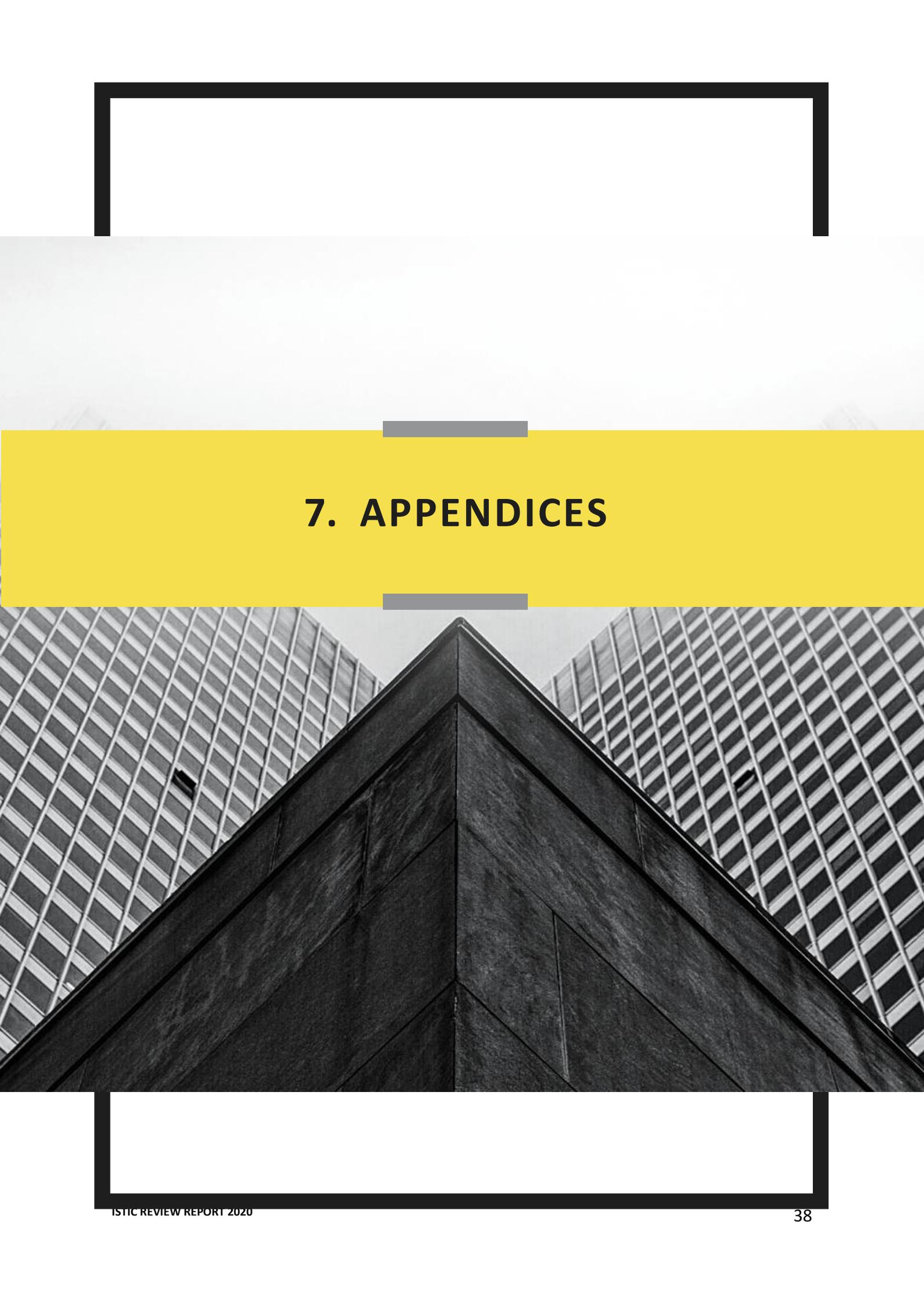
7. APPENDICES

Appendix: I

Term of Reference for Professor Charlie Than Contract

In accordance with the UNESCO Programme and Budget 2020–2021 (40C/5), Major Programme II: Natural Sciences, ER1: Member States have strengthened their capacity to develop and monitor inclusive STI policy and knowledge systems, under the overall authority of the Assistant Director-General for Natural Sciences, the overall supervision and guidance of the Director of the UNESCO Regional Office for Science in the Asia and the Pacific, and the direct supervision of Mr Yoslan Nur, Programme Specialist, the consultant shall conduct an evaluation of the in charge of the International Centre for South-South Cooperation in Science, Technology and Innovation (ISTIC) in Kuala Lumpur, Malaysia.

The main purpose of the review is to inform the decision-making process on the renewal of the Category 2 status of the Centre. The findings of the review will be included in the Director-General's report to the Executive Board with her recommendations as to whether the designation as Category 2 Centre under the auspices of UNESCO should be maintained, terminated or not renewed.

The Individual Consultant shall perform the following tasks:

1. Conduct the review of ISTIC with the following parameters:

    a. The alignment of the activities effectively pursued by the Centre with those set out in the Agreement signed with UNESCO;

    b. The relevance of the institute/centre's programmes and activities to achieving UNESCO's strategic programme objectives and sectoral or intersectoral programme priorities and themes, as defined in the Agreement;

    c. The effectiveness of the institute/centre's programmes and activities to achieving its stated objectives;

    d. The quality of coordination and interaction with UNESCO, both at Headquarters and in the field (including UNESCO field offices and UNESCO National Commissions), and other thematically related category 1 and 2

institutes/centres with regard to planning and implementation of programmes;

e. The quality of partnerships with government agencies, public/private partners and donors;

f. The nature and quality of organizational arrangements, including management, governance and accountability mechanisms;

g. The human and financial resource base and the quality of mechanisms and capacities, as well as context-specific opportunities and risks for ensuring sustainable institutional capacity and viability;

h. The process of mobilizing extrabudgetary resources and to what extent such extrabudgetary funding is aligned to the strategic programme objectives of UNESCO.

2. Define the evaluation methods and propose the review framework. Taking into consideration the restriction of travel due to the COVID-19 pandemics, the Consultant has to define the evaluation methods which is suitable the current circumstance. The evaluation methods may include:

a. Document review (desk study).

b. Zoom online platform or phone interviews with ISTIC's personnel, stakeholders and beneficiary groups or persons.

c. Online questionnaires/surveys with ISTIC's personnel, stakeholders and beneficiary groups or persons.

To facilitate the evaluation, ISTIC will make the following documents available to the evaluators:

• A copy of the existing agreement between the Member State and UNESCO establishing the institute/centre;

• Annual progress reports;

• Financial reports;

• List of staff;

• List of key publications;

- List and contact details of donors and project partners;

- List and contact details of the stakeholders;

- Minutes of the Governing Board meetings;

- Support provided to the Member States;

- Available audit and evaluation reports;

- Account of networking achievements linked with other thematically related category 2 institutes/centres and UNESCO's programmes.

3. Submit to UNESCO for approval the requested deliverables listed below:

    a. The review framework (inception paper) highlighting, among other details, the methods to be adopted by the evaluator, and the time schedule for completing the review, no later than 15 October 2020.

    b. The draft review report, which will be circulated among stakeholders for comments, no later than 15 November 2020.

    c. The final review report in which comments submitted by the various stakeholders would have been considered and appropriately incorporated by the external evaluator, no later than 31 January 2021.

The final report should include but not necessarily be limited to, the following elements:

- Executive Summary (maximum 3 pages)

- Purpose of the review

- Scope of evaluation

- Methodology

- Findings (given in terms of achievements and challenges)

- Recommendations (including a formal recommendation on (dis)continuation of the Category 2 status)

- Annexes (including interview list, data collection instruments, key documents consulted, Term of Reference, etc.).

Appendix: II

The Review Framework
(The Review of ISTIC as a Category II Centre under the auspices of UNESCO)

1. Background

The International Science, Technology and Innovation Centre for South-South Cooperation was inaugurated in Kuala Lumpur in May 2008. The centre functions under the auspices of UNESCO.

It facilitates the integration of a developmental approach into national science and technology and innovation policies, and provides policy advice. In parallel to organizing capacity-building and the exchange of best practices, the centre conducts research and tackles specific problems in science, technology and innovation policy-making in developing countries.

The ISTIC Category 2 institutes and centres under the auspices of UNESCO form an important part of UNESCO's network and contribute to the achievement of UNESCO's priorities, programmes and global development agendas. Under the agreement between UNESCO and Government of Malaysia, the International Centre for South-South Cooperation in Science, Technology and Innovation (ISTIC) Category 2 Centre under the auspices of UNESCO was launched in Kuala Lumpur on 22 May 2008. As an international platform for South-south Cooperation in Science, Technology and Innovation, ISTIC aims to adopt and implement STI to drive socio-economic development towards nation building in developing countries.

This year ISTIC and Government of Malaysia wish to renew its status of Category 2 Centre. With the reference of the 2019 Strategy for Category 2 Institutes and Centres Under the Auspices of UNESCO, adopted by the UNESCO General Conference at its 40th session (40C/Resolution 99), the renewal process should comprise four stages. One of the stages is a Renewal Evaluation by independent experts.

In this regard, UNESCO Office Jakarta will hire an individual consultant to conduct an evaluation of the International Centre for South-South Cooperation in Science, Technology and Innovation (ISTIC) with reference to the 2019 Strategy for Category 2 Institutes and Centres Under the Auspices of UNESCO.

2. Objectives

The main objective of this review is to ascertain through external evaluation processes, the progress recorded by ISTIC over the last five years through its programmes in line with its founding agreement. More specifically, the review of ISTIC with the following parameters:

a. The alignment of the activities effectively pursued by the Centre with those set out in the Agreement signed with UNESCO;

b. The relevance of the institute/centre's programmes and activities for achieving UNESCO's strategic programme objectives and sectoral or intersectoral programme priorities and themes, as defined in the Agreement;

c. The effectiveness of the institute/centre's programmes and activities for achieving its stated objectives in particular on the competence for ISTIC to play a role in building appropriate capacity in implementing Open Science;

d. The quality of coordination and interaction with UNESCO, both at Headquarters and in the field (including UNESCO field offices and UNESCO National Commissions), and other thematically related category 1 and 2 institutes/centres with regard to planning and implementation of programmes;

e. The quality of partnerships with government agencies, public/private partners and donors;

f. The nature and quality of organizational arrangements, including management, governance and accountability mechanisms;

g. The human and financial resource base and the quality of mechanisms and capacities, as well as context specific opportunities and risks for ensuring the sustainable institutional capacity and viability;

h. The process of mobilizing extra budgetary resources and to what extent such extra budgetary funding is aligned to the strategic programme objectives of UNESCO.

3. Review Assessment Criteria

The assessment will be conducted towards providing objective results to ISTIC for onward distribution to UNESCO in the following areas:

1. **Accountability:** Clear delineation of responsibilities and demonstration of carrying out these responsibilities.

2. **Effectiveness** – Determination of the extent to which ISTIC attains its goals and objectives, and supports the overall objectives of UNESCO.

3. **Efficiency** – Determination of whether the output and quality of results meet expectations given the available resources.

4. **Value** – Determination of whether the services provided are of quality and at an appropriate cost.

Therefore, the assessment will be made through the careful review of information provided on:

1. Programmes and Activities impact on South-South Cooperation on Science, Technology and Innovation policy, programme and management capacity.

2. Impact and relevance of existing institutional partnerships being promoted by ISTIC.

3. Management style in terms of systems, processes and procedures as they relate to ISTIC mandate.

4. Organizational culture in terms of the image projected through the human resources of ISTIC.

5. Financial resources sourcing and management.

4. Methodologies

The methodology to be adopted will be a combination of the narrative as well as the objective system of rating that provides metric scores for each assessment criteria in line with the information provided by ISTIC and those gathered through interaction with its institutional and individual partners. This will be exercised through the following activities:

1. Desktop Review of existing documents that comprise the following:

   - A copy of the existing agreement between the Member State and UNESCO establishing the institute/centre;

- Annual progress reports;

- Financial reports;

- List of staff;

- List of key publications;

- List and contact details of donors and project partners;

- List and contact details of the stakeholders;

- Minutes of the Governing Board meetings;

- Support provided to the Member States;

- Available audit and evaluation reports;

- Account of networking achievements linked with other thematically related category 2 institutes/centres and UNESCO's programmes.

2. Zoom online platform or phone interviews with ISTIC's personnel, stakeholders and beneficiary groups or persons.

3. Online questionnaires/surveys with ISTIC's personnel, stakeholders and beneficiary groups or persons.

5. Reporting

a. There is a two-stage reporting requirement that will include an initial report to be submitted by the independent consultant. This will be then be circulated for input among key stakeholders identified in the ToR before a final report will be made available for onwards consideration by UNESCO for the renewal of ISTIC status as a Category 2 Centre. A validation session will be organized as part of the reporting process should time and resources permit towards solidifying the participatory process and engendering a sense of inclusiveness among all stakeholders.

b. The review framework (inception paper) highlighting, among other details, the methods to be adopted by the evaluator, and the time schedule for completing the review.

c. The draft review report, which will be circulated among stakeholders for comments, no later than 15 November 2020.

d. The final review report in which comments submitted by the various stakeholders would have been considered and appropriately incorporated by the external evaluator, no later than 31 January 2021.

e. The final report should include

- Executive Summary

- Purpose of the review

- Scope of evaluation

- Methodology

- Findings (given in terms of achievements and challenges)

- Recommendations (including a formal recommendation on (dis)continuation of the Category 2 status)

- Annexes (including interview list, data collection instruments, key documents consulted, Term of Reference, etc.).

6. Critical Success Factors

The success of the review exercise is dependent on:

1. The full commitment of the Board and the Management team of ISTIC.

2. Full cooperation with national and international institutional partners of ISTIC.

3. The degree to which consultation with stakeholders will be undertaken.

4. The implementation of the recommendations made through the review report.

7. Conclusion

This framework provides a general guideline and overview of how the independent specialist will actualize the stipulated expected outcome of the review process as set out in the Terms of Reference. The decision to take both a narrative and an objective approach rests on the need to provide clear and accurate representation of ISTIC in line with its organizational systems, processes and procedures and how these have translated in the achievement of desired results in line with the terms of its founding agreement. It is expected that full

cooperation will be provided by all stakeholders towards ensuring that this review exercise is completed in a timely fashion.

Appendix: III

List of ISTIC Partners

Local Partnerships

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1. Ministry of Science, Technology and Innovation (MOSTI)

2. Academy of Sciences Malaysia (ASM)

3. Permanent Delegation of Malaysia to UNESCO

4. Malaysia National Commission for UNESCO (MNCU)

5. Ministry of Education Malaysia (MOE)

6. UNESCO Water Centre the Regional Humid Tropic Hydrology and Water Resources Centre for South East Asia and Pacific (HTC Kuala Lumpur)

7. Ministry of Higher Education Malaysia (MOHE)

8. IEM Training Centre SDH. BHD. (IEMTC)

9. The Institution of Engineers, Malaysia (IEM)

10. Japan International Cooperation Agency - Malaysia Office (JICA)

11. Regional Centre for Education in Science & Mathematics (RECSAM)

12. Malaysia University of Science and Technology (MUST)

13. Prima Asia Pacific Consulting (PAPC)

14. Malaysian Foundation for Innovation (YIM)

15. Construction Industry Development Board Malaysia (CIDB)

16. Malaysian Technology Development Corporation SDN. BHD. (MTDC)

17. Malaysian Industry-Government Group for High Technology (MIGHT)

18. Centre for Civilizational Dialogue (UMCCD)

19. Board of Engineers Malaysia (BEM)

20. Young Scientists Network-Academy of Sciences (YSN-ASM)

21. Institut Sosial Malaysia (ISM)

22. USAINS Holding SDN.BHD. (USAINS)

23. STEM Competency Development Unit, National STEM Centre

24. Ministry of Women, Family and Community Development (KPWKM)

25. Lembaga Pembangunan Langkawi (LADA)

26. Institut Pendidikan Guru Malaysia (IPGM)

International Partnerships

UNESCO Offices

1. UNESCO Headquarters

2. UNESCO Office in Jakarta (Regional Bureau for Sciences in Asia and the Pacific and Cluster Office for Brunei Darussalam, Indonesia, Malaysia, the Philippines and Timor-Leste)

3. UNESCO Office in Cairo (Regional Bureau for Sciences in the Arab States and Cluster Office for Egypt, Sudan and Libya)

4. UNESCO Office in Bangkok (Regional Bureau for Education in Asia and the Pacific and Cluster Office for Thailand, Myanmar, Lao People's Democratic Republic, Singapore, Viet Nam and Cambodia)

5. UNESCO Office in Beijing [Cluster Office for the People's Republic of China, Japan, Mongolia, the Democratic People's Republic of Korea and the Republic of Korea.

6. UNESCO Office in Montevideo (Regional Bureau for Sciences in Latin America and the Caribbean and Cluster Office for Argentina, Brazil, Chile, Paraguay and Uruguay)

7. UNESCO Office in Nairobi (Multi-sectoral Regional Office for Eastern Africa and the adjacent Indian Ocean Islands: Comoros, Djibouti, Eritrea, Kenya, Madagascar, Mauritius, Rwanda, Seychelles, Tanzania, Somalia, South Sudan and Uganda)

Asia and the Pacific

8. Chinese Academy of Science and Technology for Development (CASTED)

9. OIC Standing Committee on Scientific & Technological Cooperation (COMSTECH)

10. Economic Cooperation Organization Science Foundation (ECOSF)

11. Engineering Staff College of India (ESCI)

12. Forum of Small-Medium Economics AFRICA ASEAN (FORSEAA)

13. International Centre for Engineering Education (ICEE) under the auspices of UNESCO

14. International Knowledge Centre for Engineering Sciences and Technology (IKCEST) under the auspices of UNESCO

15. Korea Institute of Science and Technology Evaluation and Planning (KISTEP)

16. Indonesian Institute of Sciences (LIPI)

17. Myanmar Engineering Society (MES)

18. National Center of State Science and Technology Evaluation (NCSTE)

19. NAM Institute for the Empowerment of Women (NIEW)

20. Pacific Science Association (PSA)

21. Ministry of Research, Technology and Higher Education of Indonesia (RISTEKDIKTI)

22. SEAMEO Regional Centre for Quality Improvement of Teachers and Education Personnel (QITEP) in Science (SEAMEO-QITEP/SEAQIS)

23. UNIDO Centre for South-South Industrial Cooperation (UCSSIC China)

24. United Nations Office for South-South Cooperation (UNOSSC)

Africa

25. Engineers Registration Board of Kenya (EBK)

26. Engineers Registration Board Tanzania (ERB)

27. Council for the Regulation of Engineering in Nigeria (COREN)

28. National Institute for Science, Technology and Innovation Seychelles (NISTI)

Arab States

29. Economic and Social Commission for Western Asia (ESCWA)

30. The Future University, Sudan (FU)

31. Islamic World Academy of Sciences (IAS)

32. Isfahan Regional Center for Technology Incubators and Science Park Development (IRIS) under the auspices of UNESCO

33. Islamic Development Bank (IsDB)

34. Islamic Educational, Scientific and Cultural Organization (ICESCO)

35. Isfahan Science & Technology Town (ISTT)

36. Kuwait Institute for Scientific Research (KISR)

37. The Research Council of Oman (TRC)

38. ICESCO Regional Office in Tehran

Latin America and the Caribbean

39. Argentine Center of Engineers (CAI)

40. The network of R&D and Postgraduate Programmes in the Basic Sciences in the Caribbean (CARISCIENCE)

41. YACHAY – City of Knowledge

North America and Europe

42. The Inter-Academy Partnership (IAP)

43. Fondation *La main à la pâte* (LAMAP Foundation)

44. The New York Academy of Sciences (NYAS)

45. Office for Climate Education (OCE)

46. The World Academy of Sciences (TWAS)

47. World Federation of Engineering Organizations (WFEO)

48. World Science Forum – Hungarian Academy of Sciences (WSF-HAS)

49. Directorate Technology and Innovation Policy Working Group (OECD Science Technology Industry)

50. 1001 Inventions Limited

Australia

51. Australian Academy of Technology and Engineering (ATSE)

Appendix: IV

Survey Instrument for Stakeholders/Participants

Review of ISTIC as a UNESCO Category 2 Centre – Report

S/No	Items of Enquiry	Scope				
1.	**Thinking about ISTIC, overall how well do you consider it has performed with regards to the following?** 1 – Strongly Disagree, 2 – Disagree, 3 – Neither Agree nor Disagree / Neutral, 4 – Agree, 5 – Strongly Agree	**1**	**2**	**3**	**4**	**5**
A	Clear purpose and identity.					
B	Existing core values underpinning its work.					
C	Deliveries of strategic action plans for the past 5 years.					
D	Being connected with its partners and beneficiaries.					
E	Relevance to diversified stakeholders' needs					
F	Level of feedback encouraged from beneficiaries on its programmes.					
2.	**How has ISTIC fared over the last five years on its Programmes and Services relating to the following?** 1 – Strongly Disagree, 2 – Disagree, 3 – Neither Agree nor Disagree / Neutral, 4 – Agree, 5 – Strongly Agree	**1**	**2**	**3**	**4**	**5**
A	Well-planned programmes and activities.					
B	Focused on getting the best results for partners.					
C	Programmes and activities are appropriate to the needs of beneficiaries.					
D	Holistic approach with links and partnerships with other organizations.					
E	Quality and relevance of publications over the past five years.					
3.	**How well do you think ISTIC has performed in relation community interactions?** 1 – Strongly Disagree, 2 – Disagree, 3 – Neither Agree nor Disagree / Neutral, 4 – Agree, 5 – Strongly Agree	**1**	**2**	**3**	**4**	**5**

		1	2	3	4	5
A	Good support from host community.					
B	Advocacy for structural changes in South-South countries.					
C	Indirect contribution to social development beyond direct impact on Science, Technology and Innovation.					
D	Sharing of best practice among local communities and with South-South countries.					
E	Engagement with communities across the South-South countries on promoting Science, Technology and Innovation at the grassroots level.					
4.	**How do you perceive the organizational systems, processes and procedures of ISTIC?** 1 – Strongly Disagree, 2 – Disagree, 3 – Neither Agree nor Disagree / Neutral, 4 – Agree, 5 – Strongly Agree	**1**	**2**	**3**	**4**	**5**
A	Focused on continually improving systems, process and procedures.					
B	Awareness of evidence-based results (research findings, relevant literature, etc.)					
C	Knowledge and capacity enhancement of internal stakeholders.					
D	Level of teamwork.					
E	Change management processes.					
F	Yearly review and evaluation of programmes and activities.					
G	Appropriate policies and frameworks for action regarding internal stakeholders.					
5.	**ISTIC and Stakeholders / Participants** 1 – Strongly Disagree, 2 – Disagree, 3 – Neither Agree nor Disagree / Neutral, 4 – Agree, 5 – Strongly Agree	**1**	**2**	**3**	**4**	**5**
A	There is a clear term of engagement.					
B	Communication is robust between and among partners in the ISTIC network.					
C	Periodic meeting or events towards the actualization of continuous agreements.					
D	Existing reports of activities with partners.					

E	Implementation of recommendations as outcomes of meetings regarding the programmes and activities of ISTIC.					
F	Periodic communication with beneficiaries of ISTIC programmes and activities.					
G	Follow-up with recipients of material support or award in the advancement of Science, Technology and Innovation in South-South countries.					
H	Technology-based channel of communication with timely responses.					
I	What do you view as the THREE greatest strengths of ISTIC as an organization?					
J	What do you view as the THREE most important areas of improvement for ISTIC?					
K	In the next 5 years, what strategic roles should ISTIC play in relation to i) UNESCO and ii) South-South countries					
L	In the next 5 years, what do you view as the top priority for ISTIC as an organization?					

About You (optional)	
Name:	
Organization:	
Relationship with ISTIC:	
Programmes or Activities of ISTIC attended:	
How long have you been engaging with ISTIC:	
General comments about ISTIC not captured above:	
Date:	
Signature:	

Appendix: V

Survey Instrument for Donors

Section A		1	2	3	4	5
Thinking about ISTIC as whole, how well do you consider it has performed over the past Five Years with regards to: **1** – Strongly Disagree, **2** – Disagree, **3** – Neither Agree nor Disagree / Neutral, **4** – Agree, **5** – Strongly Agree						
1	Clear purpose and identity.					
2	Clear areas of focus with regards to ISTIC work in advancing STI capacity building programmes.					
3	Existing core values underpinning its work.					
4	Clear strategic direction for the next 3 years.					
5	Being connected with its partners and donors.					
6	Adaptation to changing social context and the changing needs of its partners and donors.					
7	Articulation of programme plans and desired outcomes.					
8	Overall performance in terms of its programmes and services.					
9	Services and activities are appropriate to the needs of donors.					
10	Clear accountability for all resources granted to ISTIC.					
11	Measurable impact of ISTIC activities on STI sector.					
12	Case Studies of ISTIC impact on STI sector.					
13	Efforts to have multiple donor sources committed to STI development in the region.					
14	Advocacy for changes in how resources are committed and utilized for increasing the role of STI in policy decisions.					
15	Donor discussion platform where information about ISTIC activities are shared with donors.					
16	Clear terms of engagement with ISTIC.					

17	Clear leadership and appropriate designation of responsibilities in dealing with donors.					
18	Level of feedback received about how your donated funds or resources are utilized.					
19	Use of internet technology to attract donors and maintain existing donor relationships.					
20	Up to date reports submitted or shared about ISTIC activities.					

Section B	
What do you view as the THREE greatest strengths of ISTIC as an organization?	
What do you view as the THREE most important areas of improvement for ISTIC?	
In the next 5 years, what strategic roles should ISTIC play in relation to (i) UNESCO and (ii) South-South countries?	
In the next 5 years, what do you view as the top priority for ISTIC as an organization?	
About You	
Name:	
Organization:	
Relationship with ISTIC:	
Programmes or Activities of ISTIC attended:	
How long have you been engaging with ISTIC:	
General comments about ISTIC not captured above:	
Date:	
Signature:	

Appendix: VI

List of Interviewees

No.	Name	Position	Organization
1	**Academician Dato' Ir. (Dr.) Lee Yee Cheong**	Honorary Chairman	ISTIC
2	**Academician Professor Emeritus Tan Sri Dato' Dr. Omar Abdul Rahman**	STI Policy Consultant	ISTIC
3	**Datin Sri Nor Zamani Abdol Hamid**	Deputy Director-General of Education Malaysia (Policy and Curriculum Sector)	MOE
4	**Dato' Dr. Samsudin Tugiman**	Former ISTIC Chairman and Director	ISTIC
5	**Dato' Dr. Sharifah Maimunah Syed Zin**	Former ISTIC Director	ISTIC
6	**Dato' Parang Abai @ Thomas**	Deputy Secretary General (STI Planning and Culture)	MOSTI
7	**Dr. Amitava Bandyopadhyay**	Director-General STI Advisory Council	NAM S&T Centre ISTIC
8	**Dr. Danial Rouan**	President Governing Board Member	LAMAP Foundation ISTIC
9	**Dr. David Wilgenbus**	Chief Executive Officer	OCE
10	**Dr. Denis Nkala**	Regional Coordinator/Representative	Asia-Pacific Regional Office UNOSSC
11	**Dr. Irina Bokova**	Former Director-General	UNESCO
12	**Dr. Jummai Umar-Ajijola**	Excevutive Chair and Chief Executive Officer	TBP Limited

No.	Name	Position	Organization
13	**Dr. Liu Chang (Cathy)**	Director of Division of International Cooperation	IKCEST
14	**Dr. Nazakat Ali**	Advisor Former Assistant Professor	Salaar Tech, NXATech, Pakistan Institute of Space Technology, Islamabad
15	**Dr. Peter McGrath**	Coordinator IAP for Science and IAP for Health, IAP Secretariat and TWAS	TWAS and IAP
16	**Dr. R. Indarjani**	Former Deputy Director Dean, Faculty of Science and Technology	SEAMEO QITEP in Science The Islamic University of As-syafi'yah
17	**Dr. Sein Myint**	Governing Board Member	ISTIC
18	**Madam Hazami Habib**	Chief Executive Officer	ASM
19	**Madam Tengku Nila Putri Tengku Ilham**	Senior Vice President, MTDC Academy	MTDC
20	**Madam Tengku Sharizad Tengku Dahlan**	Director	ISTIC
21	**Madam Zakiah Jaafar**	Deputy Secretary General (Investment)	MOF
22	**Mr Abdul A'dzim Abdul Rashid**	Science Officer	ISTIC
23	**Mr Mohamad Azim Noor**	IT Officer	ISTIC
24	**Mr Shareeza Shaari**	Administrative Officer	ISTIC

No.	Name	Position	Organization
25	**Mr Mohammad Sanusi Abdul Karim**	Secretary-General	MNCU
26	**Mr Teoh Phi Li**	Under Secretary of International Division	MOSTI
27	**Mrs Zarmila Salmi Sabot**	Administrative Officer	ISTIC
28	**Ms Intan Diana Fishal**	Science Officer	ISTIC
29	**Ms Norkhalizatul Akmal Mohd Jamil**	Science Officer	ISTIC
30	**Professor Datuk Dr. Asma Ismail**	President	ASM
31	**Professor Dr. Manzoor Hussain Soomro**	President Chairman Governing Board Member	ECOSF PSF ISTIC
32	**Professor Dr. Shahbaz Khan**	Director	UNESCO Jakarta
33	**Professor Emeritus Harold Ramkissoon**	President Emeritus Governing Board Member	CARISCIENCE ISTIC
34	**Professor Madya Dr. Azizah Omar**	Associate Professor in Marketing, School of Management	USM