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Under the High Patronage of His Majesty King Mohammed VI - may Allah preserve him -

**Seventh Islamic Conference
of Ministers of Higher Education and Scientific Research
« Higher Education: Governance, Innovation and Employability »**

**Proposal for the Establishment of OIC Collaborative
Efforts in Commercialization and Entrepreneurship
Education (OIC-CECE)**

ISESCO Headquarters, Rabat, Kingdom of Morocco
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Background

1. The Third (3rd) Extraordinary Session of the Islamic Summit Conference held in Makkah al Mukarramah, Kingdom of Saudi Arabia, on 7-8 December 2005, has initiated the **“Ten-Year Programme of Action (TYPOA) to meet the Challenges Facing the Muslim Ummah in the 21st Century”**. The objective of TYPOA was to identify the challenges facing the Muslim World in the 21st Century and to propose possible solutions to address these challenges to its Member States.
2. Among the challenges identified are intellectual and political issues, development, socio-economic and scientific issues. To address the issue of socio-economic and scientific fields, higher education science and technology was given emphasis. Among the recommendations made are:
 - i) To effectively improve and reform educational institutions and curricula in all levels, and link postgraduate studies to the comprehensive development plans of the Islamic world. At the same time, priority should be given to science and technology and facilitating academic interaction and exchange of knowledge among the Member States’ academic institutions, and urge the Member States to strive for quality education that promotes creativity, innovation, and research and development;
 - ii) To call upon Islamic countries to encourage research and development programmes, taking into account that the global percentage of this activity is 2% of the Gross Domestic Product (GDP), and request Member States to ensure that their individual contribution is not inferior to half of this percentage; and
 - iii) To encourage public and private national research institutions to invest in technology capacity-building, in areas of advanced technologies, such as the acquisition of nuclear technology for peaceful uses.
3. The **“Mid-Term Review Meeting on the Implementation of the TYPOA and the OIC Vision 1441H for Science and Technology (Vision 1441)”** was held on 4-6 December 2010 in Dubai, United Arab Emirates (UAE). The purpose of the meeting was to review and strengthen the implementation of the TYPOA and Vision 1441 as well as to update structural modifications based on some of the best practices of its Member States.
4. Both TYPOA and Vision 1441 called for an increase in investment in R&D, R&D Output, and number of research scientists as well as strategies for commercialization of R&D results. Whereas, Vision 1441 specifically called for **achieving R&D expenditure level of 1.4% Gross Domestic Product (GDP), 14% of world scientific output and having 1441 researchers and scientists per million of population by 1441.**
5. Under the domains of higher education, science and technology, health and environment, among the recommendations made is **“innovation and entrepreneurship should be an important field of study accessible to students at all levels”**. Recommendations are also

made in relation to public private partnership through academia-industry linkages. Among the recommendations are:

- i) Alignment of research projects with industry needs is important for promoting public-private and research-industry partnership. In this regard, Chambers of Commerce and Industries in Member States are requested to promote public-private and academia-industry partnerships. Identified viable and marketable projects can subsequently benefit from existing mechanisms available with the OIC institutions, such as the Islamic Development Bank (IDB), the Islamabad Chamber of Commerce and Industry (ICCI) and the Islamic Educational, Scientific and Cultural Organization (ISESCO), for commercialization of R&D results.
- ii) Chambers of commerce and industries in Member States are also requested to launch appeals to philanthropists among industry and business community to finance research centers and projects, which can be named after their benefactors.
- iii) Programmes and research that provide training and knowledge to increase the success of academic entrepreneurs at all stages, with emphasis on establishment of start-up companies based on R&D results and patents should be developed.
- iv) Training programs for policy makers should be conducted to better equip them to create and promote an environment that fosters innovation and entrepreneurship.

Some of the recommendations above are being implemented in Malaysia.

6. At the 14th General Assembly of COMSTECH in Islamabad, Pakistan, on 11-13 January 2011, Malaysia presented a paper on “**Connecting Research to Market**” highlighting the importance of innovation and entrepreneurship in higher education institutions. COMSTECH made a resolution and operative paragraphs as follows:

Operative 11: RECOMMENDS that national innovation systems should be promoted through preparing policy documents on technology parks, innovation, entrepreneurship, venture capital funding, mechanisms of incentivization of the private sector, changes in legal system, «brain circulations» and higher education after examining the best systems in different countries so that guidelines for Member States can be developed in each case.

Operative 13: RECOMMENDS that a policy paper should be prepared on mechanisms to promote university-industry interaction and introduction of curricula on innovation and entrepreneurship at all levels of education using international best practices.

7. During the 5th Islamic Conference of Ministers of Higher Education and Scientific Research held in Malaysia in 2010, Malaysia proposed to spearhead the collaborative agenda on Research, Innovation and Commercialization of R&D among the OIC countries. In pursuance of this, the Ministry of Education Malaysia organized an Expert Group Meeting on Research and Development between some of the OIC Countries, in Kuala Lumpur, from 3 through 5 September 2012.
8. The three-day meeting enabled academicians, researchers and policy makers to share and exchange perspectives, best practices and experiences in the various disciplines of scientific

research and innovation. In response to the various issues affecting the potentials and the future development of research and innovation collaborative efforts among the OIC countries, the meeting adopted a proposal for the establishment of the **OIC Collaborative Effort in Commercialization and Entrepreneurship Education (OIC-CECE)** so as to complement the value chain of R&D.

RATIONALE AND JUSTIFICATION FOR OIC-CECE

9. Realizing that the future development and progress of the Islamic countries would be determined by their ability to transform their economy into a knowledge and creative-based economy, OIC-CECE is proposed based on the following rationales;
 - i) That the OIC member countries agenda should go beyond the political- security issues.
 - ii) That besides research and innovation, it is imperative for OIC countries to enhance and ensure economic survival and competitiveness of each and every Muslim country in the era of knowledge and creative economy by progressing along the Research, Innovation, Commercialization and Entrepreneurship Education (RICE) value chain.
 - iii) That the future progress, development and security of every OIC country are determined by their investment in science and technology.
 - iv) That the current and future challenges confronting OIC countries require solutions grounded in science and technology.
 - v) That the best way forward for OIC countries to leapfrog in science and technology is to consolidate the resources of the Muslim world in terms of expertise, scientific infrastructures and funding.
 - vi) That there is a greater need for further institutionalization of initiatives that could promote the fusion of arts and science in nurturing research and entrepreneurial talents.
10. It is hoped that OIC-CECE could help translate the above-mentioned aspirations into concrete agenda and framework for greater investment, involvement and achievement in scientific research, commercialization and entrepreneurial effort among the OIC countries.

THE OIC-CECE FOCUS

11. The OIC-CECE work will focus on the following:
 - i) To undertake collaborative projects in the area of commercialization and entrepreneurial education that give value for Member States.
 - ii) To collaborate with the Islamic Educational, Scientific and Cultural Organization (ISESCO) on research and development activities to provide Ummah-driven solutions.
 - iii) To promote collaborative research projects and knowledge transfer activities among Member States.
 - iv) To facilitate communication and information exchanges between governments, regional organizations and scientific and research institutions in the Member States.

- v) To undergo entrepreneurial education in order to develop innovation, creativity, and the entrepreneurial mindset. The entrepreneurial education must include enhancing critical thinking skills and sharpen the ability to harness and connect knowledge in STEM to provide solutions to real life problems.
12. Based on the above, the founding members have identified the following major initiatives that could help translate the mandate of the OIC-CECE. These initiatives are as follows:

Entrepreneurial Education

13. The first initiative relates to entrepreneurial education and the OIC-CECE will pursue the following strategies. These are:
- i) To develop curriculum in entrepreneurial education for undergraduates and postgraduates.
 - ii) To identify best fit practices in entrepreneurial education among OIC Member States and non-Member States.
 - iii) To help establish the directory of experts and networks in entrepreneurial education from among the research establishments and universities in the OIC Member States.
 - iv) To help promote collaborative models in commercialization and entrepreneurial education based on the prevailing best practices but tailored to the domestic strategic needs of Member States.
14. Among the initiatives is to collaborate with the Islamic Educational Scientific and Cultural Organization (ISESCO) towards innovative human capital and enhancement of the R&D value chain by building on the existing approved projects/programs under ISESCO, which include emphasizing more on commercialisation aspect under the national science education policies and programmes, preparation of curricula, and identification, formulation and launching of commercial and innovative technological projects and technology transfer processes, so as to make education an effective tool of comprehensive balanced development. The key to success in the competitive economy hinges on the ability to innovate and commercialize technologies. Scientific educational institutions, colleges and universities will be encouraged in the acquisition and commercialization of technologies and to adopt new trends so as to truly benefit from the advantages of such technologies can bring towards socio-economic progress. Research projects of ISESCO Centre for Promotion of Scientific Research (ICPSR) will be realigned so as to focus of innovation and expansion of local technologies.

Enhancing Research Collaborations with OIC CECE and ISESCO

15. The second initiative is, to focus on enhancing greater research collaborations between OIC Member States. It cannot be disputed that most of the current research cooperation among OIC Member States are with their western counterparts. While working with the best researchers from the world's best universities are crucial, efforts must made to build the research capabilities of the less developed member states through greater research collaborations. Unlocking the research potentials of OIC Member States is indeed strategic.

There is a need to nurture the diversity of talents in the OIC and utilise its natural resources so as to enhance its economic value and provide ummah-driven solutions. The combination of diversity in talents and the collaborative technologies diversity of perspectives is vital to the success of any research endeavors.

OIC-CECE Niche Areas for Research Collaboration

16. Realizing the tremendous potentials for cooperation in research and innovation among IOC Member States, the founding Member States of the OIC-CECE have identified the niche areas that should be focused on. The areas identified are in line with the Millennium Development Goals and strategic needs of the OIC-CECE Member States. The focus areas are as follows:

- i) Water Quality and Security.
- ii) Poverty Eradication and Socio-economic Transformation.
- iii) Energy Security and Efficiency.
- iv) Life Sciences.
- v) Food Security & Safety (including Halal & Pharmaceutical Industry).
- vi) Environmental Sustainability.
- vii) Innovative and Liberal Arts Education.
- viii) Society, Culture & Religion (that includes media and communication, gender and social divides).
- ix) Emerging Issues and Technologies.

Making Knowledge Transfer works

17. The third initiative is focused on issues affecting knowledge transfer. Knowledge transfer is indeed an important characteristic of a knowledge-based economy and society. An effective knowledge transfer policy should allow for multifaceted approaches; and this is where OIC-CECE could play an important role to facilitate the process. Among the potential approaches that could be undertaken are:

- i) The exchange of scholars, academics and researchers among Member States.
- ii) To encourage greater mobility of research students and researchers.
- iii) To undertake the translation of research works of scientists and researchers from the OIC countries into common languages.
- iv) To promote Inter-Library Link / Online resources among Member States.
- v) To identify, revisit and reintroduce the work of renowned Muslim scientists and inventors and acknowledge their contribution to science and humanity.
- vi) To introduce the OIC Laureate Award: an award to recognize the achievements of Muslim scientists and researchers for their work in science, philosophy and arts.

Connecting Research to Market

18. The fourth initiative is connect research to the Market place. Realizing that the research communities are always lacking in terms of business and commercial acumen, it is crucial to develop a mechanism to connect the scientific research community to the market and the commercial activity. This could be done through various initiatives that include:
- i) To help identify the success stories of technology transfer and commercialization activities.
 - ii) To help formulate Member States research and innovation regulation and policy, besides developing commercialization models that protect intellectual property rights.
 - iii) To facilitate university and industry cooperation.
 - iv) To develop a relevant funding mechanism for research, innovation and commercialization.
 - v) To advise on talent development, retention and mobilization.
 - vi) To advise on critical and strategic research infrastructures developments and investments (Incubators, tech parks, GMP labs).
 - vii) To assist in developing innovation and commercialization licensing and start-ups framework.
 - viii) To undertake the mapping of scientific and technological development of OIC Member States.
 - ix) To help identify, develop and promote Member States' indigenous technologies.

Governance and Management

19. Malaysia wishes to inform and acknowledge that the founding members of the OIC-CECE are **Qatar, Iran, Turkey, Brunei, Kingdom of Saudi Arabia and Malaysia**.
20. These founding members have **agreed in principle** that at this initial stage, the OIC-CECE should function based on the loose network model to ensure that its mandate could be executed on a manageable scale with minimal cost.
21. The founding members are also of the view that the **membership of the OIC-CECE should be open to willing and like-minded OIC Member States**.
22. To ensure that the OIC-CECE could evolve into a full-fledged institution dedicated to the promotion of research and innovation in the future, Malaysia proposes that a **Secretariat is set up to help execute the mandate of the OIC-CECE**. In the interest of ensuring the success of the OIC-CECE, Malaysia, subject to the approval of the founding members and the Islamic Conference of Ministers of Higher Education and Scientific Research, **offers to host the Secretariat**. Should Malaysia be given this mandate, the Secretariat would be based at the Ministry of Education Malaysia.
23. Malaysia wishes to further propose that, at this inception stage of the OIC-CECE, the day-to-day operation of the Secretariat should come under the ambit and organizational

structure of the Ministry of Education Malaysia. This interim measure is to last until the OIC-CECE could be properly institutionalized as part of an OIC establishment.

24. The **founding members collectively agreed** that the OIC-CECE would be **governed by a multi-international Steering Committee**. The membership of the Committee would comprise one representative from every founding member.
25. The **Steering Committee would act as the agenda setter** of the OIC-CECE and will be assisted by the Secretariat.
26. The founding members shall **determine the Chair of the Steering Committee** through a democratically elected mechanism of appointment.
27. The Steering Committee will need to **meet twice a year** and hence has the responsibility of setting direction, providing advice and monitoring the initiatives undertaken by the OIC-CECE network.
28. In ensuring accountability, the **Chair of the Steering Committee shall be invited to make a representation before the Islamic Conference of Ministers of Higher Education and Scientific Research on the progress and development of the OIC-CECE**. The Chair is also responsible to seek direction from the Conference regarding any agenda that is of great significance and value to the OIC.

CONCLUSION

29. The Government of Malaysia believes that the establishment of the OIC-CECE is very strategic to the needs of the OIC and the well-being of its Member States. In an era where the future of the world is shaped and transformed by the findings of science and technology and driven by innovation and creativity, commercialization and entrepreneurship education should be our top priority. **This proposal for the establishment of the OIC-CECE is a pioneering initiative to collaborate with ISESCO in the development of research and innovation among the OIC Member States and to move along the value chain to focus on commercialization and entrepreneurship (education).** Malaysia is confident that scientific agenda will continue to be relevant to the future role of the OIC and seeks the support of this Conference to endorse this initiative.
30. Malaysia is of the view that this is an opportune time for like-minded Member States to spearhead the development of a dedicated commercialization and entrepreneurship (education) platform for the OIC. The collective effort of the founding member states reflects their keen interest to strengthen global network in the promotion of the CECE globally. It is hoped that one day, the OIC-CECE would become the referral centre for OIC Member States and the global scientific community in matters related to the CECE.
31. Malaysia, after extensive consultations with the other founding members, is pleased to propose the establishment of the OIC-CECE on a lean, manageable and cost-effective framework. The paper has described Malaysia's proposal in brief for the consideration of the Islamic Conference of Ministers of Higher Education and Scientific Research.

SHORT, MEDIUM AND LONG TERM PLAN OF ACTION FOR OIC-CECE (2015-2025)

Implementation Plan

SHORT TERM ACTIONS (2015-2017):

RESEARCH COLLABORATION

No	Action	Target / KPI	Timeline	Implementation Partners
1.	Establish base line information by mapping OIC strengths and linkages in research based on publications (both indexed and non-indexed, e.g. ISI, SCOPUS, ERA, open access journals, etc.) patents and IP	a. Establishment of mapped OIC strengths via database b. Establishment of mapped OIC Research linkages	2015	OIC CECE Members
2.	Establish Expert Group networks by implementing the following research collaborative models: 1. RACE – Research Acculturation & Collaborative Efforts (to reduce the divide among OIC countries in terms of R&I maturity) 2. HIPP – High Impact Publications (co-publication in high impact journals to enhance research quality) 3. CoEs/RU/IHLs – Centers of Excellence (those with promise and of high impact) – (exchange of staff and students, collaborative research and sharing of expertise, resources and facilities)	a. Establishment of RACE b. Establishment of HIPP c. Sharing of experts, students, staff and facilities	2015 2017 2015/16	OIC CECE Members

**MEDIUM TERM ACTIONS (2017-2019):
DEVELOP ENTREPRENEURIAL CURRICULUM**

No	Action	Target / KPI	Timeline	Implementation Partners
1.	Establish the directory of experts and networks in entrepreneurial education from among the research establishments and universities in the OIC Member States	Completion of directory of expertise	2017	OIC CECE Members
2.	Identify best practices and best fit practices in entrepreneurial education	Establishment of best practices	2017	OIC CECE Members
3.	Develop curriculum in entrepreneurial education	Module for entrepreneurial curriculum	2019	OIC CECE Members
4.	Promote collaborative models in commercialization and entrepreneurial education based on the prevailing best practices but tailored to the domestic strategic needs of Member States.	Transfer of curriculum to Member States	2019	OIC CECE Members

LONG TERM ACTIONS (2020 AND BEYOND):

CONNECTING RESEARCH TO MARKET (2020 AND BEYOND)

No	Action	Target / KPI	Timeline	Implementation Partners
1.	Identify the success stories of technology transfer and commercialization activities.	Completion of directory of success stories	2020	OIC CECE Members
2.	Formulate Member States research and innovation regulation and policy besides developing commercialization models that protects the sanctity of intellectual property rights.	Establishment of policy and guidelines to undergo commercialization among Member States	>2020	OIC CECE Members
3.	Develop relevant funding mechanisms for research, innovation and commercialization	Establishment of funding mechanisms for commercialization activities among researchers	> 2020	OIC CECE Members
4.	Develop guidelines for establishing strategic research infrastructures developments and investments. (Incubators, tech parks, GMP labs)	Completion of the guidelines	>2020	OIC CECE Members
5.	Develop innovation and commercialization licensing and start-ups framework.	Completion of the framework	>2020	OIC CECE members
6.	Identify, develop and promote Member States indigenous technologies.	Database on OIC indigenous technologies	>2020	OIC CECE members

LONG TERM ACTIONS (2020 AND BEYOND):
KNOWLEDGE TRANSFER (2020 AND BEYOND)

No	Action	Target / KPI	Timeline	Implementation Partners
1.	Exchange of scholars	100 exchange of scholars	>2020	OIC CECE Members
2.	Mobility (students, researchers, leaders, educators, philosophers, etc.)	100 researchers undergo mobility programme	>2020	OIC CECE Members
3.	Translation of research works of OIC countries into common languages	Translated 20 works	>2020	OIC CECE Members
4.	Setting up of inter-library links and sharing of online resources	Inter-library links established	>2020	OIC CECE Members
5.	Raise the research prominence of OIC countries through the positioning of Islamic knowledge and worldviews anchored on indigenous knowledge systems, values and languages. The following are activities to be implemented : 1. Establishment of Research University (evidence-based assessment) 2. Honoring the custodians of knowledge through creation of OIC Laureate Award, e.g. OIC Laureate Prize, OIC Women Laureate Prize, OIC Philosopher Award, OIC Wisdom Award.	1. Establish research universities in 2 Member States 2. Establish OIC awards	>2020 >2020	OIC CECE Members