

ISESCO Center for Promotion of Scientific Research (ICPSR) was set up to promote and encourage the culture of sciences, technology and innovation in the Islamic world. It also seeks to reinforce the organic link between Research and Development (R&D), strengthen cooperation ties between ISESCO's Member States in the fields of science and technology (ST) and social sciences, and honor distinguished researchers (men and women) in Muslim countries. The Center also works on activating mechanisms relating to the implementation of strategies outlined by ISESCO and adopted by the Member States, including the **"Strategy for Science, Technology and Innovation in Muslim Countries"** and the **"Strategy for Developing ICTs in the Islamic World"**.

Following assessment of the achievements of the first and second Three-Year Plans conducted under the 2010-2018 Medium Term Plan, the ICPSR will focus in the years 2016-2018 on one sector-specific priority: **Supporting STI policies, and promoting the youth competitiveness in these fields**, the aim being to largely contribute to attaining the first strategic goal of ISESCO's 2016-2018 Action Plan: **"Involving the youth in the drive to boost joint Islamic action and achieve sustainable development"**. This priority includes **two projects** which mainly aim to promote prosperity for citizens of Member States, consolidate peace and security and achieve sustainable development in such a way as to ensure a better integration in the economy of knowledge which largely relies on information and communication technologies. The two projects are:

- 1- Project on supporting STI research strategies.**
- 2- Project on promoting knowledge transfer-based Research & Development for greater youth employability.**

The two projects will basically target women and the youth since half the population of the Islamic world is young. The youth are a "digital generation" who grow in a digital environment that pushes them to the heart of the knowledge community. As such, the youth may become a great resource for Member States of the Organization of Islamic Cooperation as they may help speed up and improve their progress. In this regard, Muslim countries should strive, through mastering modern technologies, to optimally benefit from their younger generations to achieve sustainable development and address the burning issue of joblessness among the youth who seek empowerment and good living-conditions. With the aim of speeding up the pace of socioeconomic development for Member States, the Center will work to boost the young peoples' skills and upgrade their capacities to make them very active elements in the process of change within our societies. Likewise, interaction between scientific circles and the industrial sector may boost the youth's chances to integrate the labor market.

1- Project on supporting STI research strategies

General framework:

Throughout history, STI (science, technology and innovation) have often been one of the key tools of human development as they have been used to make dreams come true. Thanks to information and communication technologies, which enable us to move forward faster than ever before, STI have provided us with unprecedented opportunities to meet the challenges of the 21st century. Today's knowledge creation signals the cardinal importance of standardizing "national innovation systems" as a linking factor between business corporations, universities and governments: this would allow for the stabilization of the labor market through adequate education and training of "highly qualified human capital" – an increasingly important component of economic growth in industrialized countries and the only way to ensure productive employment.

Within the framework of the UN new post-2015 Sustainable Development Agenda, built on the Millennium Development Goals (MDGs), and amid a competitive global environment where technology innovation is a vital part of the development process, ISESCO Center for Promotion of Scientific Research undertakes, under the Three-Year Plan 2016-2018, to continue its support for scientific research and coordinate research and strengthen its effectiveness in important areas relating to sciences and technologies to make it a lever of development in such a way as to contribute to attaining sustainable social and economic development in Member States. Aiming at promoting integration of higher education and scientific research policies in Member States, the Center will be committed to encouraging communication between different universities and scientific research institutions, and business corporations in Member States.

This project, which enjoys priority, given that it capitalizes on the experience and expertise accumulated by the Center under the two previous Three-Year Plans, shall include a set of activities tailored to the Member States' needs. In the light of the progress achieved, it will also suggest practical solutions and implement the recommendations and conclusions of the different relevant field studies. Furthermore, the Center will continue publishing "*ISESCO Journal of Science and Technology*" and strengthen national capacities in matters relating to sciences, technology and innovation (STI) through granting study scholarships and organizing practical training sessions, while prioritizing the gender aspect. At the same time, the Center, through regular updating of its website, shall strive to ease communication among scientists in the Muslim countries to promote networking and exchange of views and expertise. It will equally encourage the participation of women and the youth in scientific activities. The ICPSR website will also be a permanent and effective platform for international cooperation in different fields of sciences and technology.

Besides, the Center will provide more focus on supporting research works, through capacity-building activities for ISESCO Research Prize laureates, university laboratories and research centers.

Objectives:

- To support high profile scientists through disseminating the findings of their research works.
- To activate partnership between Member States to achieve more integration in fields of sciences and technology.
- To contribute to developing a competitive industry based on technology transfer through a cutting-edge national innovation system.
- To encourage the participation of women and the youth in the fields of sciences and technology.
- To honor Member States' distinguished researchers.

Areas of involvement:

- Sponsoring activities aimed at making high profile young researchers more visible through publishing their scientific research and articles.
- Awarding an Excellence Prize for STI.

Partners:

- Ministries of higher education and scientific research in Member States.
- Universities, research centers and excellence centers in areas of science and technology.
- International organizations, international government organizations, and all institutions active in sciences and technology.

Total budget:

US\$ 200,000.00

Area of involvement 1: sponsoring activities aimed at making high profile young researchers more visible through publishing their scientific research and articles

The main purpose behind publishing such scientific publication is to widely spread the findings of scientific research and enable scientists and researchers to share information and boost communication between them. For a decade now, ISESCO Center for Promotion of Scientific Research, through "ISESCO Journal of Science and Technology", has been publishing articles of Member States' young scientists in different science and technology-related disciplines to provide them with an effective tool to exchange scientific information and broaden their knowledge.

Not only does publishing scientific productions gauge the progress made in various disciplines of scientific research and development (R&D), but it also helps to transfer and localize technologies. It is also a tool to publicize authors as "there is no author without published works". Scientific production, being articles published in refereed and indexed journals or books issued by one or more authors, is an important criterion to distinguish scientists within scientific circles. Thus, editorial staff (peer reviewers), made up of eminent experts from ISESCO's Member States, will continue studying, evaluating and improving the quality of submitted works before publishing them. At the same time, they will maintain their efforts to meet the international quality standards with the aim of ensuring the indexation of the Journal by international organizations and obtaining the impact factor, which is an indication of the importance and influence of the Journal.

Furthermore, given the low representation of women in scientific careers, the causes of which are as much attributed to cultural as to anthropological and social factors, the Center will from now on promote gender equality in scientific publications. Indeed, strengthening the role of women in science and showing the public the progress accomplished in scientific knowledge through their work will undoubtedly stimulate young women to pursue numerous scientific career paths. Therefore, the Center will encourage more young women to engage in the amazing world of scientific research through the creation, by way of mentoring, of a network of "women researchers" backed by women scientists with well-established reputation in scientific research.

Expected outcome: upgrading the quality of ISESCO's Journal and updating the website (www.icpsr.org.ma) dedicated to scientific circles in Muslim countries

Performance Indicators	Measurement Indicators
<ul style="list-style-type: none"> • Publishing original and innovating articles relating to local communities in ISESCO Journal of Science and Technology. • Increasing the number of visitors to the website: www.icpsr.org.ma. • Incorporating gender in scientific research. 	<ul style="list-style-type: none"> • Publishing 2 issues of ISESCO Journal of Science and Technology each year. • Indexing of scientific articles to the most reputable databases, webs of science, Scopus, etc. • A marked increase in the number of visitors to the website: www.icpsr.org.ma. • Creation of a network of “women researchers” linked to female scientists with well-established reputation in the area of scientific research.

Area of involvement 2: awarding an Excellence Prize for STI

To pay tribute to men and women scientists in the Islamic world, ISESCO Center for Promotion of Scientific Research has been, since 1997, awarding ISESCO's Prize for Basic Sciences (biology, chemistry, geology, mathematics and physics) and Technology. ISESCO will maintain its support for other prestigious awards in sciences on the national or regional levels to encourage excellence in Member States. The main objective is to set up a mechanism for evaluating scientists and technology experts from

different scientific specializations and reward them for their outstanding efforts throughout their professional careers. The prize winners will be further honored in newspaper articles and ISESCO's website, or by awarding prizes at the sessions of the Islamic Conference of Ministers of Higher Education and Scientific Research or at ceremonies specially held for that purpose.

The prizes also aim to detect and highlight innovating or impact-making projects contributing to the move towards knowledge economy. They are also aimed at promoting the findings of research and maximizing their benefits to motivate collective innovation and develop the spirit of initiative. In addition, the Center will grant special incentives to young scientists with excellent expertise in science and technology, and to those of them who set up innovating projects which have a tangible effect in terms of improving the life conditions of their peoples. The prizes shall also seek to create an environment of constructive competition between young researchers and contribute to promoting scientific activities through motivating them to be more active and productive within the scientific communities.

Expected outcome: honoring, encouraging and rewarding excellent scientists and innovators through awarding prestigious prizes for sciences and technology

Performance Indicators	Measurement Indicators
<ul style="list-style-type: none"> • Number of prizes/grants/medals awarded in areas of scientific research, technology and innovation. 	<ul style="list-style-type: none"> • Awarding 18 prizes and/or grants, and/or medals in areas of scientific research, technology and innovation.

2- Project on promoting knowledge transfer-based Research & Development for greater youth employability

General framework:

Research and Development is at the heart of the debate on competitiveness through innovation. Its economic impact is fundamental to reflect its success. It is the result of an internationally-identified specific activity, i.e. knowledge transfer:

- a. **Exchange of human capital** (mobility of researchers and PhD students between university institutions (cf. the “Tafahum” Programme);
- b. **Transfer and sharing of knowledge through developing R&D partnerships between public research and businesses;**
- c. **Transfer of technologies** through their dissemination in the economic fabric and the creation of businesses.

Against this background, the Center wishes to instill a new dynamic to the transfer of public research in its member countries. This policy is part of a comprehensive strategy for research and innovation, with a two-fold objective: To meet the social challenges of today and tomorrow and make of research a major lever for growth and competitiveness on the market and enhance youth employment. These actions will be crossed in response to major social challenges such as generic technologies (nanotechnology, biotechnology, photonics, microelectronics, and digital technology) and research on energy transition. These measures represent a direct contribution of research to competitiveness through quality agenda, on the one hand, and will build on what exists and give a large part to consultations with stakeholders on the other.

Objectives:

- To promote complementarity between university institutions, companies and governments for sustainable economic development.
- To develop the culture of innovation and creativity and support the transfer and spread of new technologies within research institutions.
- To encourage technology transfer and help young graduates integrate new emerging specializations (ICTs, the internet).
- To provide practical training for teachers of sciences, engineers and technicians so as to increase skills and capacity for scientific equipment repair and maintenance, by promoting human capital transfer.
- To contribute to the advancement of science and technology in Member States through supporting research in STI.

Areas of involvement:

- Promoting scientific research through the exchange of students and researchers (Tafahum Programme).
- Capacity-building in the task of determining and activating indicators of knowledge transfer.
- Dissemination of a culture of transfer and innovation particularly benefitting Member States' youth (training and awareness-raising).

Partners:

- Ministries of higher education and scientific research in member states.
- Universities, research centers and excellence centers in areas of science and technology.
- Institutions concerned with intellectual, industrial and commercial property rights.
- International organizations, international government organizations, and all institutions active in sciences and technology (European Investment Bank, ESCWA, University Agency of Francophonie, World Bank).

Total budget:

US\$ 236,293.00

Area of involvement 1: promoting scientific research through the exchange of students and researchers (Tafahum Programme)

The overall and institutional framework of Tafahum program was approved at the 7th Islamic Conference of Ministers of Higher Education and Scientific Research held at ISESCO headquarters on 18-19 December 2014 in Rabat.

This program, which is implemented in close collaboration with the Directorate of Science and Technology at ISESCO and the Federation of the Islamic world communities, aims to promote research and development through the exchange of students and researchers and will undeniably contribute to improving educational cooperation and bringing together the academic communities of institutions of higher education in the three regions, Arab, Africa and Asia, from where its Member States are issued. This program, entitled Tafahum, which means "mutual understanding", is therefore an integral part of the overall strategy of bringing people together and intercultural dialogue for a society based on the values of solidarity, peace, understanding and mutual respect, in line with the universal values shared by the Islamic world.

To implement the program, a mobility unit was created within ISESCO. It is responsible for overseeing the implementation of the said program in all of its components. As ISESCO covers quite heterogeneous regional spheres (Asia, Africa and the Middle East), it was decided that this program, as a first step, will be limited to the Arab Mediterranean region (pilot phase).

Expected outcome: boosting the exchange of students and researchers among university communities within higher education institutions in 3 regions (Arab, African and Asian)

Performance indicators	Measurement indicators
<ul style="list-style-type: none"> • Effective launch of the Tafahum Programme 	<ul style="list-style-type: none"> • Preparation of the program and its implementation plan by deepening consultations with institutional partners; • Identification and consultations with member universities; • Defining types of mobility and related costs; • Drafting mobility model-contracts; • Defining the management structure and program management procedures; • Consultation meeting with Tafahum project partners.

Area of involvement 2: capacity-building on determining and activating knowledge transfer indicators

As a general rule, follow-up indicators relating to the activities of public research actors in ISESCO Member States are centered on scientific output and do not take into account the economic impact. Indeed, they are more driven by financial considerations (amount of funding research) than the economic impact (number of created jobs). Therefore, in consultation with public research actors, a new set of indicators relating to the transfer can be elaborated, which would highlight the important economic impact, that is the number of direct or indirect jobs created by a company belonging to public research. Follow-up and consolidation processes for these indicators have to be put in place in order to enable a sustained conduct and assessment of public policies.

Expected outcome: identifying transfer-related indicators for the assessment of scientific research impact on the labor market

Performance indicators	Measurement indicators
<ul style="list-style-type: none"> • Identifying transfer-related indicators. 	<ul style="list-style-type: none"> • Expert meeting to identify the transfer-related indicators. • Publication of a manual of indicators.

Area of involvement 3: dissemination of a culture of transfer and innovation particularly benefitting Member States' youth (training and awareness-raising)

Research and development cannot exist without the contribution of transfer-related jobs. Indeed, the professionalization of transfer-related occupations remains a real challenge, which is not yet recognized at its right value. The transfer jobs are based on specific skills, are real jobs, which need to be enhanced and professionalized, as is the case in industrialized countries. The Center, in close collaboration with the Science Directorate and the Ministries of Higher Education and Scientific Research of member countries, undertakes awareness rising actions of young entrepreneurs in general. For instance, universities in member countries may be required to:

- Carry out a training session for the benefit of public research executives;
- Provide postgraduate training sessions dedicated to exchange jobs; or
- Introduce a compulsory follow-up of a training module (master level) dedicated to innovation and entrepreneurship in all higher education modules. As international experience shows, the cultural factor is recognized as a major element in the ability to develop innovation. The challenges are related to the apprehension of risk and failure, to the spirit of entrepreneurship, and to acquiring some knowledge of innovation mechanisms, etc.

In addition, the major players in the transfer process are researchers, engineers and technicians of public research which form an essential component of the transfer process: Contributing to putting them in direct contact with the closest innovation and market businesses, particularly SMEs, without Intermediates, is the most effective way to accelerate transfer and ensure an economic impact of research. **On the basis of existing initiatives, a social network bringing together researchers and companies should be created.**

In addition, transfer through the creation of businesses issued from public research is an extremely powerful vector for technology transfer and economic impact, particularly by placing project holders in an economic activity-creation process. The main tools facilitating the creation of companies from public research that are the incubators, national competition for the creation of innovative technology companies, provisions for the mobility of researchers within this framework, etc. will be strongly encouraged by the Center, and must also be supported by the States.

Expected outcome: professionalizing knowledge transfer practices and creation of networks of relevant professionals

Performance indicators	Measurement indicators
<ul style="list-style-type: none"> • Encouraging capacity-building in knowledge transfer and business leadership; • Extending support to the establishment of Technology Transfer Offices (TTO) in Member States. • Activating networking among researchers and business enterprises. 	<ul style="list-style-type: none"> • Holding 3 seminars for the presidents of academic affairs at universities on the creation of a master level training program dedicated exclusively to exchange jobs. • Holding a meeting of experts on the creation of Technology Transfer Offices in 3 Member States. • 3 certifying training workshops dedicated to exchange jobs and entrepreneurship among youth. • Organizing a seminar on interactions between research institutes and the industry for better competitiveness and youth employment. • Creating a databank of researchers/businesses. • Organizing 3 days of networking between ISESCO Research Prize laureates (research prizes) and business circles and incubators.