



# **ISTIC Certified Training Programme on Science, Technology and Innovation (STI) Policy and Management for Developing Countries (ICPS)**

**8 – 15 September 2014  
Kuala Lumpur, Malaysia**

**Organised by**

**International Science, Technology and Innovation Centre  
for South-South Cooperation under the Auspices of UNESCO (ISTIC)**

**In collaboration with**

**Ministry of Science, Technology and Innovation (MOSTI)**

**United Nations Education, Science and Cultural Organization (UNESCO)**

**Islamic Educational Scientific and Cultural Organization (ISESCO)**

**Programme Coordinator**

**PRIMA Asia Pacific Consulting (PAPC)**

## **Background**

An important mandate of ISTIC is to assist UNESCO member countries develop and implement sound S&T policies. In this globalisation era of the knowledge and innovation economy, S&T has become more than ever a critical factor driving the development agenda of nations and assists South countries to develop the capacity to formulate and implement their national S&T policies. As for ISESCO, the objective of its science programme is to provide technical support to member states with a view to developing adequate research policies and programmes, in accordance with the needs of each state in term of technology. It is with this in mind that ISTIC has recently established an S&T Policy Consultative Unit to provide such assistance to member countries. ISTIC's Science, Technology and Innovation Policy Advisory Centre (ISPAC); is committed in developing professionals that will champion the development and implementation of science, technology and innovation for the developing and emerging economies

### **Essentials of Science, Technology and Innovation Policy – The Policy Framework Approach**

In 2013, ISTIC in collaboration with CPTM, ASM and MIGHT published a primer on STI Policy authored by Emeritus Professor Tan Sri Datuk Dr Omar Abdul Rahman. This now forms the foundation of the STI Management programmes for ISTIC.

### **The Essentials for STI Policy- Certification of Professionals**

In many developing countries, many professionals in government, in industry and serving nongovernmental organizations are challenged by the fast pace of technology change. Science and Technology is without doubt a strategic driver that contributes toward the shift from relatively lower end economic activities into high value added activities.

As such, professionals who understand the dynamics of science and technology within the context of economic and market development, are critical to help in designing blueprints and strategic implementation frameworks to lead strategic transformation within countries and organizations.

ISTIC is committed in ensuring developing countries are not left behind in the pursuit of economic advancement, impeded by the absence of a technological capability to harness new opportunities, that will generate income, jobs and revenue for government.

## **Objective**

The main objective of training workshop is to provide the necessary knowledge and sharing of experience to participants in order to ensure that they are in good position to face the challenges in driving socio-economic transformation through the strategic management of science, technology and innovation.

## **Workshop Content**

### **What Will A Learner Get from This Programme?**

Adult learners in this programme will be actively involved in:-

- Learning key principles related to STI Policy and Management
- Get to apply Best Practices in STI Management through Projects
- Acquire key competencies in :-
  - STI Policy and Management
  - Development of Policy Responses
  - Applying Technology Management Best Practices in implementing policies
  - Developing human capital agenda in delivering the STI policies
  - Creating Support Systems for the National Innovation System
  - Enhancing National Capacity in STI



<b>Expected Outcome</b>	<p>The outcomes of the training workshop are:</p> <ol style="list-style-type: none"><li>i) All participants will gain the necessary knowledge and experience on how to formulate STI Policy for their countries.</li><li>ii) The establishment of networking among and between participants from the various countries in the Developing Countries.</li><li>iii) Participants trained from the workshop can provide training and leadership on STI Policy formulation to other participants from their own countries.</li></ol>
<b>Participants</b>	<p>About 40 participants from G77 member countries will participate in this training workshop. 30 participants will be from developing countries, ISESCO member countries and 10 participants will be from Malaysia. The combination of participants from developing countries, ISESCO member countries and Malaysia will allow for exchange of knowledge, ideas and experiences as well as opportunities for networking and collaboration.</p>
<b>Workshop Duration and Venue</b>	<p>The training workshop will be held in duration of 8 days and will be held in Kuala Lumpur, Malaysia from 8 to 15 September 2014</p>
<b>Criteria for Participants</b>	<p>The participants should possess the following criteria:</p> <ul style="list-style-type: none"><li>• Those who have Bachelor's Degree, Master or PhD in science or related to Policy are preferred.</li><li>• Have experience or have been involved in the development and implementation of STI policy in their home countries.</li><li>• Participants who perform management functions in the middle and upper level of a government organization are preferred.</li><li>• Participants must have good command of English, both in verbal and writing.</li><li>• Participants must be in good health.</li></ul>
<b>Resource Persons</b>	<p>Resource persons will include experts from industry, as well as other local experts from universities and research institutions.</p>
<b>Modes of Delivery</b>	<p>The training workshop will be delivered by using the combinations of the following methods:</p> <ul style="list-style-type: none"><li>• Series of lectures.</li><li>• Group discussions and presentations.</li><li>• Case Studies.</li><li>• Study visits to selected local institutions and companies.</li></ul>
<b>Medium of Instruction</b>	<p>The training workshop will be conducted in English.</p>

## **Certificates**

ISTIC Certified Training Programme in STI Policy and Management (ICPS) will be awarded to participants upon successful completion of the course.

## **Allowances**

All sponsored participants will be provided with the following:

- Accommodation (10 nights)
- Food
- Related transportation expenses within Malaysia

**Participants are required to seek travel grant from their organizations to pay their travel expenses to Kuala Lumpur, Malaysia.** Limited travel grant from organizer is available for participants who are really in difficulties in getting travel grant from their organization which is to be based on merit and need on case by case consideration.

## **Application and Closing Date**

All applicants are required to complete the application form as attached in this brochure and submit as early as possible but at the latest by **30 May 2014** to the following address:

International Science, Technology and Innovation Centre  
for South-South Cooperation under the Auspices of UNESCO (ISTIC)  
c/o Academy of Sciences Malaysia  
902- 4, Jalan Tun Ismail  
50480 Kuala Lumpur  
Malaysia  
(Attn: Mr Abdul A'dzim Bin Abd Rashid, Science Officer)

Tel: +603-2694 9898

Fax: +603-2698 4549

Email: [adzim@istic-unesco.org](mailto:adzim@istic-unesco.org)

ISTIC will inform the successful applicants to the training workshop not later than **30 June 2014**. Application form also can be downloaded from  
Website: <http://www.istic-unesco.org>

## Programme CPSM

Date/ Time	8.30 am – 9.00 am	9.00 am – 10.00 am	10.00 am – 11.00 am	11.00 am – 12.00 pm	12.00 pm – 1.00 pm	1.00 pm – 2.00 pm	2.00 pm – 3.00 pm	3.00 pm – 4.00 pm	4.00 pm – 5.00 pm	5.00 pm – 6.00 pm	
<b>8 SEP (Mon)</b>	Registration	Opening - Welcome Address by ISTIC Chairman - Welcome Address by ISESCO Representative	Essentials of STI Policy by Tan Sri Datuk Dr Omar Abdul Rahman	Rise and Fall of Nations and the Role of STI	Group Activity 1	<b>LUNCH</b>	National Development STI Policy and Strategy	Group Activity 2		Introduction to the Six Components of STI by Tan Sri Datuk Dr Omar Abd Rahman	
<b>9 SEP (Tue)</b>		National STI Policy Responses – Prof. Dr. Thiruchelvam a/l Kanagasundram, UTM	The Malaysian Education Blueprint, MOE	The Six Components of STI – Issues and Recommendation – Group Activity			Developing the Biomass Industry and the Human Capital Pyramid	Intro on HC Pyramid and Group Activity 2			
<b>10 SEP (Wen)</b>	Intro on HHCD – Group Activity 1		Introduction to TMBP – Tan Sri Datuk Dr Omar Abd Rahman	Applying TMBP – Group Activity 1			TMBP and Policy Responses – Group Activity		Introduction on Innovation and Last Mile – Tan Sri Datuk Dr Omar Abd Rahman		
<b>11 SEP (Thu)</b>	Assemble at Hotel	Visit to SEDA – Supporting Renewable Energy Industry in Malaysia, Putrajaya		Creating A New Economy – The Green Economy – Green Tech Corp, Bangi			Funding Green Technology, MDV, Kuala Lumpur				
<b>12 SEP (Fri)</b>		Innovation in a Country – National Perspective (Singapore)	Commercialisation in USM	Comparing Commercialisation Models – Group Activity 1			Assessing the Ecosystem for Innovation				
<b>13 SEP (Sat)</b>		Introduction to Total National Capacity – Tan Sri Datuk Dr Omar Abd Rahman	S2A and Foresight – Dr Mohd Yusoff Sulaiman, MiGHT	Assessing Total National Capacity – Group Activity 2							
<b>14 SEP (Sun)</b>	Case Preparation – Each Group Part 1 – The Six Components Responses Part 2 – The TMBP Part 3 – The Human Capital Pyramid Part 4 – The Support System for Innovation Part 5 – Summing Up – The National Capacity for STI						Case Preparation – Each Group Part 1 – The Six Components Responses Part 2 – The TMBP Part 3 – The Human Capital Pyramid Part 4 – The Support System for Innovation Part 5 – Summing Up – The National Capacity for STI				
<b>15 SEP (Mon)</b>		Case Presentation by Each Group (40 mins)					Case Presentation by Each Group (40 mins)		Closing Ceremony		



Module	About The Module
<p><b>Introduction to Essentials of STI</b></p>	<p>Understanding science, technology and innovation (STI) policy and management and applying it in an effective and efficient manner is essential to all professionals involved in STI. In this module, participants will be introduced to the Five Templates for STI Policy and Management. It is a set of templates that have been developed to help professionals in this area to assess the readiness of organizations and programmes in delivering the anticipated objectives for the stakeholders. Among key elements within this module:</p> <ul style="list-style-type: none"> <li>▪ Economic Growth and Technology</li> <li>▪ Growth, Development and STI Management</li> <li>▪ Policy and STI</li> <li>▪ The Essentials of STI Policy</li> </ul>
<p><b>The Six Components of STI Policy and the Policy Responses</b></p>	<p>There are various ways of articulating an STI policy. It can be very academic and analytical in approached or concise and practical leading to a set of clear implementation strategies. However an STI policy which is an integral part, or supportive of a national socio-economic programme, then Policy Development for STI can be developed along these six components. They are:</p> <ul style="list-style-type: none"> <li>▪ STI Development Responses</li> <li>▪ STI for Policy and the appropriate Responses</li> <li>▪ Policy for STI and the appropriate Responses</li> <li>▪ STI and the Private Sector and the appropriate Responses</li> <li>▪ STI and the Community and the appropriate Responses</li> <li>▪ International Collaboration in STI and the appropriate Responses</li> <li>▪ STI and Governance and the appropriate Responses</li> </ul> <p>Participants will utilise the above six components to develop policy responses in addressing issues related to areas for the policy formulation.</p>
<p><b>Technology Management Best Practice Framework</b></p>	<p>Technology Management (TM) as defined by CPTM in 1997 is “The mechanism, processes and infrastructure needed to foster, promote, manage and sustain the development of scientific knowledge and technological innovation and related skills and expertise for the attainment and sustainability of the overall national development objectives”. Ten components that make up the Technology Management (TM) Framework as defined above, are identified as follows:</p> <ul style="list-style-type: none"> <li>▪ Political Commitment</li> <li>▪ Policy Integration</li> <li>▪ STI Advisory System</li> <li>▪ STI Policy Development Planning, Implementation, Coordination, Monitoring and Coordination</li> <li>▪ Infrastructure for STI Development, Acquisition and Dissemination</li> <li>▪ Funding &amp; Management of R&amp;D</li> <li>▪ Mechanism for Commercialisation of Research and Technology</li> <li>▪ Integrated Human Resource Development</li> <li>▪ Mechanism for S&amp;T Enculturation</li> <li>▪ Smart Partnership and Science Ethics Principles and Practices</li> </ul> <p>In this module, participants will utilise this framework to strengthen the delivery of the policy responses in the relevant areas.</p>

**The STI Human  
Resource Pyramid  
and the Holistic  
Human Capital  
Development  
Model**

In order to move the STI agenda, a total complement of people is needed. This can be referred to as the STI human resource pyramid, comprising champions at the top, down to the practitioners and implementers at the base. The pyramid comprises:

- Champions
- Advisors
- Popularisers
- Planners
- Managers
- Educators
- Practitioners and Implementers

The workforce for the innovation economy which is the key factor underpinning the five templates described earlier is the knowledge worker. Educating and training the knowledge worker so defined would require the holistic human capital (HHC) development approach which comprises six elements:

- Intellectual Capital
- Skills Capital
- Social capital
- Entrepreneurial capital
- Psychological capital
- Spiritual Capital

In this module, the participants will look at the readiness of the nation for a given area by assessing the readiness of the human capital based on the HC Pyramid and examine the depth of the human capital with reference to the HHC framework.

**Delivering  
Innovation and the  
Last Mile**

In the innovation economy, capacity to innovate and utilize innovation is the determinant of competitiveness. Delivering innovation is therefore a major goal of an STI policy. Technological or product innovation begins as an invention which results from a systematic R&D or from a trial and error tinkering. It is only when the invention is commercialized or in any other ways fully utilized that it becomes an innovation. The main components of the innovation ecosystem at the interface between prenovation and innovation include:

- Finance
- Human Capital
- Institutions
- Laws and Regulations
- Business and Innovation Enablers
- Management Systems

The participants will assess the state of readiness of the innovation ecosystem based on the above components.

**The Total National  
Capacity in STI**

When appropriate policy responses, checked against the 10 technology management best practice framework as well as the complete STI human resource are in place then a nation can be said to have a Total National Capacity (TNC) in STI. The TNC comprises:

- Committed Government
- Capable Scientific Community
- Innovative Private Sector
- Science Literate Society
- Efficient Governance System

Participants will be involved in determining the total national capacity of a country

The training workshop is jointly organized by the following organizations:

### **Co-Organizers**

- International Science, Technology and Innovation Centre (ISTIC)

### **In Collaboration with**

- Ministry of Science, Technology and Innovation (MOSTI)
- United Nations Education, Science and Cultural Organization (UNESCO)
- Islamic Educational Scientific and Cultural Organization (ISESCO)

### **Programme Coordinator**

- PRIMA Asia Pacific Consulting (PAPC)



The creation of the International Science, Technology and Innovation, centre for South - South Cooperation under the auspices of UNESCO (ISTIC) is a follow up of the Doha Plan of Action which has been adopted by the head of States and Government of the Group of 77 and China, during the meeting in Doha, Qatar, from 12 to 16 June 2005 on the occasion of the Second South Summit of the Group of 77. The Summit urged UNESCO to develop and implement a programme for South - South cooperation in science and technology with the objective of facilitating the integration of a developmental approach into national science and technology and innovation policies, capacity building in science and technology through providing policy advice and exchange of experience and best practices, and creating a problem solving network of centres of excellence in developing countries as well as supporting the exchange of students, researchers, scientists and technologists among developing countries. ISTIC will act as an international platform for South-South cooperation in science, technology and innovation and make use of the network of the G77 plus China and the Organization of the Islamic Conference (OIC). The overall goal of ISTIC is to increase the capacity for management of science, technology and innovation throughout developing countries. ISTIC Secretariat is hosted by the Academy of Sciences Malaysia (ASM) for five years before making ISTIC an autonomous organization. Details on ISTIC is available at [www.istic-unesco.org](http://www.istic-unesco.org)



UNESCO was founded on 16 November 1945. UNESCO functions as a laboratory of ideas and a standard-setter to forge universal agreements on emerging ethical issues. The Organization also serves as a clearinghouse – for the dissemination and sharing of information and knowledge – while helping Member States to build their human and institutional capacities in diverse fields. In short, UNESCO promotes international co-operation among its 193 Member States and six Associate Members in the fields of education, science, culture and communication. UNESCO is working to create the conditions for genuine dialogue based upon respect for shared values and the dignity of each civilization and culture. This role is critical, particularly in the face of terrorism, which constitutes an attack against humanity. The world urgently requires global visions of sustainable development based upon observance of human rights, mutual respect and the alleviation of poverty, all of which lie at the heart of UNESCO's mission and activities. Details on UNESCO is available at [www.unesco.org](http://www.unesco.org)





**MINISTRY OF SCIENCE,  
TECHNOLOGY AND  
INNOVATION  
(MOSTI)**

The Ministry of Science, Technology and Innovation (MOSTI) was formed after the restructuring of the former Ministry of Science, Technology and Environment (MOSTE) in 2004. MOSTI's main role include harnessing Science, Technology and Innovation (STI) and human capital to value-add the agricultural and industrial sectors and to develop the new economy, particularly through information and communications technology (ICT), and biotechnology. With the introduction of National Innovation Model in 2007, MOSTI's main goal is in transforming Malaysia from the knowledge - based economy, pivoting Science & Technology to Innovation and produces the wealth creation and societal well being. Malaysia's Innovation Model can best be described as a balanced approach between technology driven innovation and market driven innovation. In a technology driven innovation model, scientists are funded for R&D, and technology will be developed organically thus eventually commercializing their ideas for the global market. Whilst in a market-driven innovation model, the market is determined before hand by knowledge entrepreneurs who will acquire the best science and technology. This will provide rapid commercialization to meet the needs of the market. The Government continues to drive organic technology development from science, with a focus on raising the yield of taking science to technology; in particular by encouraging merit-based allocation of funding among public research institutions for S&T research; Priorities on basic research to be set based on national technology needs and the need to maintain national technology security. Details on MOSTI is available at [www.mosti.gov.my](http://www.mosti.gov.my)



**ISLAMIC EDUCATIONAL,  
SCIENTIFIC AND  
CULTURAL  
ORGANIZATION  
(ISESCO)**

ISESCO is a specialized institution under the umbrella of the Organization of Islamic Cooperation (OIC), which was set up following its Founding Conference held in Fez, Kingdom of Morocco on 3-5 May 1982. The objectives of ISESCO include strengthening cooperation among Member States in the fields of education, science, culture and communication, and promoting applied sciences and advanced technologies within the framework of the lofty and perennial Islamic values and ideals. Since its inception, ISESCO has been witnessing steady progress in discharging its civilizational mission and the duties developed upon it and in meeting its targets. At the level of prospective and strategic planning, sixteen major Strategies and their effective Implementation Mechanisms were laid down and 3 Medium-Terms Action Plans and 11 Three-Years Action Plans have been implemented. Various international, regional, and national activities have been planned and organized in cooperation with more than 200 specialized renowned institutions such as UN agencies, regional institutions and NGOs and prestigious national universities and research centres. ISESCO has lent support to young scientists and researchers in the Member States through its subsidiary institutes and centres of excellence like ISESCO Centre for Promotion of Scientific Research (ICPSR) and Islamic World Science Citation Centre (ISC), etc. The Headquarters of ISESCO is based in Rabat, the capital of the Kingdom of Morocco. Detail on ISESCO is available at [www.isesco.org.ma](http://www.isesco.org.ma)

**INTERNATIONAL SCIENCE, TECHNOLOGY AND INNOVATION CENTRE  
FOR SOUTH-SOUTH COOPERATION UNDER THE AUSPICES OF UNESCO (ISTIC)  
APPLICATION FOR TRAINING WORKSHOP IN MALAYSIA**

<b>FOR OFFICIAL USE ONLY</b>	Please affix latest passport photograph
Reference No:	
Received:	
Checked:	

**APPLICATION FORM (Typewritten or blocked letters)**

<b>Title Of Course:</b>  ISTIC Certified Training Workshop on Science, Technology and Innovation (STI) Policy and Management for Developing Countries	<b>Date, duration &amp; venue of course:</b>  8 – 15 September 2014 Kuala Lumpur, Malaysia
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**1. PERSONAL PARTICULARS:**

Family name (surname):	Date of Birth: (Date/Month/Year)
First name:	Nationality: (citizenship)
Other given names:	Gender: (Male/ Female)
City and country of birth:	Marital status: (Single/ Married)
Passport No:	Designation : Prof./ Dr / Mr / Mrs/ Ms _____

**2. COMMUNICATION AND MAILING ADDRESS**

Applicant's Office Address:							
	Country	Area	Number		Country	Area	Number
Office Tel No:				Mobile No:			
Office Fax No:				Email address:			
Person to be contacted in case of emergency (name, telephone and address):							



**5. REASONS FOR APPLYING THIS TRAINING WORKSHOP**

Please briefly state the reasons for applying this training workshop and how you hope to benefit this programme		
Have you participated in any training programmes in Malaysia before: YES/ NO If yes;		
Name of programme	Organizer	Date

**6. CERTIFICATION OF ENGLISH LANGUAGE PROFICIENCY**

	Excellent	Good	Fair	Remarks
Listening				
Speaking				
Writing				
Reading				
Mother tongue:	:			
Language test administered by	:			
Title	:			
Address	:			
Telephone No	:			
Email address	:			
Date and Signature	:			

**7. MEDICAL REPORT (to be completed by an authorized position)**

Name of Applicant:					
Age:	Sex:	Height:	cm	Weight:	kg
Blood Group:	A	B	AB	O	Other
Blood pressure					
Is the person examined at present in good health?			Is the person examined physically and mentally able to carry out intensive training away from home?		
Is the person free of infectious diseases (AIDS, tuberculosis, trachoma, skin diseases, etc?)			Does the person examined have any condition or defect (including teeth) which might require treatment during the workshop?		
List abnormalities indicated in the chest x-ray.			Pregnancy test (for women only):		
I certify that the applicant is medically fit to undertake a training workshop in Malaysia.					
Name of Physician: :					
Address of clinic (printed) :					
Telephone no (printed) :					
Email address :				Date:	
Signature of physician :				Seal of Clinic:	



**8. DECLARATION**

Have you ever been convicted by a Court of Law of any country? Yes/ No  
If yes, please give brief details:

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I certify that my statements in answer to the foregoing questions are true, complete and correct to the best of my knowledge and belief.

If accepted to the training workshop, I undertake to:

- i) carry out such instructions and abide by such conditions as may be stipulated by both the nominating government and the host government in respect of this course of training;
- ii) follow the course of study or training, and abide by the rules of the institution in which I undertake to study or train;
- iii) refrain from engaging in political activities, or any form of employment for profit or gain;
- iv) submit any progress reports which may be prescribed; and
- v) return to my home country promptly upon the completion of my course of studies or training.

I fully understand that if I am granted an award it maybe subsequently withdrawn if I fail to make adequate progress or for other sufficient cause determined by the host Government.

Signature of Application : \_\_\_\_\_

Name : \_\_\_\_\_

Date : \_\_\_\_\_

**9. OFFICIAL DECLARATION (to be completed by the Head of Department)**

The Government of .....  
nominates .....  
(name of applicant)

For the training workshop under the International Science, Technology and Innovation Centre for South-South Cooperation (ISTIC) and certifies that:

- i) all information supplied by the nominee is complete and correct;
- ii) the nominee had adequate knowledge and was appropriately tested for English Language proficiency.

Remarks: .....

.....

_____ (Name)	_____ (Signature of responsible Head of Department)
_____ (Designation) Official seal/ stamp	Address of Department/ Ministry _____ _____ Office telephone no: Office fax no: Email address:

Date:

*Note: INCOMPLETE AND/ OR UNENDORSED FORMS WILL NOT BE PROCESSED*