



KISTEP-ISTIC S&T INNOVATION TRAINING PROGRAM FOR HIGH LEVEL POLICY MAKERS 2013

11~15 November 2013

Songdo, Incheon, Korea

*"S&T P.I.E.-ing (Planning, Implementation & Evaluation)
Framework and its Applications to **Green Technologies**"*

Organized by:

Korea Institute of S&T Evaluation and Planning (KISTEP)

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

1. Overview

KISTEP-ISTIC Program has the ambition to develop and improve the S&T environment, infrastructure and policies in selected developing countries all around the world without any particular geographical, or any other, discrimination. It is therefore the plan of KISTEP to hold the five annual KISTEP-ISTIC Programs in five different parts of the world

This year's program will follow the P.I.E.-ing Framework and its applications to Green Technologies. The concept of this program is based on Planning – Implementation - Evaluation provides an approach for S&T management. The P.I.E.-ing approach works as a cycle, whose goal is to set the most suitable national S&T priorities and to implement them in the most efficient way.

The KISTEP-ISTIC Program 2013 will be held in **Songdo, Incheon, Korea, between Nov. 11th and 15th, 2013**. This program will provide the insight into how this systematic approach can be applied for Green technologies. This program will follow a schedule, which combines theoretical presentations with practically focused speeches, country reports, and study visit to relevant S&T sites in Korea (whole day program on day 5). Each session will be followed by a discussion, including questions and answers, in which all the participants are welcome to share their thoughts about the relevant topics and to clarify ambiguous items.



[S&T P.I.E-ing Concept]

2. Organizer

Korea Institute of S&T Evaluation and Planning (KISTEP)

KISTEP is a global institution specializing in S&T planning and evaluation with the aim of creating future value of S&T in Korea. The Republic of Korea has been able to accomplish a remarkable growth and advancements in the field of S&T, and KISTEP has played one of the crucial roles in this process.

Particularly, KISTEP has been playing a key role in the work of technology foresight, S&T policy planning, R&D priority setting, policy coordination, program coordination and budget allocation, R&D program evaluation. KISTEP has carried out its pivotal roles in 4 nation-wide technology foresights, 3 national S&T basic plans including "577 Initiatives", many national strategic technology roadmap including "Total Technology Road Map" and "Technology Roadmap for Green Growth", more than 50 meta- and In-Depth R&D program evaluations on strategically important programs including in-depth evaluations on Green Technologies, etc. KISTEP is also building and managing S&T observatory including "National S&T Information Service" and "K2 Base System". With the significant experience gained through its services to Korea, KISTEP has recently started to focus on the international dissemination of its expertise and on the global cooperation in the S&T evaluation and planning.

International Science, Technology & Innovation Centre (ISTIC) for South-South Cooperation under the auspices of UNESCO

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 12th to 16th June 2005 on the occasion of the Second South Summit of the Group of 77.

The Summit urged UNESCO to develop and implement a program for South-South cooperation in S&T with the objective of facilitating the integration of a developmental approach into national science, technology and innovation policies, capacity building in S&T through providing policy advice and exchange of experience and best practices, and creating a problem solving network of centers of excellence in developing countries as well as supporting the exchange of students, researchers, scientists and technologists among developing countries. As reflected by its name, the Centre 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. The overall goal of the Centre is to increase the capacity for management of science, technology and innovation throughout developing countries.



3. Program Agenda

	Nov. 11 (Monday)	Nov. 12 (Tuesday)	Nov. 13 (Wednesday)	Nov. 14 (Thursday)	Nov. 15 (Friday)
08:30~	Registration			Study Visit	
09:00 ~ 09:30	Opening	Technology Tree-ing and Capability Analysis	Strategic R&D Program Coordination and Budget Allocation		Country Report 4, 5
09:30 ~ 10:30	Dynamic Evolutionary History of S&T-fic Korea				
10:45 ~ 12:15	Introduction to S&T P.I.E.-ing Framework	National S&T Priority-Setting	Ex-ante Feasibility Study on New R&D Programs		Group Discussions
12:15 ~ 14:00	LUNCH				
14:00 ~ 15:30	Technology Foresight-ing	S&T Master Plan and its Role	R&D Program Evaluation	Study Visit	Wrap-ups and Sharings
15:45 ~ 17:15	Technology Roadmap-ing	Strategic S&T Policy Coordination	S&T Observatory and System of S&T-fic Knowledge		After KISTEP-ISTI C Program
17:15 ~	Country Report 1	Country Report 2	Country Report 3		Certificate Hand-over and Closing
18:00 ~	DINNER				

※ Each program will contain a case study of how to apply to Green Technologies.

4. Description of Key Sessions

Dynamic Evolutionary History of S&T-fic Korea

Korea has experienced a remarkable socio-economic growth over the previous five decades, which transformed a poverty-ridden agricultural country into one of the strongest Asian economies. The national S&T strategy has served as one of the engines enabling the dramatic transformation. Korea began developing its S&T infrastructure in 1960s, when the Ministry of S&T was established to coordinate and support the S&T activities. Korea further promoted S&T as a source of national competitiveness in 1970s and 1980s. Recently Korea is focusing on increasing efficiency of S&T efforts and expanding investments on the basic and fundamental research. Thanks to the proper and right S&T policies followed since 1960, Korea has become one of the leading countries in the field of S&T support. This lecture will provide a brief description of how Korea's S&T policies have evolved. All the participants will have chances to see the milestones of Korea's S&T development. This program is designed to give to the participants S&T-fic inspiration of how the right S&T-fic choices can transform one country into an advanced one.

Introduction to S&T P.I.E.-ing Framework

The concept of Planning-Implementation- Evaluation provides an approach for S&T management and continuous improvement of S&T activities on all levels, including policies, programs and projects. The P.I.E.-ing approach works as a cycle, whose goal is to set the most suitable national S&T priorities and to implement them in the most efficient way. The priorities and their implementation are periodically evaluated. The evaluation results have direct impact both on the planning of future S&T activities and on the improvement of the current ones. This lecture will show how the P.I.E.-ing framework works and thus will be an introduction to all the other lectures in the KISTEP-ISTIC Program 2013.

Technology Foresight-ing

Technology foresight is an S&T-fic instrument to prospect the future and thus to identify futuristic technologies with which to prepare for the future. In Korea technology foresight plays a role of the first chapter of S&T P.I.E.-ing framework. Technology foresight-ing identifies the set futuristic technologies with time horizon of about 25 years, and the technologies are the major R&D targets for the coming P.I.E.-ing activities. Due to its positional importance it is clearly articulated in Korea's S&T Basic Law that technology foresight-ing should be carried out every five years. This lecture will cover the concept of technology foresight, its role in S&T P.I.E.-ing framework and a wide range of methodologies. Also, brand-new results of Korea's 4th Technology Foresight-ing will be introduced, focusing on Green Technologies.



Technology Roadmap-ing

Roadmaps are defined as the views of stake-holders of diversity as a whole for the future. That is, technology roadmap is to show the directions: from “where we are now” via “how we can get there” to “where we want to go”. In this respect, we may have to think of technology roadmap-ing as a consensus-building process. Due to its futuristic nature technology roadmap is sometimes used as an instrument for technology foresight-ing. However, it may not be fully exploited due to its difficulty in customizing roadmaps to fit specific needs and/or circumstances. This lecture will cover the concept of technology roadmap, its role in S&T P.I.E.-ing framework and a wide range of contents and formats. Also, brand-new results of Korea’s Technology Roadmap-ing will be introduced, focusing on Green Technologies.

Technology Tree-ing and Capability Analysis

Technology tree or tech tree is a tree-shaped hierarchical visual representation of the possible sequences of sub-technologies. The range or scope of the particular technology is subject to adjustment according to the different hierarchical level. Tech tree is a starting point to analyze “where we are standing in terms S&T-ific capabilities”. Being aware of where you are today is crucial in determining the goal position to reach tomorrow. Without understanding the current situation, the world environment, your main advantages and challenges you are facing, it would be significantly difficult to reach the long-term goals. Thus, the proper assessment of current capabilities, the global environment and the competitive position of country development from the international perspective, are quite meaningful. This lecture will cover the concepts of technology tree and capability analysis, their roles in S&T P.I.E.-ing framework and a wide range of types and methodologies. Also, brand-new results of Korea’s technology tree-ing and capabilities analysis will be introduced, focusing on Green Technologies.

National S&T Priority-Setting

It is necessary to assess and identify the particular technologies, or sub-technologies, in a mutually comparable manner, so that the most efficient and most promising ones can be identified and further supported. The most common and most useful ones include the exploitation of matrix (or matrices), where multiple perspectives to the problem solution are possible. Among the selected criteria for assessment, there should be the importance (how important the field is for satisfying the needs and wishes of future), proficiency (what the current level of proficiency within the country is), resource intensity (what the amount of human, financial, or time resources needed to reach the desired level of development is), and level of experience (how much experience the national sector in the given field already possess). This lecture will cover the concepts of national S&T priority-setting, its role in S&T P.I.E.-ing framework and a wide range of types and methodologies. Also, brand-new results of Korea’s national S&T priority-setting will be introduced, focusing on Green Technologies.

S&T Master Plan and its Role

The Master Plan is the Compass in all S&T activities, in particular, containing the list of futuristic key technologies and their priorities and aiming at the systematic promotion of those futuristic key technologies. This means all of R&D policies and programs must be based upon the Master Plan. In this context Korea's S&T Basic Law clearly articulates that the S&T Master Plan should be re-newed every five years. This lecture will cover the concepts of S&T Master Plan, its role in S&T P.I.E.-ing framework and a wide range of types and methodologies. Also, brand-new results of Korea's S&T Master Plan will be introduced, focusing on Green Technologies.

Strategic S&T Policy Coordination

With the S&T-fic Compass, the S&T Master Plan, meaningful efforts should be followed and made in order to generate a total optimum as a sort of policy priority-setting. There are many stake-holders from ministries, industries, academia, etc., involved in S&T activities. In nature they are pursuing for their interests as a sort of local optima. Thus, it is quite important to accommodate angles of wide range and variety to S&T and thus coordinate them in the name of policy coordination as a sort of total optimum and maximum. Here, particular attention should be paid in order not to leave any important technologies or sub-technologies untouched. This lecture will cover the concepts of S&T policy coordination, its role in S&T P.I.E.-ing framework and a wide range of types and methodologies. Also, brand-new results of Korea's S&T policy coordination will be introduced, focusing on Green Technologies.

Strategic R&D Program Coordination and Budget Allocation

R&D implementation follows the policy coordination. Policy coordination provides guidelines to program coordination. Policy coordination will provide R&D programs with S&T-fic goals and proper budget estimates. It must ensure that the goals are reached through the most efficient ways. Thus, it is important not only to follow the strategy plan and to track the development in reaching the objectives, but also to continuously monitor changes in the R&D environment and eventually to adapt the activities to new circumstances. It must be also traced whether the proposed methods really correspond with the intended goals and, if necessary, more suitable modifications must be implemented. Here, particular attention should be paid in order not to leave any important technologies or sub-technologies untouched. This lecture will cover the concepts of R&D program coordination and budget allocation, their roles in S&T P.I.E.-ing framework and the processes and viewpoints. Also, brand-new results of Korea's R&D program coordination and budget allocation will be introduced, focusing on Green Technologies.

Ex-ante Feasibility Study on New R&D Programs

Frequently it is required to design new R&D programs with specific goals. Sometimes the imminent S&T-fic needs from technology foresight-ing may ask a country to prepare for the future. Mostly, with the S&T-fic Compass, the



policy/program coordination asks not to leave any important technologies or sub-technologies uncovered. In either case, it is necessary to design new R&D program to satisfy those asking from technology foresight-ing and/or policy/program coordination. However, it is extremely important to check if or not the new R&D programs are properly designed and thus prepared enough to satisfy the asking. Ex-ante feasibility study is being carried out, aiming to prevent any budget from being improperly invested on any unfeasible programs and thus to enhance the investment efficiency. In Korea ex-ante feasibility study has been mandatorily conducted with three angles of policy, economy and technology. This lecture will cover the concepts of ex-ante feasibility study, its role in S&T P.I.E.-ing framework and the processes and viewpoints. Also, brand-new results of Korea's ex-ante feasibility studies will be introduced, focusing on Green Technologies.

R&D Program Evaluation

There should be monitoring and evaluation on on-going R&D programs. It is to assure the efficiency and appropriateness of the R&D activities in all their phases. Before the activities are approved and, thus, actually executed, ex-ante feasibility studies must confirm their legitimacy and viability. Also, during the implementation phase, continuous evaluations must ensure the efficiency and appropriateness of the R&D activities on the levels of policies, programs and projects. Eventually, evaluations assess the results in comparison with the original goals. All evaluation reports must both assess the current status of the evaluated activities and offer suggestions for improvements. It is of utmost importance that the results of evaluation are considered by all relevant stake-holders during all relevant R&D activities. Otherwise, the evaluation couldn't serve its crucial purpose and may become useless. This lecture will cover the concepts of R&D program evaluation, its role in S&T P.I.E.-ing framework and the processes and viewpoints. Also, brand-new results of Korea's R&D program evaluation will be introduced, focusing on Green Technologies.

S&T Observatory and System of S&T-fic Knowledge

Any S&T P.I.E.-ing activities require S&T-fic evidences. Many stake-holders from ministries, industries, academia, etc are being involved at every gate of S&T P.I.E.-ing activity. At each gate S&T-fic angles of variety are being discussed and reviewed. Any S&T-fic policies, programs and projects are objects of review, monitoring and evaluation. This means that any decision-makings in any phases of P.I.E.-ing activities should be based upon appropriate evidences. Those evidences should be reasonable and acceptable to most of the stake-holders. In this context, Korea designed and is operating NTIS (National Technology Information System). Also, KISTEP is operating S&T observatory named K-Base System. This lecture will cover the concepts of S&T Observatory, its role in S&T P.I.E.-ing framework and the processes and viewpoints. Also, brand-new results of Korea's S&T observatory system will be introduced.

5. Travel & Hospitality

The organizer will sponsor the cheapest airfare ticket (economy special fare) and local hospitality to qualified international participants who are selected to attend this training program. For those participants who are willing to pay their own airfare, the organizer is agreeable to pay for their hotel accommodation and local cost.

6. Application and Enquiries

All applicants are required to submit application form and recommendation letter and applicant's C.V to following address:

Secretariat

KISTEP-ISTIC S&T Innovation Training Program for High Level Policy Makers
ISTIC, c/o Academy of Sciences Malaysia
902-4, Jalan Tun Ismail
50480 Kuala Lumpur
MALAYSIA

Tel: +603-2694 9898

Fax: +603-2698 4549

Email: info@istic-unesco.org

Website: www.istic-unesco.org

7. Criteria of Participants

Participants should be holding senior position such as Minister, Vice Minister, Director General or Secretary General of Ministry of Science and Technology or Ministry responsible for Science, Technology and Innovation from your country.

8. Closing Date

Closing Date of Applications: All applications should be submitted to the ISTIC secretariat office **by 22 July 2013.**

ISTIC will inform the successful applicants to the training workshop not later than 1 September 2013. Applicants who do not receive word within this date are rendered unsuccessful.

Application form also can be downloaded from www.istic-unesco.org

APPLICATION FORM

(Typewritten or blocked letters)

FOR OFFICIAL USE ONLY Reference No: Received: Checked:	Please affix latest passport photograph
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Title Of Course: KISTEP-ISTIC S&T INNOVATION TRAINING PROGRAM FOR HIGH LEVEL POLICY MAKERS 2013	Date, duration & venue of course: 11~15 November 2013 Songdo, Incheon, South Korea
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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:	Office Phone No:	
	Office Fax No:	
Email address:		
Mobile No:		
Person to be contacted in case of emergency (name, telephone and address):		

3. EDUCATION:

Name of institution and place of study	Major field of study:	Years of study	Degree

4. EMPLOYMENT RECORD:

A. Current Post:			B. Previous Post:		
Employer:			Employer:		
Duration of service:	From	To	Duration of service:	From	To
Title of post:			Title of post:		
Current monthly salary(US dollars):			Monthly salary (US dollars):		
Name of supervisor and title:			Name of supervisor and title:		
Type of organization: Government/Semi-Government/ Private/ NGO			Type of organization: Government/Semi-Government/ Private/ NGO		
Main functions of organization:			Main functions of organization:		
Total number of employees in organization:			Total number of employees in organization:		
Description of your current work including your responsibilities:					
*Please use supplementary pages if necessary					

5. REASONS FOR APPLYING THIS TRAINING PROGRAM:

Please briefly state the reasons for applying this training program and how you hope to benefit from this program	
Have you participated in any ISTIC training programs before: YES/ NO	
If yes;	
Name of program	Date

6. CERTIFICATION OF ENGLISH LANGUAGE PROFICIENCY:

	Excellent	Good	Fair	Remarks
Listening				
Speaking				
Writing				
Reading				
Mother tongue:				

7. DECLARATION:

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

8. OFFICIAL DECLARATION (to be completed by the Head of Department):

The Government / Organisation 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