

Course Information

2013

Information and Communication Technologies for Meteorological Services

October 6 - October 26, 2013

Seoul, Korea

CONTENTS

PREFACE. KOICA Fellowship Program

PART I. Program overview 07

PART II. Program module 09

PART III. Preparation for country report 10

PART IV. Preparation for action plan 12

PART V. Useful information 13

Appendix 1. Brand name of the fellowship program 17

Appendix 2. Fellows' Facebook & Twitter 18

Appendix 3. Map of Korea 19

KOICA Fellowship Program

The Korea International Cooperation Agency (KOICA) was founded as a government agency on April 1, 1991, to maximize the effectiveness of Korea's grant aid programs for developing countries by implementing the government's grant aid and technical cooperation programs.

In the past, development cooperation efforts were focused on meeting the Basic Human Needs (BHNs) of developing countries and on fostering their Human Resources Development (HRD).

However, the focus has now shifted to promoting sustainable development, strengthening partnerships with developing partners, and enhancing the local ownership of beneficiaries.

Additionally, global concerns such as the environment, poverty reduction, gender mainstreaming, and population have gained significant importance among donor countries.

Due to the continuously changing trends in development assistance efforts and practices, KOICA is striving to adapt to these changes by using its limited financial resources effectively on areas where Korea has a comparative advantage.

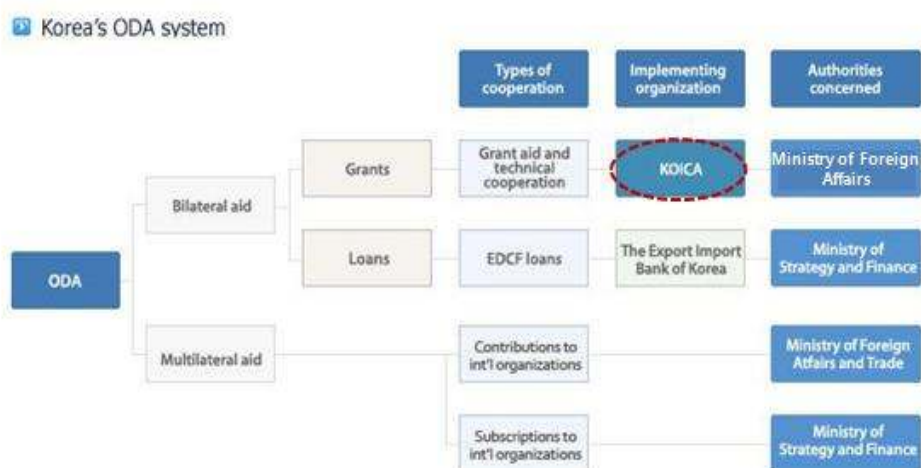
In particular, since Korea has the unique experience of developing from one of the poorest countries in the world to one of the most economically advanced, this know-how is an invaluable asset that helps KOICA to efficiently support the sustainable socioeconomic development of its partner countries.

Korea's ODA & Framework

Official Development Assistance (ODA) is composed of grants or concessional loans, which are provided to developing countries with the purpose of promoting economic development and welfare.

Korea's ODA is classified into three areas: 1) bilateral aid (grant aid & technical cooperation), 2) bilateral loans, and 3) financial subscriptions and contributions to international organizations (multilateral).

Bilateral aid is comprised of technical cooperation and various types of transfer (made in cash, goods or services) with no obligation for repayment, and is implemented by KOICA under the authority of the Ministry of Foreign Affairs in the Republic of Korea. Bilateral loans are provided on concessional terms under the name of the Economic Development Cooperation Fund (EDCF), implemented by the Export-Import Bank of Korea under the Ministry of Strategy and Finance. Multilateral assistance is delivered either as financial subscriptions or contributions to international organizations.



Korea's Experience and KOICA's Program for Human Resources Development

Human Resources Development (HRD) has been the most important factor in Korea's escape from vicious cycle of poverty and underdevelopment that had existed for many decades. With scarce natural resources, HRD played a vital role in modern Korea's development. Clearly, Korea has emerged as an exemplary showcase of national development powered by HRD.

From its own development experience, Korea came to fully recognize the significance of HRD, specifically in regard to Korea's collaboration with other developing countries. With much experience and know-how in HRD, Korea contributes greatly to the international community by sharing its unique development experience with other nations.

Since its establishment in 1991, KOICA supported a variety of international cooperation programs for HRD, mainly in project-type aid form, focusing on education and vocational training with a concentration in building a foundation for HRD.

The training and expertise-sharing programs help our partner countries build administrative and technical expertise in both the public and private sectors. In order to share experience at the grassroots level, under the name of World Friends Korea, KOICA dispatches Korea Overseas Volunteers to provide services in the fields such as education, regional development, computer science, health care and nursing. Approximately 7,806 volunteers have been dispatched to 57 countries thus far.

The training program provides opportunities to individuals from developing countries to gain first-hand knowledge of Korea's development experience. The purpose of the program is to enable the participants to apply what they learned for the development of their home country or local community. Since 1991, KOICA has offered 2,813 courses to 44,321 participants from 173 countries. There are a wide range of topics covered in the training program, including administration, economic development, science and technology, information and communication technology, agriculture and health. In order to meet the changing needs of partner countries, KOICA always strives to renovate and improve its HRD programs.

Part I

PROGRAM OVERVIEW

1. Title: Information and Communication Technologies for Meteorological Services

2. Duration: October 6 (Sunday) ~ October 26 (Saturday), 2013

3. Objectives

- a) To strengthen ICT capacity and numerical weather prediction application in national meteorological services
- b) To mitigate damage from severe weather through timely forecasts and warnings
- c) To offer many opportunities and challenges in delivering weather, climate and water services in the region with enhanced ICT and NWP capabilities
- d) To make available meteorological information needed to allow real-time exchange of information and provide efficient services in all countries

4. Number of Participants

15 participants from 3 countries:
Philippines (5), Bangladesh (5), Sri Lanka (5)

5. Language: English

6. Venue: Seoul, South Korea

7. Training Institute: Korea Meteorological Administration (KMA)

8. Accommodations: KOICA International Cooperation Center (ICC)
(<https://training.koica.go.kr>)

9. Qualification of Applicants:

- a) Participants should be junior or mid-level Meteorologists or Meteorological Technicians engaged in ICT and NWP sector
- b) Participants should be expected to work in the related field for at least two years after the program

- c) Participants should have sufficient command of both written and spoken English
- d) Participants should be in good health, both physically and mentally

10. Closing Date for Application: September 6, 2013

Part II**PROGRAM CONTENTS****1. PROGRAM MODULE**

Module	Lecture & Discussion	Study Visit
Module 1 Basic Information and Communication Technologies	<ul style="list-style-type: none"> - Linux Basic and its Application - Computer Networking - FTP server and Data Exchange - Information System Protecting 	
Module 2 IT Applications in Meteorological Service	<ul style="list-style-type: none"> - Weather DB Establishment - GTS Basics - PC-clustering and its Application - Observation System in KMA - Weather Radar Observing System - Weather Radar Operation and Process - Weather Satellite Observing System - Data collection and dissemination (WMO Information System, Combined Meteorological Information System, IT Weather Information Service) - Weather Information Networks - Marine Meteorology Monitoring System - WWW(World Weather Watch) Data Management 	<ul style="list-style-type: none"> - National Weather Center - National Earthquake Center - Information and Communication Center - National Meteorological Satellite Center (NMSC) - National Meteorological Supercomputer Center - Weather Station
Module 3 Basic Learning for NWP	<ul style="list-style-type: none"> - Program language for NWP - Program Library for NWP 	
Cultural Experience	Seoul City Tour, Field Trip(Ulsan, Pohang, Gyeongju)	

1. GUIDELINES FOR PREPARATION OF THE COUNTRY REPORT

Program participants are requested to prepare and submit their transformation (application) of training report and country report individually or as a group to Ms. Jiyouon Kim, Program Coordinator at the KMA via e-mail to wldusk@korea.kr by **September 13, 2013**.

2. TOPICS TO BE COVERED IN THE COUNTRY REPORT

- On the second day of Training Course, all participants will make an individual or group presentation titled “Country Report” which has been prepared as per the following guidelines.
- Based on what you have presented and discussed throughout the courses, you are requested to present Action Plans on the last day of the Workshop.

A. Program

- Possible subject: Analysis of Strength and Weakness in ICT for national meteorological services

B. Details of Country Report Preparation

- **National policies**
 - Explain ICT policies in national meteorological services
(Short-term or long-term plan: goals, priorities, strategies, etc.)
 - Explain main function and task of ICT part in the organization
- **Current situation**
 - Describe major challenges and opportunities facing your country
 - Analyze the strength and weakness of ICT in terms of data collection, NWP, and dissemination of weather forecast and warning information
- **Future direction and cooperation**

- Describe ICT needs based on the problem
- Describe participant's expectation from the training course
- **Please specify the information on ICT infra (hardware, software) in your organization.**
- **Country Report should also include the topic you would like to discuss for weather service improvement.**

1. GUIDELINES FOR PREPARATION OF THE ACTION PLAN

All participants are requested to prepare Action Plan Presentation at the end of the course. The Action Plan is to bring up each country's current problems and propose appropriate solutions in order to solve the problems.

It is a good idea for the participants to improve their presentation for Action Plan based on the knowledge acquired from the training course by making good use of their weekend or leisure time.

2. TOPICS TO BE COVERED IN THE ACTION PLAN

- a) Bring up various problems related to each country's current situation of ICT for numerical weather prediction and national weather and climate service
- b) Find out the best way of solving problems and make realistic and applicable proposals.
- c) Think about how it will affect the current problems and what advantages it will bring in the future.

1. TRAINING INSTITUTE

The Korea Meteorological Administration

The KMA is a governmental organization of the Republic of Korea under the Ministry of Environment (MOE). Its mission is defined to protect citizens' lives and properties from natural disasters and improve the commonwealth of the public in ways such as support for economic activities. In this regard, KMA undertakes the observation and analysis of meteorological phenomena on the ground, in the ocean, and in the atmosphere, while providing weather forecasts and warnings, and presents climate statistics and industrial-meteorological data. Furthermore, KMA exchanges meteorological data and information with domestic and foreign organizations, conducts research and technology development activities, and prompts international cooperation.

KMA's head administration consists of 1 administrator, 1 vice administrator, 7 director generals, 28 divisions, and 2 centers. Its subsidiaries include the National Institute of Meteorological Research (NIMR), 5 regional administrations, the National Meteorological Satellite Center, the Weather Radar Center, and the Korea Aviation Meteorological Agency. The total number of KMA staff is approximately 1,300.

KMA operates surface observation network consisting of 548 AWS sites, including 50 manned weather stations, an upper-air observation network consisting of 14 sites, a weather radar network with 11 sites, and a PM10 Asian Dust observation network with 28 sites. In addition, it operates 9 buoys, 9 AWS on lighthouses, 6 wave radars and 1 marine observation vessel for marine weather observation. KMA also manages the West Sea Integrated Oceanic Meteorological Observation Base Station at Bukkyeongnyeolbido in the West Sea, the Korea Global Atmosphere Watch Observatory in Ammyeondo, 49 seismic stations and 110 accelerometers.

The COmbined Meteorological Information System (COMIS) is KMA's system for collecting, processing, storing and disseminating the continuous flow of high-volume real-time data. This system enables the exchange of domestic and global (distributed via the Global Telecommunication System) surface, marine, upper-air, and satellite observations, all of which are used as initial data for numerical weather prediction models. A wide area network has been established to carry voice, video, alpha/numeric and graphic data.

Weather forecast products issued on a regular basis to support public activities include Digital Forecast, weekly forecasts, and 1- or 3-month outlooks. Warnings are issued to draw attention or give notice when serious weather hazards are anticipated. Warning products include heavy rainfall, heavy snowfall, strong wind, wind wave, aridity, storm tsunami, seismic tsunami, cold wave, typhoon, Asian Dust, and excessive heat warnings, and are classified into advisories and warnings. The Digital Forecast service divides the southern half of the Korean Peninsula into approximately 3,500 sections, and provides detailed and quantitative 3-day forecasts in a variety of formats for 3-hour intervals. This digital service provides nationwide forecast at a resolution of 5km by 5km, for convenient use and customization by users.

KMA started operation of NWP models in 1989. The primary goal of KMA's weather forecast is to produce seamless forecasts from very-short range to seasonal scale as well as to provide user-oriented quantitative forecast. To achieve this goal, KMA is currently operating a global (GDAPS) and two regional (RDAPS and KWRF) NWP systems, as well as a global ensemble prediction system (EPS) as main NWP systems. Various kinds of application models such as wave models, Asian-dust model, storm-surge and typhoon models, and statistical models are also being operated in KMA. KMA decided to introduce Unified Model system (UMS) developed by UK Met Office as KMA's next-generation NWP system. Based on this strategic plan, the operational global and regional NWP models have been replaced with UM, and the data assimilation system has also been upgraded from 3DVAR to 4DVAR from 2010.

2. REGULATIONS

- Participants should participate in the training to the best of their abilities
- Participants should refrain from engaging in political activity or any form of employment for profit or gain
- Participants must return to their home country upon completion of the training program and resume work in their country
- Participants should not extend the length of the training course or stay for personal convenience
- Participants are not permitted to change the flight schedule arranged by KOICA for personal convenience
- Participants should not be accompanied by any member of their family
- Participants are to assume responsibility for any personal expenses incurred regardless of implementation of the course
- Participants are required to strictly observe the course schedule and abide by the rules and regulations stipulated by the Korean government in respect to the training course
- Participants are not permitted to change the flight schedule arranged by KOICA for personal convenience

3. CONTACTS

- **Korea International Cooperation Agency (KOICA)**

- Websites: <http://www.koica.go.kr>

- **The Korea meteorological Administration**

- Program Coordinator: **Ms. Jiyoun Kim**

- Tel: (+82) -2-2181-0566

- Cell: (+82) -10-8634-1829

- Fax: 02-2181-0569

- E-mail: wldusk@korea.kr

Appendix 1.

Brand Name of the KOICA Fellowship Program

KOICA has launched a brand-new name for the KOICA Fellowship Program in order to more effectively raise awareness about the program among the public and its partner countries.

In English, CIAT stands for Capacity Improvement and Advancement for Tomorrow and in Korean it means “seed (씨앗)” with hopes to contributing in the capacity development of individual fellows as well as the organizations and countries to which they belong.



Appendix 2.

[facebook.com/koica.icc](https://www.facebook.com/koica.icc)

The Fellows' Facebook is a place for fellows to ask questions and write comments on KOICA fellowship programs. So, if you have questions regarding our program, please feel free to join our facebook community



twitter.com/koica.icc

Do you have a Twitter account? It seems everyone does these days. If you have a Twitter account, be sure to follow us @koica_icc



Appendix 3.

Map of Korea



"Please remember to read the Fellows' Guidebook. It is available from the Korean Embassy or KOICA Overseas Office in your country and provides valuable information regarding KOICA programs, allowances, expenses, regulations, preparations for departure and etc."