WORLD METEOROLOGICAL ORGANIZATION

IMPACT EVALUATION OF THE WMO FELLOWSHIP PROGRAMME

REPORT

June 2017

EXECUTIVE SUMMARY

The WMO Fellowship Programme is a key player in the attainment of the Organization`s Capacity Development goals. Much has been done by the Programme over the several decades for the capacity building of NMHSs of developing countries, particularly Least Developing Countries (LDCs) and Small Island Developing States (SIDs), but the demand for training is never ending and it revolves around the emerging dynamic issues relating to science and technology, human and societal needs. The evaluation was therefore undertaken to review the performance of the Programme especially its impact and benefits to the Members and how to enhance its delivery in a more sustainable way. The evaluation approach and criteria were based on the norms and standards of the United Nations Evaluation Group (UNEG).

Under Part A of the report - Situation Analysis of the Programme the history of the Fellowship Programme was reviewed noting how it all began, its evolution and its relevance to the United Nations System during the past decades. The implementation of the Programme during the period under consideration (2005–2015) was analysed highlighting the achievements and setbacks as well as the measures taken to address the setbacks. The analysis shows that considerable effort has been made to set the Programme in the right footing through decisions, measures and regular internal and external evaluations. The implementation of these decisions resulted in the Programme making major achievements during the period under consideration, taking into account that most of the recommendations of internal and external auditors on the Programme have been implemented in totality or partially.

Part B of the report deals with the Impact Evaluation of the FP taking into consideration the following main evaluation criteria: effectiveness, impact, relevance and sustainability. On the whole, the Fellowship Programme has been found to be very effective in helping developing countries, especially LDCs and SIDs to meet the increasing needs and demands of the NMHSs` for qualified and skilled staff so as to provide improved service delivery at the national, regional and international levels. The fellowship delivery has covered all the six Regions of WMO with RA I showing the highest need for fellowships followed by RA II and RA VI was the lowest. The demand-supply (how much of the total requests was awarded) picture showed that RA III was the highest with RA I the lowest. The comparison of the awarded and completion of fellowships overall showed a high completion rate only 0.3% listed as failed and 0.9% listed as withdrawn. Indeed the effectiveness of the FP was also attributed to the important role being played by partners in development and the WMO Regional Training Centres and other training institutions. It is recommended that the collaboration and interaction between these institutions and the Education and Training Department should be further strengthened taking into account the increased emphasis on online and blended learned to make the to make the fellowship delivery more effective.

The impact of the FP at the level of the individual fellow and at the national, regional and global levels has been positive and in some cases very positive. The Programme has helped the fellows to increase their scientific and technical knowledge base, upgrade their job performance and productivity, high quality work and improved expertize in research and publication. The fellowships enabled some to move to higher positions and responsibilities in their Services and have added great value to the operations and of the NMHSs thereby greatly enhancing their positive image and visibility. At the regional and global levels, the

impact of the Programme was also very positive. Several fellows have been engaged in networking with relevant partner/activities and have been participating in international events such as WMO constituent bodies, EC expert working groups and those IPCC and COP. Despite the positive impacts reported, more efforts need to be done by Members with regards to monitoring and reporting of post-fellowship activities especially the regular submission of fellows` 18 months impact report by the PR. In this regard, it is recommended that the decision taken by EC on this matter should be fully enforced by ETCOM.

The relevance of the Programme especially in term of its objectives has been strongly validated by the evaluation. Most of the respondents to the questionnaire agreed strongly with objectives of the FP and none disagreed. The Programme has been very supportive to the issue of gender equality, which is one of the top priorities in EC criteria for the award of WMO fellowships. The performance of the FP with regard to this matter, during the period under consideration, has surpassed the target of 30% set by the Organization on Gender Equality and Empowerment of Women. The current and emerging demands, which are in the increasing trend and how much of these could be met, is a good indication of the relevance of the Programme. The programme has been coping with new demands relating to climate change, disaster risk reduction and other scientific and technical issues. It is obvious that the high level of demand is reflective of the Members` needs and the relevance the FP to them. In this regard, it is recommended that extra funding, budgetary or extra-budgetary should be sought to continue help the developing countries meet some of these demands.

With respect to sustainability, it was noted that several measures have been taken by the NMHSs to have a strategy for continued capacity building and development of their Services. Some of the factors that favourably influenced the achievement of sustainability impact included staff motivation upon fellows‘ return to their countries, career development, knowledge transfer and conducive working environment. On the other hand, factors that influenced non-achievement of sustainability impact included the quality of training provided, the language barrier suffered by some Members and the high cost of training in some centres. In order to partially address the high costs in long-term training, it is recommended that the cost-sharing and cost–effective measures that have long been introduced into the Programme be further enforced and in-country training with the use of expertise from more developed or developed countries encouraged as and when deemed fit. In view of the achievements of the Fellowship Programme, it is further recommended that a framework for a sustainable strategy of the Fellowship Programme be developed in the future.

The overall conclusions and main recommendations of the evaluation are provided in Part C of the report.

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PART A – SITUATION ANALYSIS

1. INTRODUCTION

An “Impact Evaluation of the Fellowship Programme” was carried out from 1st December to 31 March 2017. The need for the evaluation resulted froma decision by the 68th session of the WMO Executive Council held in Geneva in June 2016 **(**see Annex I (a) in recognition of the importance of the WMO Fellowship Programme (FP) to many Members. The history of the Programme, which commenced back in the sixties, has shown the progressive development of FP from when many countries in the developing world were just gaining independence and had little opportunities to train their personnel in the National Meteorological Services (NMHSs) to now when most of the NMHSs are able to operate on daily basis with skilled and competent staff. These Services particularly those from the Least Developing Countries (LDCs) and Small Island Developing States (SIDs) able today to deliver the services much needed the growth and socio-economic development of their nations thanks to several factors including the assistance provided by WMO through its Education and Training Programme and in particular, the Fellowship Programme.

The Programme has gone through many challenges and in order to address these challenges, it was necessary to put in place a fellowship process that would ensure fairness, transparency, effectiveness and efficiency as well as geographical distribution and gender equality in the awarding fellowships. The period starting from 2004 was therefore a landmark when several decisions and recommendations were made to bring about constructive and lasting changes in the implementation of the Programme so as appropriately address the ever-increasing demands for training by Members. It is now more than a decade that consolidated efforts have been made by WMO and its partners to lay down a strong foundation for the Programme that would help cope with new and emerging needs of countries which are resultant upon the dynamic changes in science and technology the world is facing

The evaluation was carried out for the period 2005 to 2015 based information sources including the WMO Fellowship Database, questionnaires sent to selected WMO Member countries in February 2017 and the ETR Human Resources Survey that was executed in early 2017. Analysis have carried out on basis of the following main criteria: Effectiveness, Impact, Relevance and Sustainability. On the whole, the Fellowship Programme has been found to be very effective with great impacts to the beneficiary Member countries as well as at regional and global levels. It was also shown that the Programme and its objectives are very relevant to Members and contributes significantly to the fulfilment of the mandate of WMO. The main findings are described in Chapter 6 of the report and the conclusions and recommendations are provided in Chapter 7.

2. BACKGROUND, OBJECTIVES, SCOPE, METHODOLOGY AND LIMITATIONS

a. Background

The Fellowship Programme FP) is a main component of the Education and Training Department (ETR) that was established in 19601 in response to an urgent need by Members in the developing and least developed countries to train meteorological staff. It started with studies of short duration in aviation meteorology mainly with the support of UNDP. But as the demand for well-trained and skilled personnel from Member countries, especially from Africa, Central and South America increased, long-term fellowships for under-graduate studies in meteorology at universities were introduced. Later, fellowships were broadened to include other fields of meteorology, hydrology and related environmental studies.

By 1965, the Programme gained impetus with the availability of new funding for long-term fellowships such as the New Development Fund, the Voluntary Assistance Programme (VAP) funds in addition to United Nations Development Programme (UNDP). When the UNDP arrangement ended, the World Meteorological Organization (WMO) Congress (Cg-V) in 1967 decided for the first time to approve funds from the Regular Budget to finance long-term fellowships. Trust funds from Members were introduced as additional resources to the Programme, but these could barely meet the demand for increased capacity to cover new areas and provide more fellowships. An urgent solution was needed, so WMO reinvigorated its effort to reach out to new partners.

While the Programme is implemented through the ETR in DRA, it constitutes an integral part of capacity building of each WMO scientific programme. Since its inception over 50 years ago, the Programme has assisted countless National Meteorological and Hydrological Services (NMHSs) of WMO Member countries, providing them with experts that play key roles in the fields of weather, climate and water. The selection process of fellows and overall management of fellowships became more effectively coordinated through the defunct WMO Fellowship Committee (FELCOM) that was established in 2004 and which is comprised of senior staff from scientific programmes and REM. The Executive Council (EC) and Congress routinely review the Programme's operations, as appropriate, within the context of periodic Organization-wide programme performance reports. In June 2016, the 68th Executive Council, taking note of the importance of the WMO Fellowship Programme to many Members and its contributions to the wider WMO Capacity Development Programme decided that an impact evaluation of the Programme should be undertaken. This evaluation is therefore a fulfillment of the EC decision. The terms of reference of the evaluation are attached in Annex I (b).

b. Objectives of the Evaluation

The objectives of the evaluation are: i) to examine the implications of the decision of EC 68 10.2/4 vis-a-vis the mandate of WMO in the area of education and training with a view of identifying areas where activities of its fellowship programme are expected to make an impact; ii) identify the benefits accrued through fellowships to the Members, with the aim of making a case for enhanced delivery of the WMO Fellowship programme; and iii) to seek increased fellowship opportunities to NMHSs in WMO Member States so as to improve their operations and contributions to current and future national development needs.

c. Scope and limitation

The evaluation covered the overall activities of the Fellowship Programme and the benefits derived by Member States during the period 2005 and 2015. The role and responsibilities of the various stakeholders including Members and partners in development, as well as the administration and management of the Programme by WMO were taken into account in the exercise. The evaluation also took into account the recommendations of

[1] Sir Arthur Davis, "FORTY YEARS OF PROGRESS AND ACHIEVEMENT, A Historical Review of WMO"

audits of the Programme that have been carried out by external auditors and the WMO Internal Oversight Office (IOO). The limitations in the evaluation process were those relating to the fellowship database, post-fellowship reporting from Members and not being able to have feedback directly from fellows due to too many alumni and the difficulty in administering a survey to such a large audience. These limitations, however, did not have an impact on the validity of the findings and conclusions

d. Methodology

i. Approach - WMO's evaluation approach and criteria are based on the norms and standards of the United Nations Evaluation Group (UNEG). The evaluation started with a preliminary review of documentation, files, the fellowship database, websites and other sources relevant to the WMO Fellowship Programme.

ii. Matrix - An evaluation matrix was developed to guide the data gathering and analysis process (see Annex II). The matrix provided details of the issues to be addressed, questions to be covered, as well as sources of information and information-gathering methods for each issue. The stakeholders consulted in the evaluation included WMO Members; WMO Secretariat (ETCOM and technical programmes contributing to or having linkages with the ETR); Governance (members of EC Panel on Education and Training) and ETR partners in UK, USA and France. Copies of the questionnaires are attached in Annexes III (a) and (b).

iii. Data Collection - Data collection methods included literature and documentation review, Fellman Plus database, IOO reports and limited face-to-face and telephone interviews with Permanent Representatives of WMO member Countries and staff of NMHSs including those of Cote d'Ivoire, Gambia, Indonesia, Malawi, Myanmar Namibia, Pakistan, Senegal, and Zambia. Data was also collected from the ETR Survey on Human Resources conducted in 2017, a short questionnaire (1) sent to 14 mainly developed countries and the main evaluation questionnaire (2) that was sent electronically with a letter from the Secretary-General to 46 developing countries spread in six WMO Regions. The deadline for response to the electronic questionnaire was set for the 24 February 2017. A copy of the letter is attached in Annex IV.

Questionnaire (1) was destined mainly for the developed countries that have been contributing significantly to the programme but are not the main target group for the survey i.e. developing countries. It was felt necessary to sound their views and opinions about the programme as important partners.

With regard to questionnaire (2) which is the main one for the Survey, a sample of 46 selected countries was decided upon bearing in mind that ETR conducted a survey on human resources that started in 2016 just before the beginning of the impact evaluation and Taking into account Members' fatigue on the many questionnaires being frequently sent to them by WMO, it was decided to focus the evaluation to a selected number of developing countries that have been active or have benefited most from the Programme. Copies of the questionnaires and the list of selected countries for both questionnaires are provided in Annexes III and VIII respectively.

iv. Data Analysis and Reporting - The data and information collected from multiple sources was analyzed to come up with a report responding to the evaluation terms of reference and highlighting the principal findings of the evaluation. Details of the analysis and findings are described under Chapter 6 of the report.

3. HISTORY OF THE WMO FELLOWSHIP PROGRAMME AND ITS RELEVANCE TO THE UN SYSTEM

a. The Education and Training Programme

The Education and Training Programme (ETRP) is a Major WMO Programme that is regarded as one of the most important and fundamental means of helping to enhance the capability and efficiency of a National Meteorological and Hydrological Service (NMHS). When WMO's predecessor, the International Meteorological Organization (IMO), was formed in 1873, meteorological activity existed in relatively few countries and the science of the atmosphere was slowly developing. IMO therefore gave high priority to education and training and in 1951, when it was replaced by the intergovernmental World Meteorological Organization, the new body had additional reasons for continuing to stress the importance of education and training as responsibilities of Meteorological Services became clearly much wider in scope.

In 1960, the twelfth session of the Executive Council noted that the demands upon WMO for support in the various sectors of education and training were growing and were already exceeding the resources of the WMO Secretariat. The Council gave special attention to the problems in the developing countries of Africa and Asia agreed on: i) the professional training of all grades of meteorological staff in the less-developed countries; ii) the Plan for meteorological training in Africa; iii) the establishment of a Training Section in the WMO Secretariat. These decisions of EC that were taken as a result of in-depth study and ensuing discussions provided the foundations of the WMO Education and Training Programme that is being implemented up to today.

The ETRP was therefore established in response to an urgent need by Members to train staff of the NMHSs in particular developing and least developed countries (LDCs) and countries with economies in transition and to assist in coordinating the international aspects of such training. It helps in obtaining personnel specially educated and trained to internationally agreed standards in order to carry out the activities and operations of NMHSs required at the global, regional and national levels for the effective provision of meteorological and hydrological services in support of sustainable development of Member countries.

The Programme is implemented under the coordination and guidance of the WMO Executive Council Panel of Experts on Education and Training, which serves as an advisory body on all aspects of technical and scientific education and training in meteorology and operational hydrology. The Education and Training Department (ETR) that is under the Department of Regional Activities (DRA) in the WMO Secretariat manages the ETRP. The Department is comprised of two Divisions, namely: the Training Division and the Education and Fellowships Division.

b. Evolution of the WMO Fellowships Programme

Human resources development is a basic necessity for the technological and socio-economic advancement of any nation. According to Sir Authur Davis, the need for trained and skilled personnel for the newly independent developing countries at the beginning of 1960s was evident. Funds were made available by UNDP mainly for specialized and postgraduate courses and not for studies leading to a university degree. In order to meet the urgent need to train meteorological staff on a much larger scale and to encourage well-

educated young people to become professional meteorologists, WMO introduced a system of long-term fellowships covering attendance at universities. Since fellowships of this type were not eligible for UNDP support, a New Development Fund (NDF) was set up by WMO in October 1965.

The Fifth WMO Congress in 1967 recognized that the training of staff for the Meteorological Services of developing countries should be accorded very high priority and therefore took the decision to allocate US $500 000 from the WMO regular budget to be utilized fully for long-term fellowships. In 1968, WMO took a further step by launching the Voluntary Assistance Programme (VAP), to help national Meteorological Services to implement the World Weather Watch Programme (WWW), noting that adequate numbers of trained staff were essential for the success of the WWW. Long-term fellowships were therefore included in the VAP scheme and a number of donor countries responded generously, in some cases offering courses of study for up to five years.

WMO`s efforts continued in 1969 when proposals were submitted to UNDP for a "special fund project" for meteorological training, which became classified as a regional project covering a wide range of activities. Under this scheme some 47 fellowships were awarded for study in the universities of Buenos Aires, Costa Rica and Rio de Janeiro and at the Caribbean Institute of Meteorology in Barbados. Encouraged by this success, UNDP approved a similar project for African students to receive fellowships for attendance at the East African Institute for Meteorological Training and Research in Kenya, Nairobi. These institutions were later recognized as WMO Regional Training Centres (RTCs) and the categories of education and training currently include basic university degree studies, post-graduate degree studies, non-degree studies, specialized training courses, on-the-job training, as well as technical training for the operation and maintenance of equipment. In this regard, the WMO Fellowship Programme now encompasses three components namely: i) Fellowships, which can be very short-term (less than a month), short-term (less than six months) or long-term (more than six months); ii) Group training; and iii) Familiarization visits.

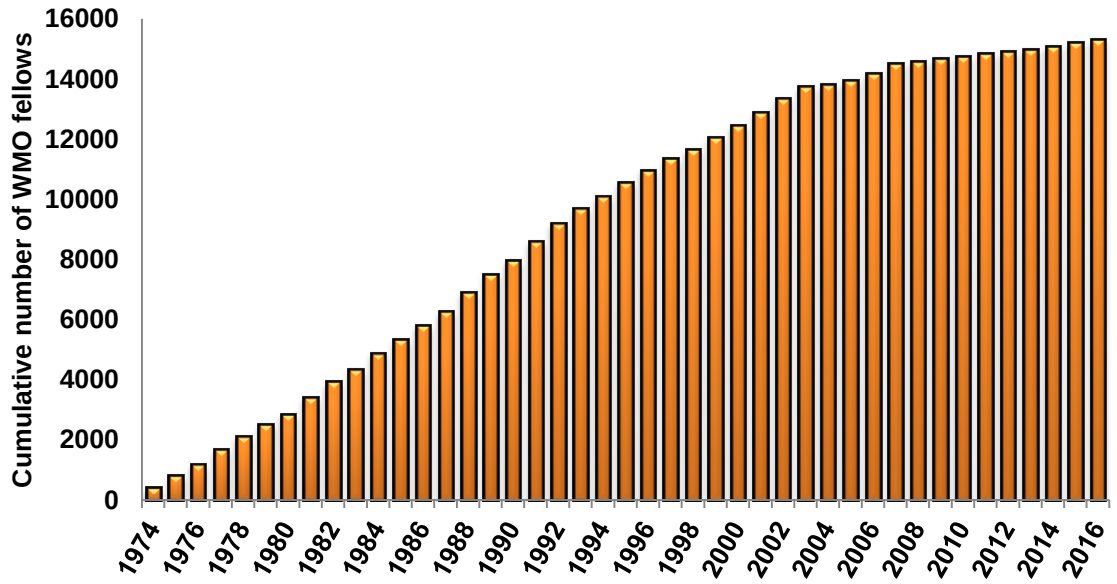


Fig. 1 Cumulative number of fellows trained over the past decades

Fig. 1 above is an update of ETR presentation[2] that was derived from the Fellman database. It shows that over the past decades, thousands of experts have been trained as meteorologists and hydrologists through the WMO Education and Training Programme. Training is provided mainly abroad on subject areas and technologies for which facilities and teaching expertise are not available at home. In view of the rising costs of fellowships especially for long-term studies, emphasis continues to be placed on cost-sharing and on using as a first priority, the training facilities within the regions concerned, in particular the 26 WMO Regional Training Centres (WMO RTCs) of the Organization. The planning and management of the Programme are closely coordinated with the RTCs and with the staff involved in the various scientific programmes taking into account that fellowships constitute an integral part of the capacity development activities in each of the WMO scientific programme areas,

In 2004, there was a major shift in the way fellowships have been awarded and managed at WMO as a result of management issues leading to loss of resources that was uncovered in 2003 in the Fellowships Programme. Auditors and consultants reviewed the operations and controls pertaining to the Fellowship Programme and issued recommendations primarily aimed at putting in place processes against re-occurrence of the issues by strengthening internal controls. The major recommendations included: i) the setting up of a Fellowships Committee to decide on fellowship awards; ii) issuing and implementing a Fellowships Manual; and iii) developing a database to keep an accurate record of fellowship applications, awards and history. The 56th WMO Executive Council held in June 2004, noted with satisfaction the new initiatives and appropriate measures taken by the Secretary-General to ensure the highest possible level effectiveness, fairness and equity in the distribution among disciplines in the Fellowships Programme. It was observed that those innovative measures would increase the efficiency and transparency of the Fellowships Programme and would also assist Members in their requests for WMO fellowships and study tours. This brought to the fore the importance of monitoring and evaluating activities in the post-fellowship period for up to two years and the recognition that such activities would require more resources as well as recipient Members' commitment to ensure such activities.

In line with the new measures, the WMO Secretariat in collaboration with Members and development partners have been actively engaged during the past decade in taking appropriate and timely actions on the education and training reform process by implementing a number of important decisions made by the WMO Congress and EC, as well as audit recommendations which further helped improve effectiveness and transparency of the Programme. These include, amongst others:

- Publication of the "*Manual on Policies and Procedures for WMO Fellowships" in 2006*, which was meant to serve as a tool for the management, internal control and coordination of fellowships implementation. This was followed by another Publication: "*Guidelines for Applying for a WMO Fellowship*" in 2013 that was meant to help Permanent Representatives (PRs) and potential candidates to make informed decisions about applying for a WMO fellowship;

- Establishment of a standing Training Management Team (TMT) for the cross programmes coordination of all WMO-assisted training events within the framework of

[2] Dr Yinka Adebayo -"WMO FELLOWSHIP PROGRAMME" – presentation at the 19th SFO meeting

matrix management to ensure that human and financial resources were used effectively and to deliver high-quality specialized training in weather, climate and water subjects;

- The revised version of the Executive Council Criteria for the award of WMO Fellowships that was approved by EC-66 in June 2014;

- WMO`s proactive efforts in recent years to reach out to new partners including the Official Development Assistance (ODA) Countries to expand the range and number of fellowship opportunities available to Members that led to the conclusion of many agreements. In addition to the core offers of education and training at WMO RTCs, there are now opportunities for study in multi-disciplinary themes in Australia, Germany, Japan, Korea and USA and the United Kingdom of Great Britain and Northern Ireland. These new offers are designed to support Members in the high priority activity areas of the Global Framework for Climate Services, agriculture and food security, disaster risk reduction, health and water.

As the challenges to train more experts in meteorology, hydrology and allied disciplines continue to grow, the Secretary-General continues to appeal to Members and partners to offer agreements with WMO, for the joint provision of fellowships for the education and training of the next generation of experts from least developed, developing and small island developing countries.

c. WMO Fellowship Programme in the UN System

When WMO became a Specialized Agency of the United Nations in 1951, collaborative arrangements were established with other organizations throughout the UN family, including the UN Technical Assistance Programme that was geared to assist mainly those countries that had recently gained their independence. WMO was involved in the implementation of this programme at an early stage in providing experts to advise in all aspects of organization and training in meteorology.

With other Specialized Agencies, WMO was a member of a sub-committee set up by UN to ensure co-ordination of the various training programmes, which to some extent contained overlapping elements. During the ensuing period between 1950 and 1960, WMO's responsibility for meteorological training received recognition especially when the International Civil Aviation Organization asked WMO to advise on the meteorological content of courses to be given at its Regional Training Centres. In early 70s, training and fellowship activities of the UN agencies continued to be on the rise in response to pressing development needs of many Member States. In order to promote the exchange of information and to reach a common position on various issues pertaining to fellowships, system-wide services were in need of a main organizational framework with appropriate coordination machinery. In 1974, the Administrative Committee on Coordination (ACC) approved the convening of the First Meeting of the Senior Fellowships Officers (SFOs) of the UN System that was established to promote the exchange of information within the UN System on various issues pertaining to human resources development, capacity enhancement, training and fellowships. Since then, this forum has been meeting biennially and the United Nations Department of Economic and Social Affairs (UN/DESA) and its predecessors have served as Secretary and Focal Point for inter-agency fellowship coordination.

The 15th WMO Congress (2007), took note of the ongoing collaboration of the WMO Education and Training Programme with training programmes of other international organizations, including the Food and Agriculture Organization of the United Nations (FAO); International Civil Aviation Organization (ICAO); International Maritime Organization (IMO); United Nations Educational, Scientific and Cultural Organization (UNESCO; United Nations Environment Programme (UNEP); and United Nations Development Programme (UNDP) and recommended that such collaboration should be continued and expanded.

Since then, WMO has been participating actively in the biennial meetings of the SFOs within the UN System providing the opportunity for WMO to compare and contrast on issues of relevance happening within the United Nations System. The presentation: "WMO Fellowships Programme-monitoring and evaluation" made at the 17th Meeting of the SFOs, held in UK in November in 2008, generated a lot of interest and discussions amongst the participants. The Meeting noted that the steps being taken by WMO including the establishment of FELCOM and the monitoring of fellowship activities are in line with the key milestones pathway for impact assessment of fellowships. At the 19th SFO Meeting held in Italy (2012), WMO was again featured amongst the active participants. The Meeting discussed the topic "Working Smarter: Efficient and Effective Fellowships Programme Management". It was noted that working smarter required bold initiative to change mindsets, restructure what seems outdated and adapt the working habits and methods to the current needs of all stakeholders. WMO's continued active participation in these biennial meetings and other UN-related meetings has been found beneficial especially in the enhancement of effective delivery and harmonization of the different aspects of fellowship implementation within the UN System.

4. MODALITIES FOR IMPLEMENTATION OF THE WMO FELLOWSHIP PROGRAMME

a. Method and Approaches

Significant changes and developments have been made in the method and approaches regarding the implementation of the Fellowship Programme with the establishment of Fellowship Committee (FELCOM) through a Service Note S/N 4(2004) followed by its revision S/N 10 (2006) that is attached in Annex IV (a); the publication of the Manual on Policies and Procedures for WMO Fellowships and enhanced communication with Member States and other stakeholders, including the ETR website.

The composition of FELCOM, which meets quarterly to review and analyze the fellowship requests, took into account the need to ensure that the planning and management of fellowships are closely coordinated with the staff involved in the various scientific and technical programmes of the Organization. The 2004 Service Note (S/N) was revised in 2006 and 2014. In January this year, the Education and Training Committee (ETCOM) was established through S/N 2(2017) to bring together FELCOM and the Training Management Team (TMT) - see Annex IV (b).

b. Process of awarding fellowships

The processing and awarding of fellowship is well documented in the Manual and Guidelines for Fellowships. The process follows a cycle that involves the stakeholder in particular the Permanent Representatives of Member countries with WMO, the Education

and Training Department (ETR) and the defunct FELCOM. The various actors and stages in the process are as shown in Fig. II below. For a candidate to be considered, the fellowship nomination has to be approved by the PR of the candidate's country. Then FELCOM has to ensure that: i) the requested training falls within the mandate of WMO; ii) the training objectives are aligned with NMHSs' development plans and iii) the training is useful to the international meteorological and hydrological community.

In processing the request, priority consideration is given to Developing Countries, Least Developed Countries (LDCs), Small Island Developing States (SIDS), Land Locked Developing Countries (LLDC) and countries emerging from war, civil unrest or natural disaster. Attention is also given gender equality and geographic balance. Special consideration is given to requests for training at one of the WMO Regional Training Centres (WMO RTCs) or other institutions with which WMO has cost-sharing or other formal arrangements.

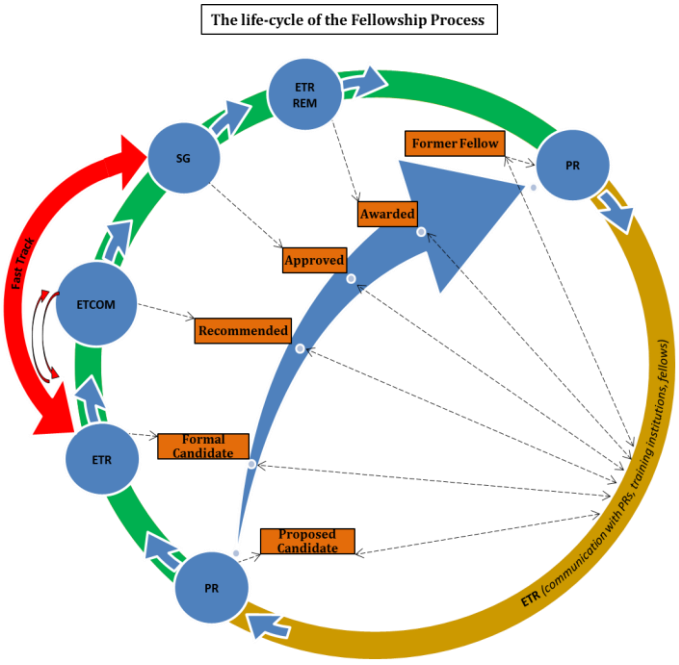


Fig II The Fellowship processing procedure

All applications for fellowships are considered at the quarterly meetings of FELCOM, now replaced by ETCOM, based on the EC criteria for the award of WMO fellowships (see Annex VI) and other pertinent information. The recommendations of ETCOM are sent to the Secretary-General for review and decision on which application to give approval.

c. Reporting and monitoring

Reporting and monitoring of fellowship activities during and after training are vital components of the Programme that should be fulfilled by the host institution, the fellow and the Member country. Great emphasis is placed on the commitment and active collaboration of the PRs of benefiting countries to be reporting and monitoring the fellow's study during the post-fellowship period for up to two years. The reporting and monitoring mechanisms are adequately described in the Fellowship Manual and Guidelines and they include: academic and progress reports; monitoring reports (*upon completion of study, 3 months after returning home and 18 months after active service at the NMHS*).

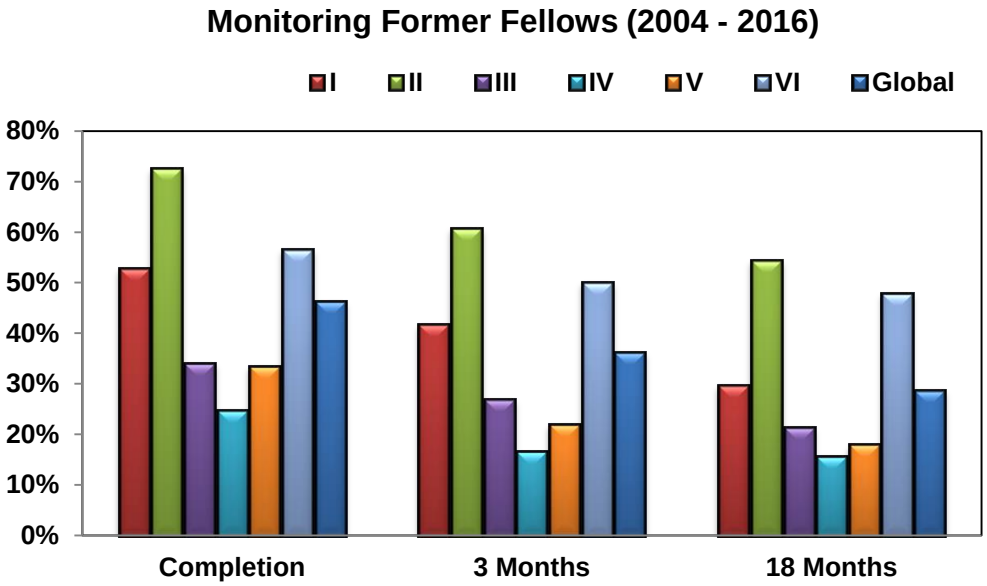


Fig. III monitoring of fellows with awards beyond one month

The above figure indicates the level of response from the stakeholders derived from the Table of Annex VII. The Annex also provides copies of the post fellowship reports that are required to be completed by the fellow and the Permanent Representatives. It can be seen from Fig. III above that the situation falls well below expectation especially with respect to the 18 months situation, which shows the feedback on the impact of the fellowship. On the average, the feedback is less than 50%.

d. Human and Financial Resources

Adequate human and financial resources are fundamental to the timely and successful implementation of the Fellowships Programme (FP). Since almost two decades, the FP has been managed by a core staff comprising the Director of ETR, Chief of Fellowships, one Fellowships Officer and three Fellowships Clerks. The staff looks after the daily affairs of the Programme in consultation with offices and stakeholders within and outside the Organization.

Changes in the fellowship policy and process effected after 2004 led to changes in the overall duties and activities to be carried out in order to maintain the high level of transparency, efficiency and effectiveness in the FP as well as, cope with the challenges regarding the ever-increasing demands for training due to many factors including developments in science and technology and the need for better quality of life in the WMO Member countries. In this connection EC and Congress have underscored the priority given to the FP and have been advocating for broader partnership with Members and civil society to meet the demands. Taking into account these innovative approaches in the FP that correspondingly require additional staff efforts especially from the Chief of Fellowship, it would be highly appropriate and timely to augment the level of the staff in the Division needed to sustain the achievements being made by the Programme. I

With regard to financial resources, the Fellowship Programme had an allotment of CHF 1,563,474 for 2014-2015 biennium, CHF 820,000 for 2016, & CHF 850,000 for 2017[3].

[3] Information from WMO Chief of Finance

from the WMO Regular Budget. More[4] than CHF 500,000 additional funds from extra-budgetary sources were contributed under Official Development Assistance (ODA) from Canada, Norway, Switzerland, the United Kingdom of Great Britain and Northern Ireland, and the United States of America. The funds from Canada, Norway and Switzerland are for specific projects and periods whilst the funds from the UK and the USA are more regular. The expenditure for fellows from the regular budget and trust funds were CHF 3,681,561 and CHF 959,966, respectively for the period 2012-2015[5].

e. WMO Regional Training Centers

An important development in the Educational and Training Programme was the establishment of Regional Meteorological Training Centers (RMTCs) in the mid-Sixties. These were intended to fill important gaps in training facilities that were taking place mostly at the national level where Members used to determine the required educational qualifications for their staff and the training needed for different tasks. With the rapid scientific, technological and communication advancements, new capabilities in forecasting, numerical modelling, radar and satellite communications and computers the need to generate qualified staff in meteorology, hydrology, climatology and related disciplines at technical and university levels became more apparent.

Since 1965, RMTCs have been set up in Argentina (Buenos Aires), Kenya (Nairobi), the Caribbean (Barbados), the Philippines (Quezon), Brazil (Belem), Egypt (Cairo), Algeria (Oran), India (Pune) and Niger (Niamey) to meet the growing training demand in a most cost-effective manner. By the end of 1987 more than 10,000 students had satisfactorily completed courses of instruction at these centers and have been doing very valuable work contributing to the science of meteorology at national and international levels. Training manuals were published by WMO to provide the basis for the WMO classification of meteorological personnel (Class I to IV) and to strongly influence the content of the courses offered by the RMTCs. The latest publication in this series the “Manual on the Implementation of Education and Training Standards in Meteorology and Hydrology, Volume 1” (WMO no. 1083) was issued in December 2013.

The useful role being played by the RMTCs and their rapid expansion over time warranted the EC Panel of Experts on Education and Training to initiate some appropriate measures to enhance their role and make them more effective. These included: reinforcing regional cooperation; raising greater awareness of the capabilities of RMTCs; more efficient planning of human resource development; encouraging lifelong learning and continued professional development; improving the content of training programmes; enhancing the learning process; providing better access to training materials; and strengthening the role of ETR.

[4] WMO EC Panel on Education and Training
[5] Information from the WMO Budget Office

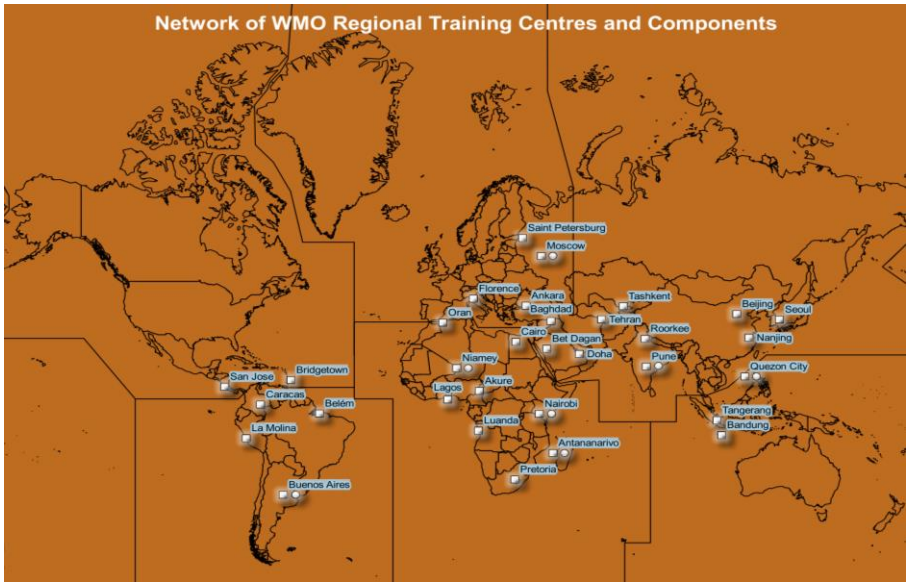


Fig. IV Network of WMO Regional Training Centres and Components

In 2006, the WMO Executive Council decided that the term Regional Meteorological Training Centre (RMTC) should be changed to Regional Training Centre (RTC) to allow for modern methods of learning and specialization in areas other than meteorology. Nowadays there are 26 WMO Regional Training Centers composed of 38 components assisting Members to meet competency requirements and organize workshops and seminars on priority areas such as climate change, disaster reduction, food security, water resources management, etc. The evolution of RTCs has resulted in a diverse portfolio of centers providing education and training through the use of residence classes, distance learning, and blended learning. The RTCs are playing a key role in the ongoing feasibility study on the development of the WMO Global Campus concept to explore new facilities.

f. VCP countries' contribution

The Voluntary Cooperation Programme (VCP) is a mechanism that provides assistance to countries through cooperative efforts of Members to complement implementation of activities for WMO Programmes at national or regional level and under bilateral or multilateral programmes. Based upon request, Member countries are provided with support in the form of equipment, expert services, training and education. Currently, the main areas of cooperation that are supported under the Voluntary Cooperation Programme include:

a. short-term and long-term fellowships;
b. short-term training seminars;
c. the establishment of observing and data-processing facilities;
d. support to meteorological and hydrological activities related to environmental protection;
e. the implementation of the Internet capabilities at National Meteorological and Hydrological Services; and
f. support to engage with the Global Telecommunications System.

The VCP is divided into the following two components: i) VCP (F) dealing with fellowships and training, expert services and project development and ii) VCP (ES) dealing with equipment and services. Under the VCP (F) priority is given to requests from LDCs and SIDS for individual short-term fellowships and group training programme. Requests for very

short-term (less than one month) training activities including training workshops and seminars, on-the-job training and attachments are also considered as priority.

During recent years, the VCP (F) contributions have been on a declining trend and in the 5 years period from 2011 to 2015, the drop was from US$ 148,678 to US$ 42,500[6]. Due to the reduction in available VCP (F) funds, the number of very short term training activities offered by the RTCs and Member countries was significantly reduced in 2015. The picture was however much better with USA VCP Fund that enabled WMO to support fellows to the total USD 165,439 in the same year.

The decrease in contributions to the VCP (F) was partially compensated by a positive move towards support by Members for major development programmes and a general increasing trend in technical cooperation trust funds. WMO overall budget from voluntary contribution (extra-budgetary funding) for 2015 accounted for almost 40% of the total budget.

Noting that the VCP (F) is a very important rapid mechanism to meet priority demands from Members, the Secretariat has been continuing its effort to replenish the Fund by encouraging new and traditional partners/donors including Australia, Canada, China, Finland, Germany, Norway, Republic of Korea, Switzerland, UK and USA who have been very supportive to continue contributing substantially to the Fund.

g. Review of existing internal evaluations and audits of the Fellowship Programme

The Fellowship Programme and its activities have been subject of a number of evaluation and audit exercises since 2003**.** These exercises included the following:

i) Deloitte & Touche and the External Auditor's reviews of WMO in 2004 on "Fellowship Operations";
ii) Internal Oversight Office Internal Audit of "Fellowship Operations" in 2007;
iii) Internal Oversight Office Internal Audit of "Fellowship Transactions" in 2009;
iv) Internal Oversight Office Evaluation of "Processes in the Fellowships Programme" in 2010, and
v) Internal Oversight Office Internal Audit of "Fellowships Management" in 2013.

The reviews were aimed at bringing about the highest possible level of effectiveness, fairness and transparency in the granting and implementation process of fellowships. They reviewed and assessed the adequacy and effectiveness of governance, risk management and internal control processes concerning fellowship transactions. They reviewed, in-depth, the processes of approval and award of fellowships, monitoring of fellows and authorization of payments to fellows. The 2010 evaluation exercise had the criteria of effectiveness concerning fellows' satisfaction, achievement of training objectives, the acquired skills and competences of the fellows and career development after their return to the NMHSs, and the extent to which the Programme has been properly implemented. It also touched on the Programme's contribution to WMO's overall capacity building efforts in Member countries. The efficiency criteria covered the policies and procedures, monitoring and evaluation and use of funds. The last audit exercise of 2013 was one of the periodic reviews by IOO to provide assurance that fellowships are being awarded in a fair and transparent manner and payments made to fellows are in compliance with the rules laid down.

More than thirty recommendations resulted from these reviews and over the years, appropriate actions have been taken on them by ETR, REM, the EC Panel, the Executive Management, EC and Congress. Some of the major recommendations that set a new

[6] IPM/2016/ Doc 2

approach to the fellowship process included: i) setting up a fellowships committee to decide on fellowship awards; ii) issuing and implementing a fellowships manual; and iii) developing a database to keep an accurate record of fellowship applications, awards and history. Other recommendations made to improve the programme, accountability and probity are related to issues such as management of: the programme, the process, information and communication, accounting, budget and financial control, staff and the database. At present, it could be reported that most of the recommendations were implemented in totality or partially, and regular reviews on the developments have been made by the Panel and EC. The outstanding recommendations that have not been fully implemented include staff matters, the Fellman database, and fellowships monitoring. With changes in time, some of the practices and procedures need to be re-visited and updated in order to further improve and sustain the level of effectiveness and transparency attained in the Programme during the past decade.

PART B – EVALUATION OF THE FELLOWSHIP PROGRAMME

As mentioned in Chapter 3 of the report, the evaluation was conducted using various tools including the fellowship database and information from three questionnaires namely: i) ETR Survey on Human Resources Status of NMHSs, ii) Short questionnaire on impact evaluation of the WMO Fellowship Programme (14 selected respondents mainly from developed countries, and iii) the main questionnaire of the evaluation that was sent to 46 selected Member countries in the 6 WMO Regions. The list of these countries is provided in Annex VIII.

For the main evaluation questionnaire (1) sent to developing countries, the following 31 out of the 46 countries responded to the survey, representing a 67.39% response rate: Benin, Burkina Faso, Côte d'Ivoire, Ethiopia, Gambia, Ghana, Guinea, Kenya, Malawi, Mali, Nigeria, Rwanda, Senegal, Tanzania, Uganda, Hong Kong China, Maldives, Myanmar, Pakistan, Thailand, Uzbekistan, Indonesia, Chile, Guyana, Antigua and Barbuda, Belize, Trinidad and Tobago, Philippines, Armenia and Lithuania. For the other questionnaire (2) for mainly developed countries, 7 out of the 14 countries: China, France, Spain, Russia, South Korea, UK (UK Met Office and University of Reading) and USA were the countries that responded and their replies are provided in the table of Annex XII.

1. Effectiveness of the WMO Fellowship Programme (FP)

a. As a WMO Programme

The WMO Training and Fellowship Programme (FP) is the engine for growth and capacity development of the NMHSs of WMO Member countries. Its close interrelation with all other major scientific and technical Programmes of the Organization places it at the center stage of many activities that are being implemented to ensure the availability of well-trained meteorologists, hydrologists, climate scientists, engineers and technicians to WMO Members, notably to the Developing and Least Developed Countries and Small Island States. The success of the programme is key to the overall performance of all other WMO Programmes. In this context, the fellowship programme is identified as one of the priority areas of the WMO Strategic Plan 2012-2015, under Strategic Thrust 3, Expected Result 6, which calls for enhancing capabilities of Members and NMHSs among others.

During the past decade substantial efforts have been made to respond to the increasing calls from Members to help in enhancing the capabilities and capacities of NMHSs to improve the quality and delivery of services. The availability of adequately trained and skilled personnel in the Services, which is a “sine-qua-non” for the fulfilment of the mandate and attainment of the goals of WMO, has become more apparent now more than

ever before in the light of scientific and technological developments in weather, climate and water especially numerical weather prediction, multi-hazard warning, disaster risk reduction, climate services to support the Global Framework for Climate Services and water resources management. WMO has been responding to these new challenges by making the FP more efficient and effective in order to ensure the achievement of Expected Result 6, which is measurable by the number of developing countries and LDCs benefiting from the fellowships offered and monitored, and the training events and technical meetings carried out through various approaches including:

- the interactions and collaborations between ETR and the scientific/technical departments of the Organization in delivering education and training workshops, training seminars and conferences, and

- the traditional approach with regards to long, short and very short-term fellowships, group-trainings and familiarization visits for newly-appointed Permanent Representatives of Member countries.

A list of the workshops, seminars, and group training activities and familiarization visit carried out during the period under consideration are listed in Annex IX.

In order to maximize the benefits and render the FP more effective, the ETR under the guidance of the Panel has placed greater emphasis on human resources development through the efficient use of RTCs as a first option; cost-sharing and tripartite arrangements; online and blended learning, bi-lateral and multilateral arrangements and through expanded partnerships with donor countries. Within the Secretariat, the periodical audits from the Internal Oversight Office and the implementation of the ensuing recommendations have contributed significantly to enhancing the effectiveness of the FP. The introduction of FELCOM in 2004 led to an inclusive and collective responsibility of stakeholders within and outside the Organization in the fellowships process. The terms of reference of this committee and working rules have been subjected to occasional review and in February 2017, the Education and Training Committee (ETCOM) was established through Service Note (SN) 2/2017.

b. Fellowship delivery in the WMO Regions and Globally

Analysis and interpretation of the fellowship database shows that there is a marked variation in the implementation of fellowships in the WMO Regions when the total number of requests and awards are compared. Figure 5 (a) below shows Region I to have the highest level of delivery of 1431 requests with 645 awards during the period 2004 to 2015. RA II was the second highest, followed by RA IV, RA III and RA V. The level in Region VI was the lowest but not the least expected taking into account the purpose of the FP and the EC criteria for the award of fellowships that places emphasis on LDCs, SIDS and gender equality. The charts in Annex X indicate the number of staff from the countries that have benefited from the FP during the period under consideration.

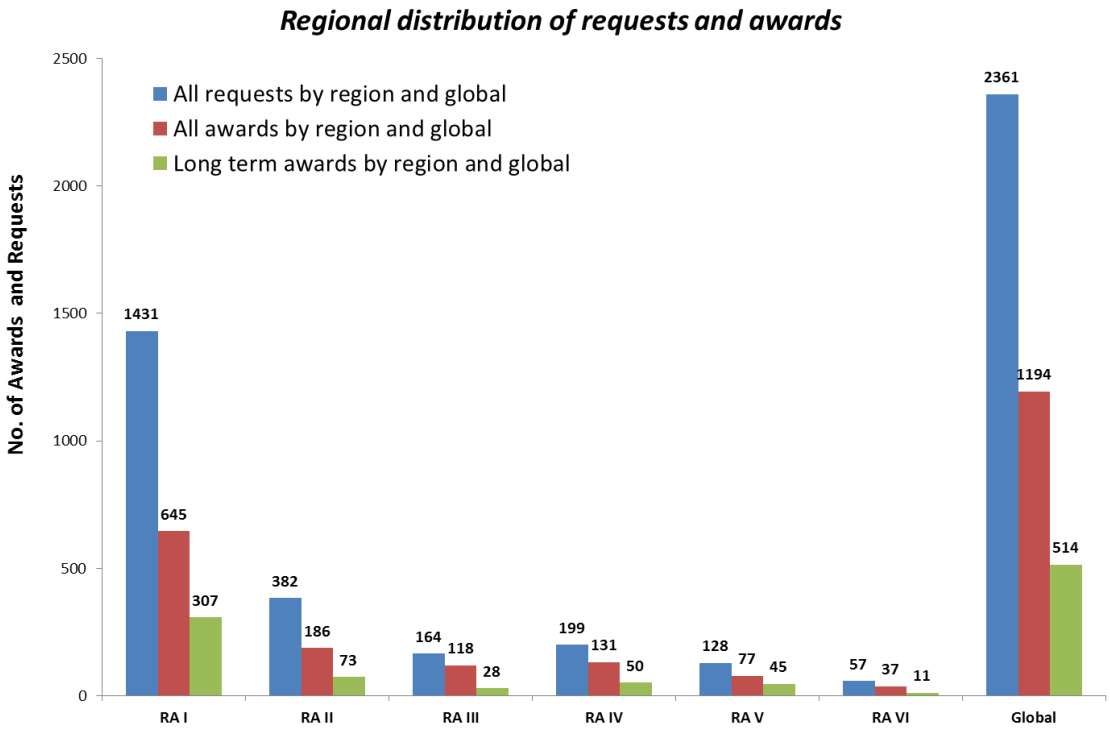


Fig. 5 (a) Global and Regional Distribution of Requests and Awards

The picture is different when comparison is made in terms of how much of the total request was awarded (see Fig. 5 (b) below. In this regard, it could be seen that the requests from Region III were 71.9% awarded, followed by RA IV (65.8%), RA VI (64.9%) and the least was RA I (45.07%). This could be partly explained by the degree of fairness, transparency, geographical distribution and gender equity applied by FELCOM when examining the requests region by region, the range of alternative sources of funding other than WMO available to countries in the Regions and the level of development of the NMHSs.

Fig. 5 (b) Percentage Total Awarded out of Total Requests

The trend in demand for fellowships during the past twelve years has indicated on the average, a progressive increasing trend. The peaks were observed in 2010, 2013, 2014 and 2015, which was the highest during the last decade (see Fig. 6 below).

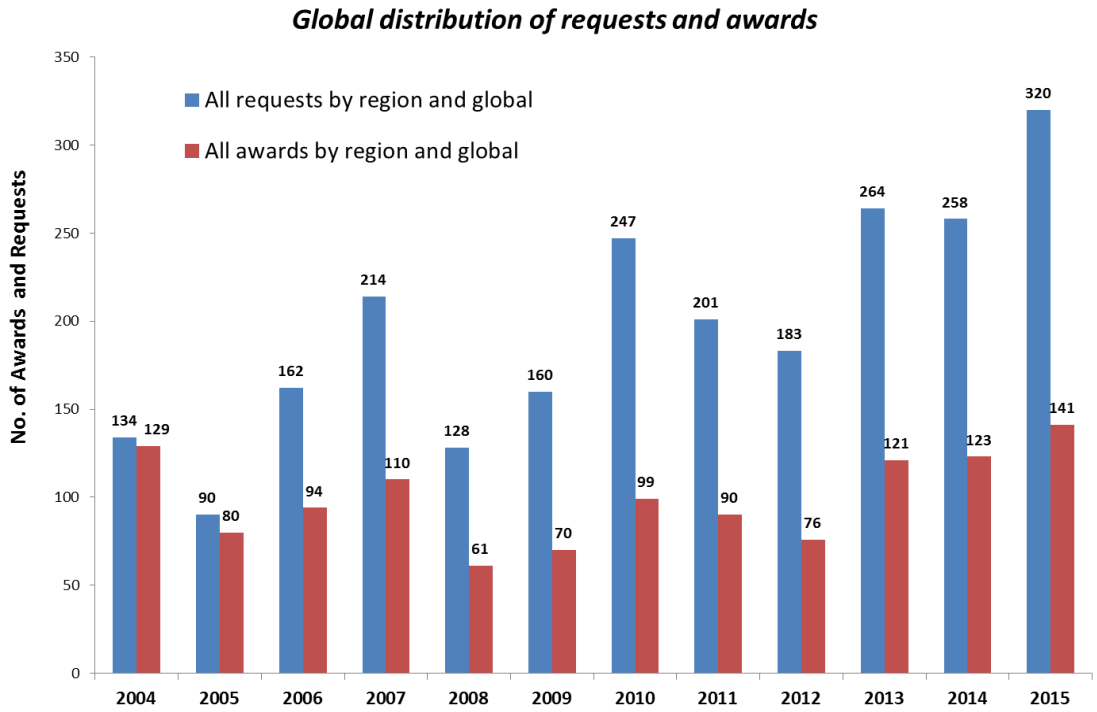


Fig.6 Annual Distribution of Requests and Awards

Sequent to analysis of the fellowship database, comparison of awarded and completion of fellowships overall shows a very high completion rate. Of all the applicants who applied for a fellowship from 2004, only 0.3 percent was listed as failed and 0.9 percent was listed as withdrawn (see Fig. 7 below)

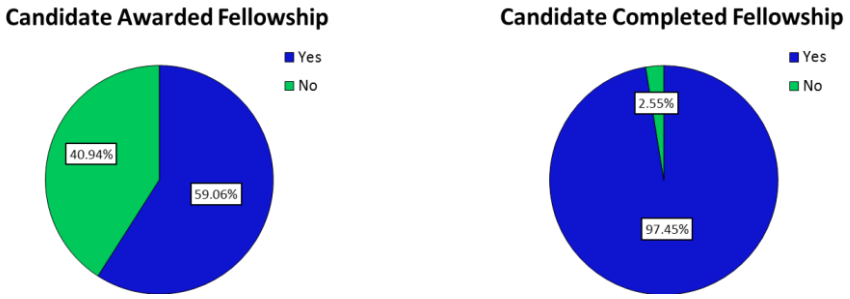


Fig. 7– Percentage of Overall Awarded and Completion of Fellowships

c. Broadening of partnerships to expand training opportunities

Partnership in development has been a “modus operandi” in the implementation of the FP since its inception over five decades ago. Newly trained experts are in constant demand due to natural staff turnover, attraction of trained staff to more lucrative jobs and accelerating change in both science and society makes retraining and continuing education absolutely essential. WMO focuses on ensuring that this occurs through a variety of mechanisms. Partners and stakeholders particularly Member countries, national and regional Institutions, the UN system, civil and private sectors have been collaborating with the Organization through various mechanisms including bi-lateral and multi-lateral agreements, trust funds, project implementation to fulfil its goals and targets in education and training. The network of national institutions and Regional Training Centres (RTCs) play a key role in ensuring relevant training for thousands of professionals from developing and least developed countries every year.

The Secretary General annual letter to Members informs about the collaboration with a number of development partners to expand the range and number of fellowship opportunities available to NMHSs. He expresses his appreciation to the partners for their support and invites those who have not yet done so to indicate the possibility to offer any form of agreement with WMO, for the joint provision of fellowships for the education and training of the next generation of experts from least developed, developing and small island developing countries. As a result of these appeals and the endorsements given by Congress, the Secretariat has registered an increase in the number of new development partners collaborating in the funding and implementation of fellowships through institutions such as national training centres, RTCs, universities and centres of excellence. These institutions or the NMHSs that support them have been successful in attracting support from governments to waive tuition fees, offer help with student accommodation and in some cases, cover the cost of courses. A significant portion of the funding is dedicated to supporting training opportunities that ensure a wide geographical distribution and gender equality, and that build upon the following five high priority areas decided by the 16th WMO Congress (June 2011): the Global Framework for Climate Services, implementation of the WMO Integrated Global Observing System/WMO Information System (WIGOS/WIS), aeronautical meteorology, capacity development, and disaster risk reduction.

Figure 8 below depicts the main partners that work closely with ETR to support Members in meeting their training needs in the high priority activity areas of the Global Framework for Climate Services, agriculture and food security, disaster risk reduction, health and water. In view of the importance of the FP, there is a potential for further funding opportunities under the Green Climate Fund and other funding instruments linked to climate change and disaster risk reduction.

Fig. 8 Partners in Development

In addition to agreements with Members, cooperation was also established with a number of institutions and organizations, namely, EWHA Woman's University, Seoul, Korea, (to address gender imbalance), Hohai University, Nanjing, China (on hydrology and water resources) Leibniz Universität Hannover, Germany (on water resources and environment), Nanjing University of Information Science And Technology, Nanjing, China (on meteorology and postgraduate research), University of Reading (on meteorology) and the European Centre For Medium-Range Weather Forecasts (ECMWF), Reading UK (on forecast skills), UNESCO-IHE Institute for Water Education, Delft, The Netherlands`(hydrology and water resources) and EUMETSAT. More information regarding the support provided by these partners to Members can be found in the WMO Bulletin nº: Vol 61 (2) - 2012.

d. Use of Regional Training Centers and other Regional Institutions

Almost all the respondents to the questionnaire acknowledged the usefulness of the RTC in contributing to the strengthening of capabilities and skills of technicians, and acquiring quality human resources in order to respond effectively to the different users demands and fulfill the Services' mission, which include timely and reliable service delivery to the public. Over 60% of the responses rated the training provided by RTCs and other regional institutions as very good both in terms of quality and coverage of training content/activities (see Table II of Annex XI).

Some Services have made full use of the RTCs in their training needs from certificate to degree level and have benefited from the long-term, short and very-short-term trainings offered including: Meteorological Technicians Training Course (MTTC) or BIP-MT. Meteorologists Training Course (MTC) or BIP-M and Hydrologists Training Course (HTC); Hydrology (Certificate and Diploma); Climate Services and Climate Change, Agro-meteorology, NWP, QMS, GIS and instrument maintenance and calibration. These training activities have helped to improve knowledge, experience, and competences and have

enhanced work performance at NMHSs. Refresher courses, staff attachments, training seminars and workshops, exchange of staff visits amongst RTCs and collaboration with other regional centres such as ACMAD have been found very useful.

e. Interaction/collaboration between RTCs/regional Institutions and National Services

Many countries have expressed great relationship with Regional Training Centers (RTCs) and are satisfied with their activities. The present interaction/collaboration between RTCs and national Services has continued to improve as it provides a good opportunity for building capacities of National Meteorological Services. Respondents have indicated ways in which collaboration between RTCs and national Services could be improved and these include:

i. Improve the partnership and expand mutual understanding, exchange of documents and publications, study trips and exchange of experience;

ii. Exchange of trainers, lectures and students and collaboration on developing resources (module, learning material);

iii. RTCs need to be more open to the NMHSs and prepare tailor-made courses for actual and specific needs; there should be regular interactions to ensure that training programs and schedules are acceptable to all parties;

iv. Explore options for sustainability and offer students the options to join graduate and post graduate programs;

v. The RTCs should run regular scheduled courses and inform all countries. This will enable other countries to take advantage of the RTC programs. They need to offer vacancies to NMHS as this will assist WMO rationalize the Fellowship assistance to countries;

vi. The RTCs should be encouraged to make/implement training evaluation feedback for all conducted courses/seminars/workshops and distribute widely;

vii. RTCs should be offering free online courses, particularly ones related to operational meteorology; increase of international online training courses and make available the training materials online after the course. There should be integration of the e-learning in the courses offered;

viii. The training costs should be entirely borne by the organizers or should be on cost-sharing basis;

Ix. The RTC could offer training in country to have more staff trained at an optimized cost since the cost of travel and upkeep abroad is more costly. The RTC could also build national capacities and ensure continued support and coaching until the national capacities are adequate and self-propelling. Hands on training and practical exercises should be improved;

x. Need for more focused refresher training programs based on national requirement;

xi. As a follow up to training events, trainees can share their knowledge among local staff so that national Services will improve in the provision of accurate weather/climate forecasts and in the saving of life and property from natural disasters;

xii. Increase capacity building activities in latest techniques like NWP products (accessibility, interpretation), in model output, statistics, data assimilation techniques, satellite and radar data analysis and interpretation, climate services, development of forecast guidance system, high impact weather forecasting, socio-economic assessment of meteorology, and promotion of more research between the RTC and Member country.

f. WMO Fellowship Alumni

During the past decade, the WMO Fellowship Programme has successfully trained many fellows, mainly from the developing countries, in the fields of meteorology, hydrology and related sciences. Fig 9 below shows some of the fields of activity of the fellows after returning home.

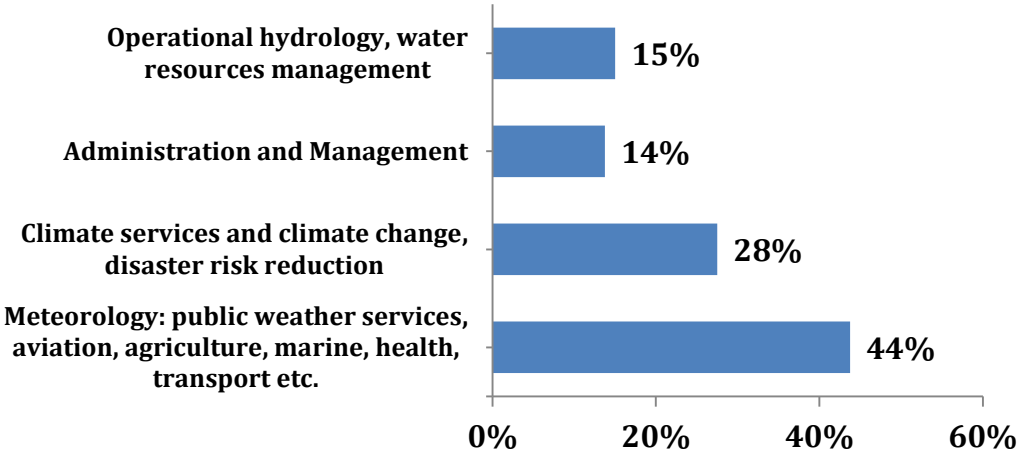


Fig. 9 Fields of Activity of Fellows upon returning home from studies

Most of these "WMO Fellowship Alumni" as one may call them, are today the pillars of development activities in their national Meteorological and Hydrological Services and the Member countries at large. At the national level, many have continued to perform their respective scientific or technical duties while some have moved to the higher ranks in administration and management such as Managing Directors or Directors-General of their Services and national scientific institutions; some even rose to the levels of Permanent Secretaries and State Ministers. At the international level, there are several distinguished ex-fellows of the WMO FP who have served or are serving in the governing and subsidiary bodies of WMO and allied organization and some have held or are holding key positions in these Organizations.

The consolidation of the WMO Fellowship Alumni provides an opportunity to demonstrate the effective gains of the WMO FP in one way, and in other way, to promote interaction amongst experts on meteorology, hydrology, environment science and allied disciplines. In this regard, the ETR has initiated an internet-based consultative mechanism known as WMO Fellows in Touch (WMO FIT) whose main objective is: "to give an

opportunity for WMO fellows to expand their network among experts and professional in their areas of specialization, especially within the framework of WMO activities, as well as other multilateral environment and socio-economic development issues". The expected outcomes and benefits of FIT are described in Annex XII and a list of potential alumni drawn from the fellowship database, is attached as Annex XIII.

2. Impact of the Fellowship Programme

a. Impact on individual fellows

The assessment of the responses to the questionnaire has shown that the impact of the FP on individual fellows has been positive and in some cases very positive especially in the areas of research, development and management. There have been positive impacts on fellows in terms of increasing the scientific and technical knowledge base, upgrading the individual's job performance and productivity, high quality of work, improved expertise in research and publication.

It enabled some fellows to get high responsibilities in their Services but in one response, the lack of position opening was noted and this could be a setback for upward movement in many Services. Some examples of those who have moved upwards after training are:

- Cote d`Ivoire -N'guessan Fulgence is in charge of marine forecasting; Kanga Isidore - head of research in hydrology; Srohourou Bernard - head of the department of research and development; Coulibaly Kolotioloma is in charge of climate and Ya kouakou Firmin is head of the department of meteorology and transport;
- Guyana – Ms Seulall was promoted to leading the Service;
- Ghana - Mr Nkansah's assumed the position of Deputy Director-General of Ghana Meteorological Agency with increased research capabilities and in some instances, supervises students from Universities in Ghana in their research works;
- Indonesia - The fellow was transferred to the new sub-division of Climate Change Analysis to run climate projections for the Indonesian region and its surroundings.

Other examples that indicate the duties/activities of former WMO fellows include:

- Uganda - Fellow has developed the capacity in research for a number of staff who are working with him on the SWAP project,
- Myanmar – Fellow has published her master of science thesis in SCI paper (Arabian Journal in 2015 on the topic "Characterization of southwest monsoon onset over Myanmar",
- Pakistan – Fellows became resource persons to train other staff and thus contributed effectively to improved service delivery of the NMHS,
- Chile - There has been career development after 4 months abroad in another Meteorological Service that has prepared the fellows for the challenges of the forecasting unit,
- Guyana - Individual fellows training has facilitated research on Guyana's most devastating flood event, which occurred in 2005,

- Belize – Fellows acquired skill on running of the Weather Research and Forecasting (WRF) Model for the Belize domain**,**
- Philippines - The programme provides the fellow with better foundation in conducting his main job responsibility to maintain the meteorological instruments and to transfer the knowledge to the meteorological academy students,
- Trinidad and Tobago -The impacts of the fellowships programme on individual fellows have been great. It has provided opportunities for personal advancement, strengthened the Service and has created trainers for persons at lower levels.

A summary of the individual impacts from the 18 months post fellowship reports are as follows:

- Nigeria: Mr Desmond Onyilo -The fellowship has greatly improved his understanding of the global weather telecommunication system. This has helped in effective participation in both the seasonal and sub-seasonal weather forecasts. His skill in multi-model usage has helped to improve the various forecast products of the Agency.
- Nigeria: Mr Paul Ugbah - His proficiency in Linux acquired during the fellowship has been highly useful in running the numerical weather prediction models. As a result, the quality of weather forecasts and seasonal and sub-seasonal weather and climate bulletin have improved significantly
- Nigeria: Mr Sabastine Dekaa Francis - The fellowship has greatly improved his skills in robust analysis of rainfall and other climate parameters thereby contributing effectively to research outputs and enhancement of seasonal and sub-seasonal forecast products.
- Tanzania: Mr Chuki Athumani Sangazugembe -The fellowship and the qualification obtained have had a very significant impact on his career development and Tanzania Meteorological Agency (TMA) services. Using the knowledge and skills obtained, it is now possible operational to run lake wave watch model over Lake Victoria and West Indian Ocean domains on daily basis.
- Tanzania: Ms Habiba Ismail Mtongori - The fellowship and the qualification obtained have had a very significant impact on her career development and Tanzania Meteorological Agency (TMA) services. She has worked at the Central Forecasting Office as a meteorologist and currently pursuing her PhD studies on climate change impact.
- Tanzania: Mr Ladislaus Changia - The qualification obtained has had a very significant impact on Dr Ladislaus Changia's career and to the Tanzania Meteorological Agency (TMA). Currently he is the Acting Director of Research and Applied Meteorology in TMA and the IPCC Focal point for the United Republic of Tanzania.
- Tanzania: Ms Sarah Osima - The qualification obtained had a very signifcant impact on Ms Sarah Osima's career and the Tanzanian Meteorlogical Agency. She is currently the head of the environment section and working on research over East Africa.
- Trinidad and Tobago: Mr Albert Simon ALEXANDER - Alexander has been one of the outstanding forecasters within the service in recent times. He has utilized his skills to assist and train junior forecasters. Mr Alexander has also been

instrumental in TMA's pursuit of a quality management system and is the lead in-house auditor.

- Trinidad and Tobago: Mr Kenneth A. KERR - Facilitated improved consultation in weather and climate related issues. Enabled improved participation and intervention of national, regional and international conference, seminars and technical workshops. Provided improved technical competencies which has led to improved climate products and services including development of new products. Facilitated better understanding and scientific background which has led to better research performance across a broader spectrum of applied sciences.
- Fiji: Ms Aditi SHARAN - Ms Aditi Sharan is a Public, Marine and Aviation Weather forecaster and her role fulfils Fiji Meteorological requirements as an operational meteorologist. The acquired qualification allows FMS to fulfil its obligations as a National Meteorological and Hydrological Service and as well as a Regional Specialised Meteorological Centre for the Tropics. Her work on a daily basis makes significant impact on lives and well-being of communities within Fiji and the region that it serves.
- Fiji: Mr Paula S. TAWAKECE - The officer has much knowledge with respect to technical and scientific responsibilities more than the current post. It comprises the understanding of the current flood warning system in place that is a basic method; the monitoring and checking the accuracy of the measurement and analysis; and the process and procedure of validating hydrological data manifold in the office and field operation. The officer has a good knowledge of hydrological systems and has gained significant analytical skill knowledge that is applied in his daily work especially during the severe weather and flood forecasting duties.

b. Impact at the national, regional and global levels

The analysis of the questionnaire indicates that the training activities have greatly enhanced the positive image and visibility of the NMHSs in terms of service delivery and have added great value to the operations of the National Meteorological and Hydrological Services (NMHSs). In some countries where there are not enough opportunities available at university level to produce quality scientists in the field of meteorology, hydrology and climatology, WMO's offers for training in different fields have been considered as excellent opportunities towards grooming scientists/researchers and technicians in meteorology, climatology, operational hydrology, instrumentation, as well as application of new technologies.

The training activities have built capacity at the NMHSs some of which were under-staffed due the fact that many of the staff had reached retirement age. The newly returned fellows have therefore helped to strengthen the capacity in the NMHSs which became more competent to produce better products and services tailored to the actual needs of users.

There has been an increase in the number of qualified and skilled staff in the areas of climate and weather research, forecasting, modelling and numerical weather prediction, operational meteorology, climate information services, satellite and radar meteorology. In some NMHSs the service delivery has been improved in terms of quality and quantity.

The positive contributions through VCP arrangements with partners such as UK Met Office and NOAA in enhancing capacity building and development has been noted in some

responses. The training at NOAA in the use of a new methodology of work enabled the forecasters to have a better understanding of weather analysis and capability to prepare accurate forecasts. The forecasters also have an improved vision of a modern forecasting unit, which helped to enhance services to the community.

It was reported in one case that although the training had greatly enhanced the capacity much more was needed to match with other NMHSs. In another case it was flagged that more competent staff can be acquired after training. Most fellows learn the theory in the training activity but in order to maintain the capacity development of the NMHSs, there is need to be qualified both in theory and practice. Indeed one response informed that the training activity had no real difference in its Service. On the issue of the FP contribution to the development activities at the national and regions levels, the feedback varied from good to excellent.

According to responses to the evaluation questionnaire, 37% of the respondents indicated that the FP has made an excellent contribution with regard to increase in the number of qualified and competent staff at the nation and regional levels. 34 % and 29% indicated very good and good ratings respectively (see Table III of Annex XI). A very good rating has also been accorded to the other issues raised in points no. ii), iii), iv) and v) relating to current and emerging demands (63%), transfer of knowledge (47%), promoting visibility (47%) and contribution to socio-economic development (43%) respectively. It is important to observe that none of the respondents indicated poor impact performance of the FP in all the five criteria shown the above-mentioned Table.

Similarly, the assessment of the FP impact on fellows' participation at international events has been very positive. The respondents to the evaluation questionnaire show a very good rating on networking with relevant partners and activities (43%), involvement with host institutions activities (37%), participation in WMO bodies, expert working groups including IPCC and COP (32%) and good rating on participation in other international cooperation structures and bodies (29%). 3% of the respondents indicated poor ratings on the last two points (see Table IV of the same Annex)

3. Relevance of the Fellowship Programme

a. An Assessment of the Objectives of the Fellowship Programme in the current dispensation

The objectives of the Fellowship Programme have been found to be still valid. According to responses to the evaluation questionnaire, 55% of the respondents have manifested strong agreement with the objectives of the FP. None of the feedback received disagreed with the validity or non-applicability of the objectives and only 5% indicated some neutrality on the issue (see Fig. 10 below). The overall view goes to confirm that the FP is very relevant to Members in the current dispensation, particularly when the NMHSs of developing countries, LDCs and SIDS are faced with insurmountable challenges to address the burning issues related to natural disasters, climate variability and change.

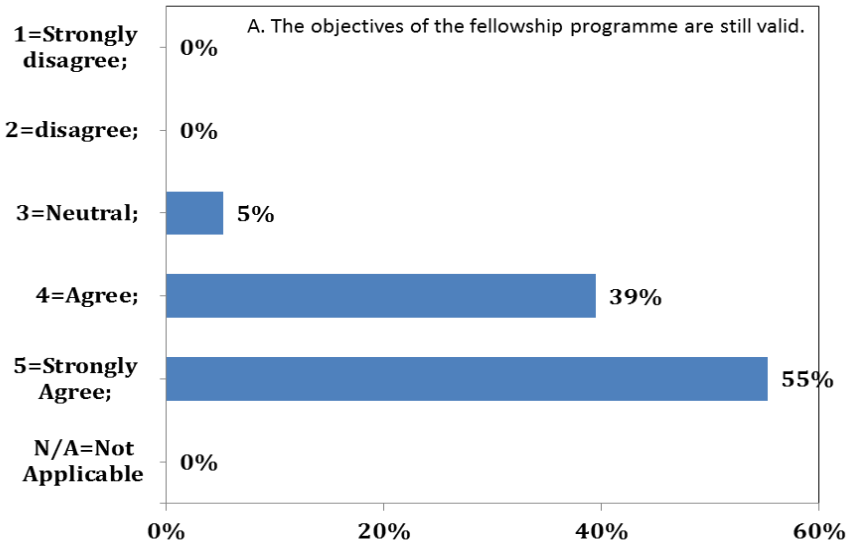
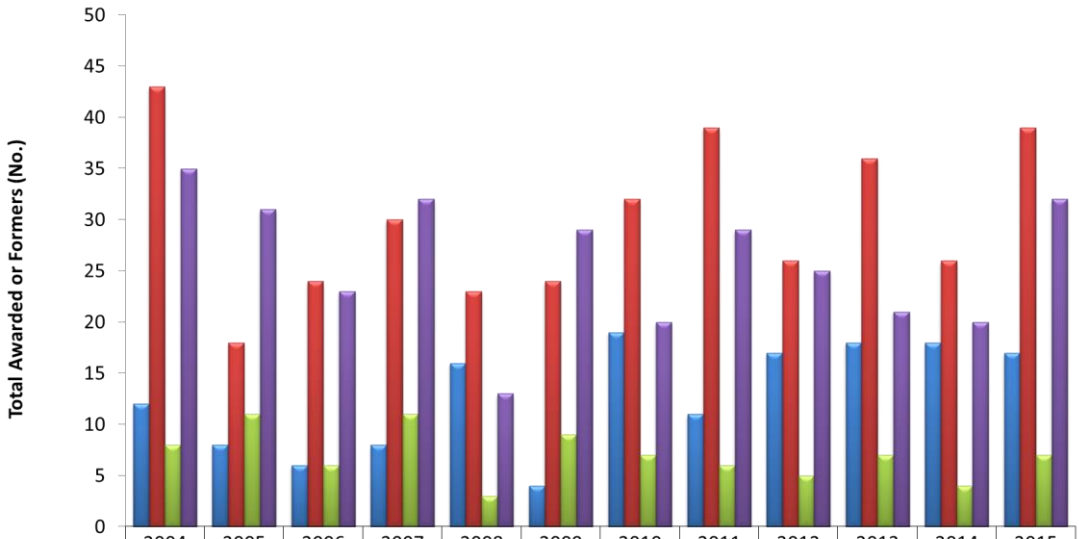


Fig 10 Validity of the Objective of the Fellowship programme

b. Gender equality in the Fellowship Programme

The WMO is committed to achieving gender equality and increased participation of women in its field of activities. The 17th WMO Congress held in June 2015 adopted Resolution 59 (Cg-17) on Gender Equality and the Empowerment of Women as well as an updated WMO Policy on Gender Equality. At its 68th session, the Executive Council endorsed a WMO Gender Action Plan in which capacity development is one of the main policy areas. Under strategy 3.5.1(a) of the Action Plan, the aim is to have a minimum of 30% of WMO fellowships awarded to women. These recent developments and targets on gender equity have indeed validated the actions being taken over the past decade by the WMO Fellowship Programme whose EC Criteria for the award of fellowships places gender equality amongst the highest considerations.



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Long-term (Female)	12	8	6	8	16	4	19	11	17	18	18	17
Long-term (Male)	43	18	24	30	23	24	32	39	26	36	26	39
Short-term (Female)	8	11	6	11	3	9	7	6	5	7	4	7
Short-term (Male)	35	31	23	32	13	29	20	29	25	21	20	32

Fig. 11 Awarded or Former Female and Male Fellows

The importance given to gender quality in the FP is demonstrated in Fig. 11 above in which one can take note of the progress being made on this matter over time. On the average the percentage of awarded or former female fellows for long-term studies is 42.6% of the male fellows for the period of 2004 to 2015. The trend has shown an increase of 55.1% during the period 2012 to 2015.

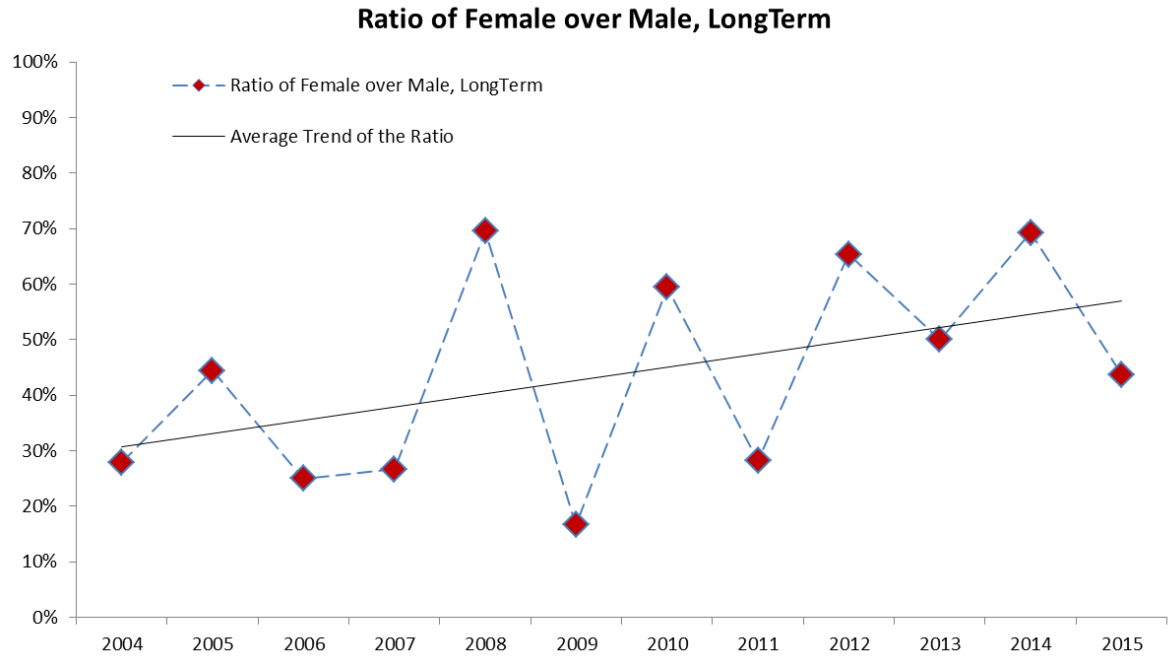


Fig. 11.a Long -Term Awarded or Former Female and Male Fellows in Percentage

The situation for short-term fellowships is significantly different with female numbers falling much less than male and decreasing with time. It is hoped that this situation will improve more in the coming years considering the emphasis placed by the Secretariat on gender equality and the role of Members in the implementation of the Gender Action Plan.

c. Current and emerging fellowship demands

It has been noted in several instances that the demands in fellowship is on the increase as a result of evolution in science and technology and the need for well trained and skilled personnel in the NMHSs to cope with the developments particularly in the new and emerging areas such climate change and disaster risk reduction. Fig 12 below shows the result of the 2017 ETR human resources survey regarding the current demand for training and fellowships. In line with the long-term trend of increasing fellowship demands, Region I has the highest expectation from WMO with 518 experts. This is followed by RA-II (258) and RA-III (135) and RA-VI (96) mainly from East and South-East Europe.

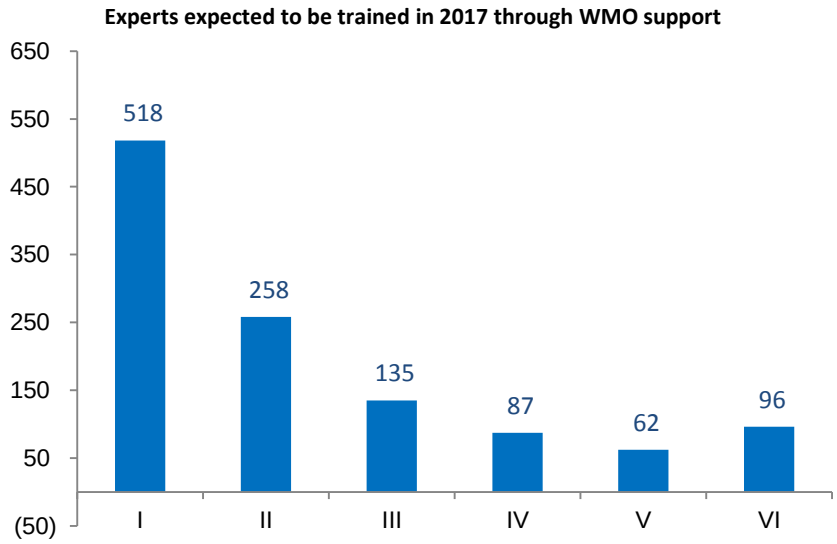


Fig 12 Current Demand of fellowship by Region

While it is obvious that this high level of demand for WMO fellowships is reflective of the Members' needs and how relevant the FP is to them, it would be a huge task for the Organization to meet such a demand in one year. In this regard, WMO has to enhance its collaboration with other stakeholders to explore other possible funding sources from Governments, multi-laterals institutions and bi-laterals. Fig 13 shows that on the average, governments are expected to support about 85% of the training need in 2017, whereas WMO and projects are expected to support 7.6% and 9.15%, respectively. Increased allocation by WMO through its regular budget and extra-budgetary resources could make significant difference in meeting Members' expectations.

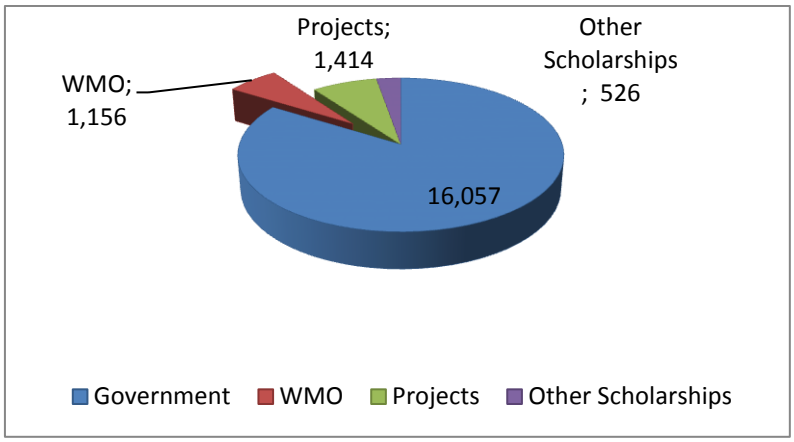


Fig.13 Different of Funding Sources for Education and Training

In line with the high demands highlighted in the previous paragraphs, there is an urgent need to address the emerging challenges of weather, climate and water. Fig. 14 below indicates the priorities of Member countries and it goes without saying that building capabilities and skills in weather forecasting and NWP is 1st priority. This manifest the need for the NMHSs of developing countries to be assisted to contribute in addressing the several extreme effects and vagaries of weather, climate and water at the national, regional and global levels, e.g. disaster risk reduction. Climate services that is seen here as 2nd priority is equally important in view of the significant global engagement on the Global Framework for

Climate Services (GFCS) and the follow-ups on the Climate Change Conference of Parties (COPs).

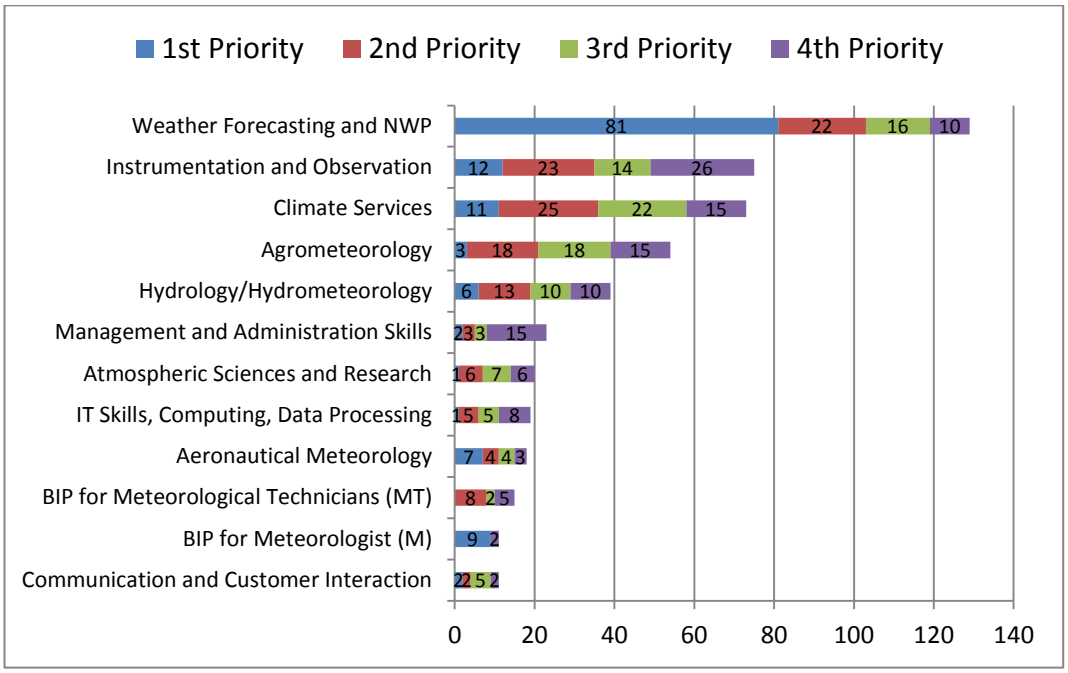


Fig. 14 Training Priority Areas – Globally

d. An overview of the activities and outputs of the fellowship programme viz a viz the overall goal and objectives of the fellowship programme

According to responses to evaluation, 55% percent of respondents agreed that the activities and outputs of FP are in accordance with the overall goal and attainment of the objectives (Table V(c) of Annex XI). A good number of the responses (39%) even expressed strong agreement while 3% disagreed. It was also strongly agreed that the training received by the fellow was relevant to his current role in the Service.

e. Activities and outputs of the fellowship programme within the frame work of intended impacts and effects

With respect to activities and outputs of the FP, there was overall agreement that they are within the within the framework of the intended impacts and effects. Respondents also strongly agreed that the FP is delivered effectively at the national and regional levels (see Table V(d) of Annex XI.

4. Sustainability of the WMO Fellowship Programme

a. Contribution to the Capacities of NMHSs

The responses to the evaluation indicated that fellows have continued to contribute significantly to the development of the NMHSs. Several measures have been taken to have in place a strategy for continuous capacity building and development of the Service, knowledge transfer, staff training and mentoring. Dropouts were reported in most of the responses at varying degree and range. For instance, Uzbekistan reported an alarming dropout rate of 80% whilst Chile, Hong Kong (China), Indonesia, Tanzania and Trinidad reported 0% dropout rate. From other respondents it ranged from more than 0% to 30% such as:

- Ghana - a significant dropout rate in the past but this has dropped to 15% now,
- Rwanda - the dropout rate is very minimal,
- Senegal - 30% dropout rate,
- Maldives - 30 % dropout,
- Myanmar - the dropout rate is on the average,
- Antigua - dropout rate is extremely small. There was only one over the period mentioned,
- Belize - dropout rate is about one out of every five.

b. Major factors which influenced the achievement or non-achievement of sustainability impact of the Fellowship Programme

The major factors that influence the achievement of sustainability impact include motivation of fellows upon return to their countries and their employment or proper placement in the Services. The use of the trained human resources should be optimized by putting to use the knowledge acquired from the fellowship on their day-to-days' activities and creating a conducive environment in the Service. The training encourages self-education, which leads to career development and progress in operation and scientific research.

The Organization of the Service should be well structured with a good scheme of service and career development plan for the employees. A culture of high achievement in the workplace should be promoted to encourage the trained staff to stay in the trained field and make contributions before moving to another field. The fellow should maintain exchanges with the experts in the area and share his/her knowledge and skills with colleagues while still working in the field in order to maximize the sustainability of the impact from the training. There is need to promote continuous inter-departmental cooperation and collaboration, regular communication and refreshers courses should be organized at intermittent periods.

On the other hand, due to staffing problems, fellows returning home are often given higher responsibilities in management due to the lack of human resources. As a result, they seldom have the time to apply the knowledge gained in their field of competence. The absence of the staff from work over a long period of time can be a significant impediment for those who have major staffing problems. In such instances, on-line courses can be an important means of ensuring greater number of enrolled students who can successfully complete them.

Other factors raised that hinder sustainability impact include: i) Effectiveness and relevance of the study program, ii) the need for students to work hard during their studies; iii)

the high cost of training in certain centers and low stipend compared to the standard of living of some host countries, iv) the language barrier suffered by some Members especially the French-, Spanish- and Portuguese-speaking countries for activities in certain training centers, v) lack of adequate funding, vi) opportunity to learn from the international best practices.

c. Suggestions on cost-sharing and cost-effective measures to enhance the WMO Fellowship Programme

There was range of responses to the questionnaire on the issue of cost-sharing and cost-effectiveness. In general, the feeling was that the issue depends on the host countries' living standard and the need to adjust to the living cost/stipend or allowance for the fellow to study in convenience. It was noted that partial fellowship is better than none and prior consideration should be given to those countries /institutions that are not expensive and can offer quality training. Cost could be shared if the arrangement for fellowships are planned so that the countries know how many approved fellows they are likely to have in advance. This would help secure funds from the governments` annual budgets so as to contribute in the form of paying the students` airfares. WMO should try to determine local funding capabilities and assist wherever there are shortfalls. It was also suggested that the participating Members could share the cost of the training depending on flexibility of their financial status. A country proposed that fellows should sign a contract agreement that if they fail the course, they will pay back WMO at least eighty percent (80%) of the entire cost.

Some expressed the opinion that a good way of applying cost-sharing and cost-effectiveness is by conducting in-house training program with expert/s visiting national Services and providing group training in the country. It would even be more cost-effective if the visiting expert service is provided with the necessary support to coach the trainees for a period of time until they are certified. The conducting of online training programs is another suggested means of realizing cost-sharing and cost-effectiveness. At the country level, some felt that WMO could extend collaboration with national universities to establish faculties of meteorology, operational hydrology, climatology, numerical prediction modelling etc. which would paved way to higher education (MS/PhD level) in the countries.

Respondents also call on WMO to continue to encourage partners to improve funding which generally seems to be declining. The trust funds, projects and the WMO-VCP were found to be really good funding mechanisms and increased support should be solicited for sustainability of the FP. Funds should be solicited also from other non-governmental organizations and regional banks. It was felt by some that Members countries should make more efforts to pay their annual contributions to the Organization.

PART C - CONCLUSIONS AND RECOMMENDATIONS

1 *Conclusions*

The Fellowship Programme, which is a main component of the WMO Education and Training Programme (ETRP), has been playing a significant role in the development of national Meteorological and Hydrological Services (NMHSs) of Developing Countries, Least Developed Countries (LDCs) and Small Island Developing States (SIDs) since its establishment in 1960. From the outset, newly sovereign nations in the WMO Regions were

faced with multiple development challenges requiring huge financial and human resources to address them. Adequate trained and skilled personnel were urgently needed for the growth and development of these nations, whose contributions on the other hand, were vital to the success of the WMO global systems such as the World Weather Watch and the fulfilment of the mandate of the Organization. It was therefore against this premise that WMO, through its Fellowship Programme and development partners, has been engaged in the training of thousands of experts in meteorology, hydrology and related fields over the past decades.

Despite the achievements made, the demand on capacity development has been ever increasing due to the progressive advancements in science and technology. The introduction of the super highway computers, Internet, satellites and radars, the novelties in equipment and instruments, modern techniques of weather observation, analysis, interpretation and forecasting are all dynamic changes that the Developing Countries have to respond to and this makes the WMO Training and Fellowship Programme a non-static activity that revolves around the evolving needs of the Members. The evaluation has reviewed the mandate, structure, process and activities of the FP. An analysis and interpretation of the information on the effectiveness, impact, relevance and sustainability of the FP were carried out for the period covering 2005 to 2015.

From the analysis undertaken, it can be concluded that the FP is needed today more than ever before by the NMHSs of developing Member countries in order to continue to contribute effectively the sustainable development of their nations and the world at large. The programme has been found to be very positive and effective in its delivery at the national, regional and global levels. Due to the increasing demand in training and specific needs, it has remained a very relevant Programme to the Members. Although there was never a time when the requests for fellowships were met fully and the evaluation has shown that RA III had the highest of their demands met (71.9%) and RA I, the lowest (45.07%), one can conclude that on the average, the Programme has made a significant difference and impact on the day-to day operations of the NMHSs, which are capable today to issue weather forecasts and warnings as a minimum.

Indeed the shortfall in meeting the Members` evolving needs, which is mainly due to inadequate funding has triggered WMO to become more aggressive in resource mobilisation and in fostering more partnerships with governmental and non-governmental organizations, civil societies, regional and international banks as well as international funds arising from initiatives such as the Climate Risk and Early Warning System (CREWS) launched at COP 21 in Paris in December 2015, the Green Climate Fund and the Sendai Framework for Disaster Reduction. In addition to WMO efforts, stakeholders especially Members are required to be more proactive in responding to the available opportunities at the bi-lateral and multi-lateral levels. Trust Funds, VCP, and Projects have been noted on the decline in recent years whilst requests are steadily increasing given the devastating effects arising from climate variability and change. It is therefore pertinent to reverse this trend by calling on all stakeholders to take appropriate and concerted actions at the national, regional and global levels. At the national level, weather, climate and water should be given their fair share of the national recurrent and development budget allocations and the UNDP country programmes. An improved visibility and image of the Services and proactivity of the Permanent Representatives could facilitate the attainment of an increase in their national budgets.

The funding problem could be partially addressed by additional efforts to render the WMO Regional Training Centres (RTCs) and regional institutions more effective. The outcome of the evaluation has revealed the important role being played by the RTCs and other regional institutions in the training of staff of the NMHSs. Not only are they assisting in building the capabilities of NMHSs through the promotion of south – south partnership or cooperation amongst developing countries, they are avenues of cost-effective and affordable training in the regions. They are also agents for enhancement of north-south partnership, which has always existed as students from developing countries have been attending training programmes in developed countries to gain valuable qualifications and skills. In order to make the north-south partnership more cost-effective, there should be instances when experts from developed countries could be deployed to provide face-to-face, blended learning or online training at the RTCs and national institutions using their models to obtain similar outcomes. The current collaboration between RTC Nairobi and UK Met Office, AEMET and the Spain-speaking countries in Latin America and Meteo-France and French-speaking countries are pertinent examples, in this regard.

At the level of the WMO Secretariat, continued efforts have been made to better address the needs of Member in capacity building through the Fellowship Programme. Since 2004, new measures have been continuously introduced to make the Programme efficient and more effective. The latest significant action was the establishment of the Education and Training Committee (ETCOM) in January 2017. ETCOM is aimed at bringing about greater efficiency in the Education and Training Department by having the activities of the Fellowship Division and that of Training Division under one coordination mechanism. It replaced FELCOM and the Training Committee with a view to optimize the available resources in order achieve more productivity. ETCOM also encourages improved consultation and coordination on training activities amongst the scientific and technical departments within the Secretariat. The practice of each department or programme implementing its own trainings in isolation of others should be discouraged whenever possible. The training events of all departments should be synchronized and well-coordinated at the quarterly or biannual meetings of ETCOM in order to determine how saving of resources could be made in order to address more of the of Members needs`.

2 Recommendations

In light of the above conclusions, the following recommendations are being proposed for the consideration of the Director of Education and Training Department and the relevant governing bodies of WMO:

i) Increased financial and human resources should be provided to the Fellowship Programme that has remained a highly valuable Programme over the several years for developing Member countries of WMO, particularly the Least Developed Countries and Small Island Developing States as well as WMO. The important role in capacity building being played by the FP has being re-echoed continuously in the EC and Congress sessions and every effort should be made by all stakeholders to improve the output and performance of the Programme in the light of emerging needs.

ii) The Member countries, especially those benefiting from the programme, have also significant role to play in the success and sustainability of the FP. In this regard, it is recommended that they react more positively to the demands addressed to them regarding the implementation of fellowships. These include:

a. Having a robust strategic plan of the Service that guarantees the employment and/or career development of fellows upon completion of studies;
b. Nomination of suitable and qualified candidates for award of fellowship; NMHS that recommend the candidate should have certain selection criteria to send those who are really interested and meet the basic requirement to study abroad;
c. Commitment to the practice of cost-sharing in training and to the increased use of Regional Training Centres, as appropriate;
d. Submission of reports upon fellow's completion of studies, 3 months after and the 18 months after studies impact report. The later has been poorly responded to by the PRs, as noted in the finding of the evaluation and it is recommended that the decision taken by EC on this matter should be fully enforced by ETCOM.

iii) At the level of the Secretariat, it is highly recommended that training activities being undertaken by the different Departments and Programmes be more effectively coordinated under the umbrella of ETR. The newly established ETCOM which replaced the defunct Training Management Team (TMT) and FELCOM is a landmark development in the annals of WMO`s ETRP and concerted effort and commitment should be made through this body to render it efficient and effective by ensuring that there is complementarity and not duplication of the limited resources ear-marked for capacity development of Members;

iv) With respect to the day-to-day operations of the Fellowship Programme, it is crucial to have in place reliable and user-friendly tools for the attainment of more timely and reliable delivery of fellowships. In this regard, it is recommended that:

a. the Fellman Plus database that has been a useful tool for the fellowship delivery during the past years needs be updated or overhauled as soon as possible to better suit the present demands of the Programme. It is noted that actions are being taken to integrate it as part of a planned single organization-wide database system. In such a case, due attention should be given to the impact of the transition phase on the FP and the support of ITD should be readily available to the Division as and when required;

b. in order to improve communication and outreach with Members, partners and RTCs and to increase the transparency of the Programme, ETR should initiate the publication of the training and fellowship deliveries in the form of newsletter on the WMO website. The discontinued Annual Report of the Organization used to provide similar information for the consumption of all and sundry;

v) The evaluation has noted the important role being played by the partners in the delivery of the FP. There has been an expansion of this partnership in recent years and this is expected to grow in the future. In order to enable the partnership to have a greater impact on the FP, it is recommended that these partners including universities, other training institutions and funding agencies have a very good knowledge and understanding of the

WMO Mandate, its goals, structures and Programmes and how the Organization functions. This could be achieved through several ways including improved communication, information and visit exchanges and participation in events of common interest.

vi) The outcome of the evaluation has recognized the crucial of role the Regional Training Centres and training institutions in the WMO Education and Training Programme from the outset. On the whole the responses from the two questionnaires have been positive especially with regards to cost-effectiveness and cost-sharing of the training events and sustainability of the FP. However, most of the respondents felt that more could be done with institutions to improve the delivery of fellowships. In this regard, it is recommended that:

a. The trainings offered by the RTCs and other regional training institutions should have the required quality both in content and substance and should be relevant to the geographical location country concerned, i.e. weather in mid-latitude focused or tropical. There should be greater and more transparent collaboration between the NMHSs and the training institutions to ensure there is a balance of theoretical and applied material that relates to the NMHS job description;

b. In view of the expectations from the Fellows, the FP should make a deliberate effort to build the capacity of the RTCs in terms of:
   (i) training in structural development - for development of eLearning courses
   (ii) training on development of blended courses
   (iii) Training of trainers' - pedagogy etc.;

c. Noting that the absence of staff from their jobs over a long period of time can, in some cases be significant impediment to the submission of applications for fellowships, it is recommended to continue promoting on-line and blended learning at the RTCs as and when deemed more appropriate and cost-effective. In this regard, it is also recommended give more effort to in-country group training which has several merits of cost- effectiveness, impact and sustainability.

d. The issue of language has been raised by some respondents to the questionnaire and WMO has taken cognizance of this issue since long ago. It is therefore recommended that continued action be taken to ensure the distribution of RTCs based on the different languages of WMO.

vii) The WMO Fellowship Programme has over the past decades contributed enormously to the capacity and competency building of NMHSs of developing countries through concerted efforts with Member countries and partners. The evaluation has highlighted the major factors that influence to the achievement and non-achievement of sustainability impact of the FP and the need for further action on this matter to consolidate the impacts and determine the risk factors, particularly at the national and regional levels. In this regard, it is recommended that a framework strategy for sustainability of the Fellowship Programme be developed in the near future in order to further enhance the capacities and competencies of the NMHSs.

Annexes:

Annex 1 (a) Decision 10.2/4 (EC-68)

IMPACT EVALUATION OF THE WMO FELLOWSHIP PROGRAMME

THE EXECUTIVE COUNCIL,

Notes the importance of the WMO Fellowship programme to many Members, particularly those from Developing and Least Developed Countries and Small Island Developing States and Member Island Territories;

Notes further:

(1) The potential to attract additional funding to support education and training of National Meteorological Services in Member countries through processes such at the Climate Risk and Early Warning System (CREWS) initiative launched at COP 21 in Paris in December 2015, the Green Climate Fund and Sendai Framework for Disaster Risk Reduction;

(2) The succession of audits of the WMO Fellowship Programme carried out by the WMO Internal Oversight Office;

(3) The Terms of Reference of the EC Panel of Experts on Education and Training (Resolution 17 (EC-66)) particularly ToR 6, *"To provide the Executive Council with advice on actions to improve the effectiveness of the Fellowship programme based on an ongoing review and evaluation of the programme*";

(4) The contributions of the WMO Fellowship Programme to the wider WMO Capacity Development Programme;

Decides that an impact evaluation of the WMO Fellowship Programme should be undertaken;

Requests:

(1) The EC Panel of Experts on Education and Training to oversee an impact evaluation of the WMO Fellowship Programme and prepare recommendations for consideration by EC-70 in 2018 with a progress report to be made available to EC-69 in 2017. The Annex outlines the terms of reference for the evaluation;

(2) The Secretary-General to assist the EC Panel of Experts on Education and Training in carrying out the impact evaluation;

(3) The Secretary-General to consider raising the extrabudgetary resources estimated at CHF 40,000 that may be required to carry out and finalize the report in the desired time frame;

(4) Members to assist in the evaluation programme by providing input to the evaluation upon request.

Annex: 1

TERMS OF REFERENCE OF THE IMPACT EVALUATION OF THE WMO FELLOWSHIPS PROGRAMME

Purpose of Review:

This review seeks to quantify the benefits accrued through fellowships to the Members, with the aim of making a case for enhanced delivery of the WMO Fellowship programme.

Outcomes:

Key outcomes of this initiative include, but are not limited to, seeking increased Fellowship opportunities to NMHSs in WMO Member States to improve their operations and contributions to current and future national development needs.

Outputs:

The report from this work is expected to highlight:

(a) The historical performance of the Fellowship programme and quantify benefits derived by Member States;
(b) Possible approaches for continuous tracking of the benefits derived from the Fellowship programme to Member States;
(c) Risk reduction strategies that further enhance the benefits of the programme;
(d) The present and future demands for geographically focused training with the goal of identifying changing focus and areas for training where significant benefits may be accrued;
(e) Other possible areas of reporting including but not limited to:
    (i) Strategies for increasing future Fellowship opportunities including where greater efficiencies may be derived;
    (ii) Strategies for attracting additional resources to the Fellowship programme to further enhance its benefits to Members;
    (iii) Options to assist Members address emerging challenges such as meeting the qualification and competency requirements being introduced into the WMO Technical Regulations.

Specific Actions/Activities to be Conducted:

The assessment may utilize some or all of the following activities:

(a) Review of the Terms of Reference of the Fellowship programme;
(b) Review of existing annual reports and audit reports of the Fellowship programme;
(c) Determining how the organizational risk factors of the applying agency are accounted for in the fellowship review process;
(d) Review of the success of the fellows in terms of numbers of:
    (i) Awardees who successfully complete Fellowships;
    (ii) Awardees who achieve a high degree of success;
    (iii) Fellows receiving multiple awards;
    (iv) Fellows who do not complete programmes and the reasons for poor performance;

(v) Fellows who repeat the same programme;

(e) Collecting information on the benefits of the Fellowship programme from selected Member States such as:
   (i) Frequency of utilization of the Fellowships programme and in what areas;
   (ii) Highlighting other mechanisms used to fund the building of capacity and competence;

(f) An appropriate tool(s) to collect information from selected beneficiaries of fellowships with a view to determining the benefit of the fellowship to the Service as well as the individual fellows;

(g) Questionnaire to RTCs regarding their use of the Fellowship programme to build the capability and competency of their staff, to determine the:
   (i) Frequency of use of the Fellowship programme to build capacity and competence;
   (ii) Areas where fellowships were utilized;
   (iii) Retention of Fellows;
   (iv) Other mechanisms used to fund the building of capacity and competence;
   (v) Whether apart from training, do Fellows contribute to other regional and national programmes that support the sustainable development agenda;

(h) Questionnaire to RTCs about how to enhance the cost effectiveness of programmes and where possible how to reduce the cost of training, asking:
   (i) Are Fellows entering programmes appropriately prepared;
   (ii) How much of the training programmes are geared at foundation building to enable students to undergo the core training;
   (iii) How much of the programme is dependent on the participation of Fellows, i.e., in the absence of Fellows would programmes have sufficient participation to make them cost-effective;

(i) Development of a methodology based on a weighted points system to risk-rank the investment grade of Member States from the perspective of fellowships. The methodology should take into account:
   (i) Frequency of usage of the Fellowships programme;
   (ii) Average investment;
   (iii) Success/failure rates of Fellows;
   (iv) Retention of Fellows in the organization or the national/regional weather and climate enterprise;
      - up to 1 year, 1-5 years, 5-10 years, 10-15 years etc.

Methodology:

The Task Team to work with the ETR Office to further develop the Terms of Reference and detailed timelines given the requirement for a progress report in mid-2017 and a full report in 2018.

Annex I (b): Terms of Reference of the Impact Evaluation of the WMO Fellowship Programme

TERMS OF REFERENCE / DESCRIPTION OF DUTIES

Under the supervision of Director Education and Training Office, and taking into account the content of Decision 10.2/4 of the 68th Session of WMO Executive council, the consultant will carry out the following assignments:

a) Examine the implications of the decision of EC 68 10.2/4 vis-a-vis the mandate of WMO in the area of education and training with a view of identifying areas where activities of its fellowship programme are expected to make impact;

b) Collate the recommendations from existing internal evaluations and audits of WMO fellowship with the aim of integrating them into the impact evaluation process;

c) Compare and contrast the WMO's fellowships programme with those of other UN agencies and organizations with similar mandate to identify best practices the WMO Fellowships programme should consider;

d) Review the effectiveness of the fellowship programme. This should give consideration to: (i) effectiveness of delivery in each WMO Region; (ii) effectiveness in addressing areas of current and emerging demand in each WMO Region; and (iii) in building/leveraging North-South and South-South partnerships to expand training opportunities.

e) Analyse the success of the fellowship programme in the WMO Regions and recommend changes the programme should consider with regards to resource allocations among regions and priority areas within regions;

Taking into account the WMO mandate and Members" expectation, make recommendations on how to improve on the efficacy of the programme.

Annex II: Matrix for the Impact Evaluation

Evaluation Criteria	*Key Evaluation Questions*	*Sub-questions*	*Indicators*	*Data Source*	*Data Collection Method*
Effectiveness	To what extent has the Fellowship achieved its objectives?	What are the current and emerging fellowship demands?	Programme stakeholders' views	Senior management; Technical Programme (TP) staff; Governance members and focal points (FPs); Members	Questionnaire; Interviews
		Has the fellowship programme delivery been effective in WMO Regions?	Alignment of the Fellowship Programme with Strategic Plan and priorities of Regional Associations; Programme stakeholders' views	Strategic planning documents; Senior management; ETR staff; TP staff; Governance members and FPs; Members	Questionnaire Document review; Interviews
		In what ways have partnerships been broadened to expand training opportunities?	Programme stakeholders' views Donors input	Members, TP staff (ETR Task Team members)	Questionnaire Document review, interviews
		What role has the internal evaluations and audits been playing in the implementation of the fellowship programme?	Programme stakeholders' views, IOO recommendations	Documentation; ETR staff; TP staff, Governance FELCOM	IOO Reports, review; Interviews
Impact	What real difference has the activity made to fellows?	Have the position of the fellows progressed as a result of the training received or qualification gained?	Stakeholders' views	Stakeholders; ETR Staff; TP staff; Governance members and FPs	Questionnaire, FEL reports, Interviews
		What are the impacts of the fellowship programme on the individual fellows?	Stakeholders' views	Stakeholders; ETR Staff; TP staff; Governance	Questionnaire, FEL reports, Interviews
	What real difference has the activity made to fellows?	What are the impacts of the fellowship programme at the national and regional levels?	stakeholders' views; programme implementation and assessment	Members; ETCOM reports, Governance and stakeholders	Document review; Questionnaire; Interviews
		What are the impacts of the fellowship programme at the global level?	stakeholders' views; programme implementation and assessment	Members; reports, Governance and stakeholders	Document review; Interviews
Relevance	To what extent are the objectives of the fellowship programme consistent with the needs of stakeholders	What is the assessment of the objectives of the fellowship programme in light of the current dispensation?	ETCOM views, stakeholders' views; Governance; programme implementation and assessment	ETCOM Reports, Senior management, ETR Staff; TP staff	Questionnaire Document review; Interviews
		Are the activities and outputs of the	Governance Evidence of clear	Members Senior	Questionnaire Document review;

Evaluation Criteria	*Key Evaluation Questions*	*Sub-questions*	*Indicators*	*Data Source*	*Data Collection Method*
		fellowship programme consistent with the overall goal and attainment of the objectives?	understanding among FELCOM members of the ETR's mandate; Programme stakeholders' views	management; ETCOM Reports	Interviews
		Are the activities and outputs of the fellowship programme within the framework of the intended impacts and effects?	Governance Stakeholders' views Evidence of clear understanding among FELCOM members of the ETR's mandate; Programme	Members Senior management; ETCOM Reports	Questionnaire Document review; Interviews
Sustainability	How sustainable are the changes brought about by the fellowship programme?	To what extent do the fellows continue to contribute to the capacities of the NMHSs?	Evidence of number fellows retained in the Service	ETCOM report	Questionnaire Interviews
		What are the major factors which influenced the achievement or non-achievement of sustainability impact of the fellowship programme?	Stakeholders' views	ETCOM report	Questionnaire Document review; Interviews

Annex III (a): Questionnaire for the Impact Evaluation of the WMO Fellowship Programme.

I. Effectiveness of the programme							
A.	Information on members of staff in your Service *who have benefited from the WMO Fellowship Programme* from 2005 to 2015.						
1.	Name of the institution/organisation:						
2.	The total number of benefited staff members:						
3.	Fields of study:						
4.	Degree/diploma obtained and duration:						
5.	Current fields of activity since returning:						
	☐ Administration and Management						
	☐ Meteorology (public weather services, aviation, agriculture, marine, health, transport, etc.)						
	☐ Climate services and climate change, disaster risk reduction						
	☐ Operational hydrology, water resources management						
	☐ If none above, please describe the field:						
B.	What use has your Service made of the WMO Regional Training Centres (RTCs) and other regional institutions from 2005 to 2015?						
C.	How would you rate the training provided by RTCs and other regional institutions? (1=Poor; 2=Fair; 3=Good; 4=Very Good; 5=Excellent; N/A=Not Applicable)						
		1	2	3	4	5	N/A
1.	Quality						
2.	Coverage of training content/activities						
D.	Are there any ways in which the present interaction/collaboration between RTCs and national Services could be improved or expanded? ((Please give details below, using an additional page if necessary).						

II. Impact of the programme	
A. On personal level	
1. Name of Fellow/Staff	
2. Position in the Service prior to the degree	
3. Position in the Service after degree	
4. Has the position progressed?	
If YES, was the progress a direct result of the training received or qualification gained?	
If NO, please briefly explain the reasons (lack of position openings, etc.)	
5. Impacts of the fellowships programme on individual fellows (career development, research output, etc.). (Please give details below, using an additional page if necessary).	

II. Impact of the programme (continued)

B. On institutional/regional/national level

1. What real difference has the training activity made to the capacity development of the NMHSs?

2. To what extent does the WMO Fellowship Programme contribute to your development activities at the national and regional levels, in terms of:

   (1=Not significant; 2=Somewhat significant; 3=Significant; 4=Very significant; 5=Extremely significant; N/A=Not Applicable)

	1	2	3	4	5	N/A
i. increasing the number of qualified and competent staff						
ii. addressing current and emerging demands on weather, climate and water aviation, marine, agriculture, DRR, etc.						
iii. transfer of knowledge to other staff members						
iv. promoting visibility of NMHSs						
v. contributing to socio-economic development						

3. To what extent has the programme contributed to your participation at the international level:

   (1=Not significant; 2=Somewhat significant; 3=Significant; 4=Very significant; 5=Extremely significant; N/A=Not Applicable)

	1	2	3	4	5	N/A
i. networking with relevant partners and activities						
ii. involvement with host institutions activities						
iii. participation in WMO bodies, experts working group including IPCC and COP						
iv. participation in other international cooperation structures and bodies						
v. others						

III. Relevance of Fellowships Programme

1=Strongly disagree; 2=disagree; 3=Neutral; 4=Agree; 5=Strongly Agree;
N/A=Not Applicable

		1	2	3	4	5	N/A
A.	The objectives of the fellowship programme are still valid.						
B.	The training you received was relevant to your current role.						
C.	The activities and outputs of the fellowship programme are consistent with the overall goal and attainment of the objectives.						
D.	The activities and outputs of the fellowship programme are consistent with the intended impacts and effects.						
E.	The WMO Fellowship Programme is delivered effectively at the national and regional levels.						
F.	If any, please provide your views about the relevance and efficiency of the WMO Fellowship Programme, and how the programme could be improved.						

IV. Sustainability of the WMO Fellowship Programme

A.	To what extent do the fellow continue to contribute to the capacities of the NMHSs, what is the dropout rate?
B.	What are the other sources of funding or partners that are available to train your staff?
C.	What were the major factors which influenced the achievement or non-achievement of sustainability impact of the fellowships programme
D.	Please provide suggestions regarding cost-sharing and cost-effective measures that could be taken to enhance the WMO Fellowship Programme

Annex III (b): Questionnaire On Impact Evaluation Of The WMO Fellowship Programme (Mainly Developed Countries)

a	Please provide your views about the relevance of the WMO Fellowship Programme to the delivery of capacity development cooperation programme in your country. , its delivery at the national and regional levels and how the programme could be repositioned.
b	How important is climate and water related issues in the development cooperation programme of your country?
c	What would you consider as the major factors which could influence the achievement or non-achievement of sustainability impact of the fellowships programme at the national, regional and global levels?
d	Please provide suggestions on resources mobilization options for capacity development on weather, climate and water issues through the WMO Fellowship Programme.
e	Please provide any other comments on how to ensure sustainability and continued relevance of the WMO fellowship programme

Annex IV: Letter sent by Secretary General to Members regarding the Fellowship Impact Evaluation.

WMO OMM

World Meteorological Organization
Organisation météorologique mondiale
Organización Meteorológica Mundial
Всемирная метеорологическая организация
المنظمة العالمية للأرصاد الجوية
世界气象组织

WEATHER CLIMATE WATER
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Our ref.: ETR/FEL

GENEVA, 15 December 2016

Subject: Implementation of EC Decision on Impact Evaluation of the WMO Fellowship Programme

Action required: For your information

Dear Sir/Madam,

The WMO Fellowship Programme has been playing a significant role in the capacity development of the National Meteorological and Hydrological Services (NMHSs) of many WMO Members countries, particularly those from Developing and Least Developed Countries and Small Island Developing States and Member Island Territories. In this regard, the sixty-eighth session of the WMO Executive Council, held in Geneva in June 2016, adopted Decision 67 (EC-68) to carry out an impact evaluation of the Programme, with the aim of making a case for enhanced delivery and improved efficacy.

The evaluation will seek increased fellowship opportunities to NMHSs in WMO Member States, so as to improve their operations and contributions to current and future national development needs. Furthermore, the evaluation will give consideration to:

(a) Effectiveness of delivery of the Programme in each WMO Region;
(b) Effectiveness in addressing areas of current and emerging demand in each WMO Region;
(c) Building of North-South and South-South partnerships to expand training opportunities;
(d) Allocation of resources and priority areas within Regions.

The purpose of this letter is to inform Members that the impact evaluation of the WMO Fellowship Programme has begun through a survey on education and training needs to which more than 110 Members contributed. Further to this survey, in order to enhance the efficiency of the evaluation, a sample of Member countries from each Region will be identified, with the aim of seeking their contribution to the exercise.

I look forward to your continued cooperation in the delivery of this important activity.

Yours faithfully,

(W. Zhang)
for the Secretary-General

To: Permanent Representatives (or Directors of Meteorological or Hydrometeorological Services) of Members of WMO (PR-6942)

cc: Hydrological Advisers to Permanent Representatives

Annex V(a): Service Note on the WMO Fellowships Committee.

World Meteorological Organization
Organisation météorologique mondiale

Temps • Climat • Eau
Weather • Climate • Water

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Reference:
Standing Instructions
Chapters 1 and 4

GENEVA, 22 March 2006

SERVICE NOTE No. 10/2006

FELLOWSHIPS COMMITTEE

1. In order to reach the highest possible level of effectiveness, fairness and transparency in the granting and the implementation process of fellowships, it is decided, with immediate effect, to transform the Fellowships Committee established by Service Note No. 4/2004 into a Standing Committee.

2. The objective of the Fellowships Committee (FELCOM) is to contribute to the increase of the efficiency of the WMO Fellowships Programme, in particular to make the administration and management of fellowship and post-fellowship activities more effective.

3. The Terms of Reference of the FELCOM are as follows:

- To regularly review the fellowship requests submitted by Permanent Representatives to the Secretary-General to ensure their suitability for the education and training needs and requirements of Members;
- To make recommendations to the Secretary-General with respect to candidates proposed to be awarded fellowships;
- To monitor and evaluate progress of the fellowship activities;
- To review periodically the criteria to be used for evaluating requests taking into account ongoing and emerging developments, and to make recommendations to the Secretary-General.

4. The Fellowships Committee will be composed as follows:

- Chairperson: Director, Education and Training Department
- Members: Director, World Weather Watch Department
  Director, World Climate Programme Department
  Director, Hydrology and Water Resources Department
  Director, Regional Activities and Technical Cooperation for Development Department (D/RCD, and D/VGP as alternate member)
  Director, Resource Management Department (D/REM, and Chief, Budget Office (C/BO) as alternate member)
- Secretary: Chief, Fellowships Division (C/FEL)

5. The Chairperson will make appropriate arrangements to consult, via RCD, Regional Directors on the suitability of the requests for fellowships and study tours.

6. The Fellowships Committee will hold a meeting at least four times a year. It will establish its own working methods. Documentation, with appropriate background information (such as statistics on past fellowships for particular regions/countries, effectiveness of such fellowships, domains concerned, compliance of coutries in providing justifications/reports, etc.) will be prepared by C/FEL and, as required, by C/BO.

7. The Directors of all Departments and Offices are requested to cooperate with the Fellowships Committee in discharging its responsibilities. In particular, the Regional Directors will brief the PRs on the recommendations made by FELCOM for their nominated candidate.

8. This Service Note replaces and supersedes the previous Service Note No. 4/2004.

(M. Jarraud)
Secretary-General

Annex V(b): Service Note on the Education and Training Committee.

WEATHER CLIMATE WATER

WORLD METEOROLOGICAL ORGANIZATION | SERVICE NOTE

Reference:
Standing Instructions
Chapter 1

Geneva

SERVICE NOTE 2/2017

EDUCATION AND TRAINING COMMITTEE

Scope

The main objective of the Education and Training Committee (ETCOM) is to advise the Secretary-General regarding fellowships and training awards, and overall coordination of WMO training requirements and activities across all departments and Programmes, with the aim of contributing to the improvement of the efficiency and effectiveness of WMO education and training activities, through better interdepartmental collaboration. Cross-departmental coordination will give Departments the opportunity to leverage their education and training funds, hence possibly allow for provision of more fellowship and training opportunities through the Education and Training budget.

Terms of Reference

The role of ETCOM shall be as follows:

i) Fellowships related:

(a) Regularly review the fellowship requests submitted to the Secretary-General by Permanent Representatives of Members with WMO, to ensure their suitability for support taking into account the education and training needs and requirements of Members;

(b) Make recommendations to the Secretary-General with respect to the candidates proposed for fellowships;

(c) Monitor and evaluate progress of the fellows and fellowships activities;

(d) Review periodically the processes and procedures to be used for evaluating requests, taking into account the criteria set by the Executive Council, as well as ongoing and emerging developments, and to make recommendations to the Secretary-General.

ii) Training related:

(a) Analyse and synthesize the requirements for education and training opportunities identified through Departments, Regional Associations, Technical Commissions, individual Members, and other entities;

(b) Establish priorities for training in specialized weather, climate and water subjects, and in other topics that cut across WMO Programmes and priorities, such as DRR, GFCS, WIGOS/WIS, service delivery and capacity development, as well as management, development issues, communication, client relations, gender issues, and government and public education as identified in the WMO Strategic Plan, which meet priority needs of Members, Regional Associations and Technical Commissions;

(c) Establish requirements and priorities for education and training tools, as well as for curriculum development with recommendations for implementation;

(d) Assist concerned Technical Departments (TDs) and Education and Training Office (ETR) in making the best arrangements for WMO support to training events initiated by Member countries and by international or regional organizations, but not foreseen in the ongoing WMO plans;

(e) Assist ETR and the TDs in establishing mechanisms to conduct, monitor and evaluate WMO training activities, including procedures to assess the impact of those activities in Member countries with the aim of improving the effectiveness of WMO training for Members and in support of WMO Programme Performance Reporting against key performance targets.

(f) Make recommendations to the Secretary-General with respect to training activities with budgetary implications;

iii) ETCOM will advise the Secretary-General on all other relevant education and training matters, including on emerging priorities on education and specialized training in weather, climate and water.

Composition

The Education and Training Committee will be composed as follows:

- Chairperson: Assistant Secretary-General (ASG)
- Vice Chairperson: Director, Education and Training Office (D/ETR)
- Members:
  - Director, Development and Regional Activities Department (D/DRA)
  - Director, Observing and Information Systems Department (D/OBS)
  - Director, Weather and Disaster Risk Reduction Services Department (D/WDS)
  - Director, Resource Management Department (D/REM) and Chief, Budget Office (C/BO) as alternate member
  - Director, Climate and Water Department (D/CLW)
  - Director, Research Department (D/RES)
  - Strategic Planning and Risk Management Officer

• Joint Secretaries: (a) For Education and Fellowship matters, Chief, Education and Fellowships Division (C/FEL), and (b) For Training matters, Chief Education and Training Office (C/TRA)

Working procedures

Organization of Committee's Meeting

ETCOM will meet at least three times a year and review its procedure as necessary, taking into account new and emerging changes in the Organization.

Additionally, a fast-track consultation process may be organized, in case of urgent or otherwise unforeseen matters, as determined by the Chairperson. The consultations will take place electronically without a meeting.

Generic agenda

The Secretaries will prepare the provisional agenda in consultation with D/ETR.

The agenda shall consist of:

1. Approval of agenda;
2. Outstanding items from previous ETCOMs;
3. System-wide needs, policy and coordination issues;
4. Consideration of new requests for fellowships and/or trainings from Members and departments
5. Budgetary and resource mobilization matters;
6. Other items regarding implementation recommendations and internal processes and procedures.
7. Any other business

The provisional agenda and necessary documentation will be circulated to all members at least one week prior to the meeting and two days prior to the consultations in case of fast-track procedure.

Documentation, with appropriate background information (such as statistics on past fellowships for particular regions/countries, effectiveness of such fellowships, domains concerned, compliance of countries in providing justifications/reports, etc.), will be prepared by the Secretaries and, as required, by C/BO.

Report of the meeting

The report of the meeting shall be prepared by the Secretaries and, after approval by the ETCOM members, sent by the Chairperson to the Secretary-General within two weeks following the meeting, unless additional time is required as determined by the Secretaries. The report shall reflect the agenda items and shall contain:

- Recommendations to the Secretary-General;
- Financial commitment;
- Actions placed, if any, including actionee and the applicable deadline;

This Service Note replaces and supersedes Service Note No. 4/2007 on Training Management Team for the Cross programme Coordination of the WMO Training Activities and Service Note No 11/2014 on Fellowships Committee.

Annex VI: The Executive Council Criteria for the Award of WMO Fellowship (As approved by EC-66, June 2014)

1. The aim of the WMO Fellowship Programme is to support the education and training of qualified and suitable candidates, particularly from least developed and developing countries and Small Island Developing States. Applications from women are especially encouraged. Fellowships should benefit both the individual candidate and the candidate's institution, usually the National Meteorological and Hydrological Services (NMHSs).

2. WMO may award both short-term (less than six months) and long-term (6 months or longer) fellowships, based on recommendations of the Fellowships Committee aligned with the priorities of the ETRP.

3. Candidates applying for a WMO fellowship must complete a Fellowship Nomination Form, which must be certified by the Permanent Representative of the recipient WMO Member. The Permanent Representative will specify, amongst others, the expected benefit to the individual (for example to produce a qualified workforce), and the benefit to the nominating institution (for example to assist in the organizational development of the NMHSs in the light of the changing needs of the services required to meet the evolving needs of users).

4. To be considered by the Fellowships Committee for a fellowship, candidates must:

(a) Meet the entry requirements for the proposed course of study;
(b) Be proficient in, or capable of learning in, the language of study;
(c) Be of sound health as confirmed by their completed medical certificate;
(d) Only apply for courses of study directly applicable to WMO Programme areas.

5. Newly appointed directors of NMHSs are also eligible for very short-term training programmes in the management of NMHSs and for familiarization visits.

6. In awarding a fellowship, preference will be given to candidates who:

(a) Come from countries with least developed NMHSs as well as developing countries, countries with economies in transition and countries more vulnerable to natural disasters;
(b) Are supported by cost sharing;
(c) Apply for courses at RTCs or other training institutions in their Region;
(d) Apply for short-term fellowships or long-term fellowships not exceeding 18 months in duration;
(e) Are expected to work and make a long-term contribution in the NMHS of their country in a suitable post on completion of the fellowship;
(f) Have not been awarded a long-term WMO fellowship within the previous four years;
(g) Comes from a country that has not recently benefited from a WMO fellowship.

7. In awarding a fellowship, account will be taken of:

(a) The need for regional proportional balance;
(b)The need to practice equal opportunity policies (see Resolution 33 (Cg-XIV) – Equal opportunities for the participation of women in meteorology and hydrology);
(c) Whether the Permanent Representative from the candidates' country has provided WMO with the required report from any previous fellowship.

Annex VII: Fellowship Monitoring Reports (2004 – 2016) and Sample of Post-Fellowship Reports

Region	Home Country	Total Fellowships	Completion	3 Months	18 Months	Case closed by PR	Total Outstanding
I	Angola	6	0	0	0	0	18
	Benin	12	9	4	4	0	19
	Botswana	4	0	2	0	0	10
	Burkina Faso	12	5	3	1	0	27
	Burundi	8	5	5	4	0	10
	Cameroon	11	9	7	3	0	14
	Cape Verde	4	2	1	1	0	8
	Central African Republic	8	5	5	5	2	3
	Chad	8	2	1	1	0	20
	Comoros	8	7	3	4	1	7
	Congo	10	8	6	5	0	11
	Congo, The Democratic Republic of the	10	5	6	5	0	14
	Cote d'Ivoire	14	12	6	3	1	18
	Djibouti	7	3	2	2	0	14
	Egypt	8	6	6	1	0	11
	Ethiopia	19	15	13	5	3	15
	Gabon	6	3	2	2	0	11
	Gambia	20	11	7	8	0	34
	Ghana	19	12	11	11	0	23
	Guinea	11	8	7	5	1	10
	Guinea-Bissau	13	11	11	10	1	4
	Kenya	19	16	16	14	2	5
	Lesotho	31	27	25	23	4	6
	Liberia	11	11	10	4	0	8
	Libya	7	0	0	0	0	21
	Madagascar	3	1	1	1	0	6
	Malawi	9	6	6	6	0	9
	Mali	18	7	3	2	0	42
	Mauritania	9	5	4	4	0	14
	Mauritius	3	2	2	1	0	4
	Morocco	4	2	2	2	0	6
	Mozambique	12	7	4	1	0	24
	Namibia	6	4	1	0	0	13
	Niger	4	3	1	1	0	7
	Nigeria	15	12	11	9	0	13
	Rwanda	10	8	4	3	0	15
	Sao Tome and Principe	5	2	1	0	0	12
	Senegal	14	4	4	1	0	33
	Seychelles	3	3	3	1	0	2
	Sierra Leone	17	12	6	2	0	31
	South Africa	5	4	3	2	0	6
	South Sudan	4	1	0	0	0	11
	Sudan	24	22	21	6	0	23

	Swaziland	21	12	10	2	0	39
	Tanzania, United Republic of	27	24	23	23	2	5
	Togo	5	4	4	3	0	4
	Tunisia	5	5	5	4	1	-2
	Uganda	14	13	5	4	0	20
	Zambia	18	13	10	10	0	21
	Zimbabwe	12	9	5	3	1	16
Sub-Total		553	377	298	212	19	715
II	Afghanistan	5	0	0	0	0	15
	Bahrain	5	2	2	0	0	11
	Bangladesh	3	2	1	1	0	5
	Bhutan	5	3	1	1	0	10
	China	2	2	1	1	1	-1
	Hong Kong	1	0	0	0	0	3
	Iran, Islamic Republic of	1	0	0	0	0	3
	Iraq	47	47	46	46	0	2
	Kazakhstan	9	7	7	6	0	7
	Kyrgyzstan	3	3	3	2	0	1
	Lao People's Democratic Republic	5	4	4	4	0	3
	Maldives	16	15	13	10	6	-8
	Mongolia	6	2	0	0	0	16
	Myanmar	14	12	9	8	0	13
	Nepal	1	1	0	0	0	2
	Oman	2	0	0	0	0	6
	Pakistan	3	1	1	0	0	7
	Sri Lanka	16	10	8	10	0	20
	Tajikistan	26	13	13	13	0	39
	Thailand	5	2	2	1	0	10
	Turkmenistan	8	8	0	0	0	16
	Uzbekistan	5	5	5	1	0	4
	Viet Nam	2	1	1	1	0	3
	Yemen	2	0	0	0	0	6
Sub-Total		192	140	117	105	7	193
III	Argentina	14	9	6	3	0	24
	Bolivia, Plurinational State of	15	4	4	4	0	33
	Brazil	7	4	1	1	0	15
	Chile	10	9	8	7	0	6
	Colombia	13	5	4	3	1	24
	Ecuador	4	2	1	1	0	8
	Guyana	4	4	4	3	0	1
	Paraguay	14	7	8	6	0	21
	Peru	7	6	2	2	0	11
	Uruguay	14	6	6	5	0	25
	Venezuela, Bolivarian Republic of	1	1	1	1	0	0

Sub-Total		103	57	45	36	1	168
IV	Antigua and Barbuda	14	6	0	0	7	15
	Bahamas	10	0	0	0	0	30
	Barbados	3	1	1	1	0	6
	Belize	11	6	6	3	0	18
	Costa Rica	11	3	3	5	0	22
	Dominica	4	3	3	2	0	4
	Dominican Republic	9	1	0	0	0	26
	El Salvador	13	8	7	7	0	17
	Haiti	5	5	0	0	0	10
	Honduras	5	0	0	0	0	15
	Jamaica	16	7	0	3	0	38
	Mexico	10	4	4	4	0	18
	Panama	4	1	1	1	0	9
	Saint Lucia	8	5	6	4	0	9
	Trinidad and Tobago	11	10	9	8	0	6
Sub-Total		134	60	40	38	7	243
V	Brunei Darussalam	3	2	1	1	0	5
	Cook Islands	1	0	0	0	0	3
	Fiji	7	7	7	5	0	2
	Indonesia	2	2	2	1	0	1
	Kiribati	11	5	0	0	0	28
	Malaysia	4	4	4	4	0	0
	Micronesia, Federated States of	1	0	0	0	0	3
	Papua New Guinea	11	2	0	0	0	31
	Philippines	2	1	1	1	0	3
	Samoa	9	2	2	2	0	21
	Solomon Islands	5	3	2	2	0	8
	Tonga	1	0	0	0	0	3
	Vanuatu	14	13	8	6	0	15
Sub-Total		71	41	27	22	0	123
VI	Armenia	1	0	0	0	0	3
	Azerbaijan	2	1	1	0	0	4
	Belarus	2	2	1	1	0	2
	Bosnia and Herzegovina	1	1	1	1	0	0
	Bulgaria	2	1	1	1	0	3
	Croatia	1	1	1	1	0	0
	Georgia	1	1	1	1	0	0
	Jordan	2	2	2	2	0	0
	Lithuania	8	7	5	6	0	6
	Macedonia, The Former Yugoslav Republic of	1	1	1	1	0	0
	Malta	2	1	1	1	0	3
	Moldova, Republic of	2	1	1	0	0	4

	Poland	1	1	1	1	0	0
	Romania	2	2	2	2	0	0
	Russian Federation	1	0	0	0	0	3
	Serbia	4	2	2	2	0	6
	Slovakia	2	2	2	2	0	0
	Spain	1	0	0	0	0	3
	Syrian Arab Republic	2	0	0	0	0	6
	Turkey	1	0	0	0	0	3
Sub-Total		39	26	23	22	0	46
-	Anguilla	2	1	1	1	0	3
	Cayman Islands	4	1	0	0	0	11
	Grenada	1	1	0	1	0	1
	Palestinian Territory, Occupied	5	0	0	0	0	15
	Saint Kitts and Nevis	2	1	1	1	0	3
	Saint Vincent and the Grenadines	2	1	0	0	0	5
	Tuvalu	1	0	0	0	0	3
Sub-Total		17	5	2	3	0	41
TOTAL		1,109	706	552	438	34	1,529

ORGANISATION MÉTÉOROLOGIQUE MONDIAL

WORLD METEOROLOGICAL ORGANIZATION

TELEPHONE: INT'L + 41 (0) 22 730 81 11
FACSIMILÉ: INT'L + 41 (0) 22 730 81 81
TÉLÉGRAMMES: METEOMOND GENEVE
TÉLEX: 41 41 99 OMM CH

SECRÉTARIAT

7 BIS, AVENUE DE LA PAIX
CASE POSTALE NO. 2300
CH-1211 GENÈVE 2
GENÈVE - SUISSE

REPORT OF WMO FELLOWS ON THEIR COMPLETED STUDY PROGRAMME

Objective of the report

The main objective of this report is: (a) to evaluate the suitability of your study programme and the problems encountered, if any; and (b) to determine what action, if any, would be necessary to improve the various aspects of similar study programmes in the future.

One report should be completed for each country or institute visited.

You are requested to complete and return this report to the WMO Secretariat, immediately after completion of your studies, at the following address:

The Secretary-General
World Meteorological Organization
Case Postale 2300
CH-1211 Geneva 2
Switzerland

GENERAL INFORMATION

1. 1. Family name **First name** **Other names**

…….. ……... ……..

2. 2. Country of origin **3. 3. Date of birth (day/month/year)**

…… ……..

4. 4. **Gender** **Male** ☐ **Female** ☐

4. 5. **Contact details (Postal address, Email address, Telephone)**

Address: ……

……

……

Email address: ……..

5. 6. **Field(s) of study during fellowship / Title of training event**

……
……
……
……

6. 7. **Dates of the fellowship**

From: **To:**

…… ……..

7. 8. **Country of study** **(day/month/year)** **Institution** **(day/month/year)**

…… ……..

8. 9. **Qualifications obtained (if any)**

……
……
……

STUDY PROGRAMME

9. 10. **Do you feel that the study programme met the objectives as stated in your award documents?**

Not met	Slightly met	Somewhat met	Largely met	Fully met
☐	☐	☐	☐	☐

Please explain why you feel so:

.....
.....
.....
.....
.....
.....

.....
.....

10. 11. Do you think that your studies have prepared you to contribute more effectively to the activities of the meteorological / hydrometeorological / hydrological service of your country?

Not at all	Slightly yes	Somewhat yes	Largely yes	Fully yes
☐	☐	☐	☐	☐

Please explain why you think so:

.....
.....
.....
.....
.....
.....

.....
.....

11. 12. Do you consider that the duration of your fellowship was adequate?

Yes ☐ **No** ☐

If No, what would you consider to be a suitable duration?

Months	Years

12. 13. Do you feel that your studies were relevant to the work you will be doing on return to your home country?

Not relevant	Slightly relevant	Somewhat relevant	Largely relevant	Fully relevant
☐	☐	☐	☐	☐

Please explain why you think so:

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

NON ACADEMIC ASPECTS OF FELLOWSHIP

13. 14. Did you receive your travel and other instructions in time, and were your travel arrangements satisfactory?

Yes ☐ **No** ☐

If No, explain:

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

15. Did you encounter any difficulties in receiving stipend payments and your other entitlements?

Yes ☐ **No** ☐

If Yes, explain:

.....
.....
.....
.....
.....
.....
.....
.....

16. Do you have any suggestions for improving the social life of fellows in the country(ies) in which you studied?

Yes ☐ **No** ☐

If Yes, explain:

……
……
……
……
……
……
……
……

17. Please give a brief comment, if necessary, on any issue of importance not covered in this questionnaire, such as board and lodging; relationship with colleagues; academic and non-academic staff of your training institution. Do you have any recommendations to make?

……
……
……
……
……
……
……
……
……

Note: If you have prepared a report on your programme for your Government, you are invited to submit a copy of it to WMO.

Date: …… **Signature:** ……

Annex VII (b): **Report On Post- Fellowship Activities Of WMO Fellows (3 Months)**

ORGANISATION MÉTÉOROLOGIQUE MONDIALE **WORLD METEOROLOGICAL ORGANIZATION**

Téléphone: **Int'l + 41 (0) 22 730 81 11**
Facsimilé: **Int'l + 41 (0) 22 730 81 81**
Télégrammes: **METEOMOND GENEVE**
Télex: **41 41 99 OMM CH**

SECRÉTARIAT
GENÈVE - SUISSE

7 bis, avenue de la Paix
Case postale No. 2300
CH-1211 Genève 2

REPORT ON POST- FELLOWSHIP ACTIVITIES OF WMO FELLOWS

(3 months)

Objective of the report

The main objective of this report is: (a) to confirm the return of a WMO fellow to his/her country after completion of his/her studies; and (b) to monitor the progress being made in his/her career.

One report should be completed for each fellow returning home and sent to the WMO Secretariat not later than 3 months after completion of studies, at the following address:

The Secretary-General
World Meteorological Organization
Case Postale 2300
CH-1211 Geneva 2
Switzerland

GENERAL INFORMATION

1. Family name **First name** **Other names**

…….. …….. ……

2. Country of origin **3. Date of birth (day/month/year)**

…… ……

4. Gender **Male** ☐ **Female** ☐

5. Field(s) of study during fellowship / Title of training event

……
……
……
……

6. Dates of the fellowship

From: ……. **(day/month/year)** **To:** ……..… **(day/month/year)**

7. Country of study **Institution**

…… ……..…

8. Qualifications obtained (if any)

……
……
……

9. Date of return to home country ……
(day/month/year)

10. Date of resumption/commencement of work ……
(day/month/year)

CAREER PROGRESSION

11. Post held before fellowship

……
……

12. Current post held

……
……
……
……
……
……

Date: ……. **(day/month/year)** **Signature:** ……
Permanent Representative with WMO

Annex VII (c): **Report On Post- Fellowship Activities Of WMO Fellows (18 - 24 Months)**

ORGANISATION MÉTÉOROLOGIQUE MONDIALE **WORLD METEOROLOGICAL ORGANIZATION**

Téléphone: Int'l + 41 (0) 22 730 81 11 **7 bis, avenue de la Paix**
Facsimilé: Int'l + 41 (0) 22 730 81 81 **Case postale No. 2300**
Télégrammes: METEOMOND GENEVE **SECRÉTARIAT** **CH-1211 Genève 2**
Télex: 41 41 99 OMM CH **GENÈVE - SUISSE**

REPORT ON POST-FELLOWSHIP ACTIVITIES OF WMO FELLOWS (18 – 24 months)

Objective of the report

The main objective of this report is:

(a) To evaluate the impact of the former fellow, as well as the training programme on the NMHS.

(b) To determine what action, if any, would be necessary to further improve the fellowship deliveries and various aspects of the WMO fellowships programmes.

One report should be completed by the PR for each former follow, after 18 to 24 months of completion of studies and assigned to the relevant department where the acquired training would be effectively used for the advancement of the National Service.

Please complete and return this report to the WMO Secretariat, at the following address:

The Secretary-General
World Meteorological Organization
Case Postale 2300
CH-1211 Geneva 2
Switzerland

PART. A

GENERAL INFORMATION TO BE COMPLETED BY THE FORMER FELLOW

1. Family name: First name:

2. Country of origin:

3. Date of birth:

(day/month/year)

4. Gender Male ☐ Female ☐

5. Dates of the fellowship: **From:** **To:**

(day/month/year) **(day/month/year)**

6. Country of study: Institution:

7. Field of study during fellowship Title of training event

8. Qualifications obtained (if any)

9. Honours and Awards received during the study period

YES ☐ NO ☐

If YES, please specify : .....

10. Post held on commencement of fellowship

.....

11. Job description of post held on commencement of fellowship

.....

.....

12. Current post held

The primary focus of your current job is

- ☐ Policy Matters
- ☐ Management
- ☐ Operational Services
- ☐ Information/Knowledge Dissemination,
- ☐ Others (Please specify)

  ……..

13. Job description of current post held

.....

.....

14. After completion of your fellowship, have you pursued another degree training programme?

YES ☐ NO ☐ If YES, please specify the degree and field of study

Degree: …… Field of Study: ……..

15. Please specify any diploma and training programmes attended

a. Diploma(s) .....

.....

Place and date: ……

b. Training Programme(s)

.....

.....

Place and date: ……

_____

_____

Date (day/month/year) and Place

Signature of former fellow

PART. B

CAREER PROGRESSION TO BE COMPLETED BY PERMANENT REPRESENTATIVE

1. Benefits of the Qualification Obtained to the NMHS/Country

Please tick relevant box

a. Extent to which he/she gained knowledge that are useful in the job

Not at all	Slightly so	Somewhat so	Largely so	Fully so
☐	☐	☐	☐	☐

b. Improvement in his/her confidence about performing the work

Not at all	Slightly so	Somewhat so	Largely so	Fully so
☐	☐	☐	☐	☐

c. Higher progression in the same job

Not at all	Slightly so	Somewhat so	Largely so	Fully so
☐	☐	☐	☐	☐

d. Higher mobility across job

Not at all	Slightly so	Somewhat so	Largely so	Fully so
☐	☐	☐	☐	☐

e. Higher income in the same/across job

Not at all	Slightly so	Somewhat so	Largely so	Fully so
☐	☐	☐	☐	☐

f. Recognition for his/her enhanced skills in the NMHS/Country

Not at all	Slightly so	Somewhat so	Largely so	Fully so
☐	☐	☐	☐	☐

g. Relevance of the enhanced skills to the country's need

Not at all	Slightly so	Somewhat so	Largely so	Fully so
☐	☐	☐	☐	☐

2. What is the impact of the fellowship in the current post?

Not satisfactory	Slightly satisfactory	Somewhat satisfactory	Largely satisfactory	Fully satisfactory
☐	☐	☐	☐	☐

3. Please provide details regarding the impact

_____/_____/_____
_____

day month year Signature of Permanent Representative with WMO

Date

Annex VIII: List of developing countries invited to complete the electronic questionnaire

RA I

1. Benin
2. Burkina Faso
3. Cote d'Ivoire
4. Ethiopia
5. Gambia
6. Ghana
7. Guinea
8. Kenya
9. Lesotho
10. Malawi
11. Mali
12. Mozambique
13. Namibia
14. Nigeria
15. Rwanda
16. Senegal
17. Swaziland
18. Tanzania
19. Uganda
20. Zambia

RA II

1. Hong Kong China
2. Maldives
3. Myanmar
4. Pakistan
5. Sri Lanka
6. Tajikistan
7. Uzbekistan

RA III

1. **A**rgentina
2. Brazil
3. Costa Rica
4. Guyana
5. Paraguay

RA IV

1. Antigua and Barbuda
2. Belize
3. Jamaica
4. Saint Lucia
5. Trinidad and Tobago

RA V

1. Fiji
2. Indonesia
3. Philippines
4. Vanuatu

RA VI

1. Lithuania
2. Macedonia
3. Moldova
4. Armenia
5. Belarus

List of mainly developed countries invited to complete the short Questionnaire

1. Australia
2. Brazil
3. Canada
4. China
5. France
6. India
7. Italy
8. Norway
9. Russia
10. S. Korea
11. Spain
12. Turkey
13. U.K
14. USA

Annex IX (a): List of Workshops, Seminars, Group Training and Familiarization visits (2005 - 2015)

EventTitle	Location	Date
Training Seminar on Curriculum Development in Aeronautical Meteorology	Exeter, UK	11-Mar-05
Training Course on Monsoon Meteorology	Nanjing, China	20-May-05
Regional Training Seminar for National Instructors of RA II and RA V	Kuala Lumpur, Malaysia	27-May-05
Regional Training Seminar for National Instructors of RA II and RA V	Kuala Lumpur, Malaysia	27-May-05
Training Course on Use and Interpretation of city-specific Numerical Weather Prediction Products	Hong Kong, China	03-Nov-05
Training Course on Design and Operation of Meteorological Warning Systems	Hong Kong, China	09-Dec-05
Training Course on Aeronautical Meteorology	Beijing, China §	20-Dec-05
International Training Course on Climate Change and Prediction	Nanjing, China §	30-Jun-06
Training Course on Satellite Meteorology	Beijing, China §	08-Sep-06
Statistics in Applied Climatology (SIAC) Course, IMTR, Nairobi, Kenya	Nairobi, Kenya §	15-Sep-06
The Tenth WMO Symposium on Education and Training, "Meteorological and Hydrological Education and Training for Disaster Prevention and Mitigation"	Nanjing, China §	22-Sep-06
Training Course on Nowcasting of Serious Convection	Beijing, China §	21-Oct-06
Training Course on Agrometeorological Information Services	Beijing, China §	03-Nov-06
Regional Training Seminar for National Trainers of RA I	Tripoli, Libya	15-Mar-07
Training Course on Severe Convective Storm Nowcasting	Beijing, China §	12-Apr-07
RA I Workshop on Human Resources Dvelopment Planning	Cairo §	18-Apr-07
International Training Course on Satellite and Radar Meteorology	Nanjing, China §	27-May-07
International Training Course on "Coastal Zone Natural Disaster Prevention & Warning", Beijing, China	BEIJING, CHINA §	08-Aug-07
International Training Course on "Agrometeorological Services for sustainable Agriculture"	Beijing, China §	07-Sep-07
International Training Course on "Agrometeorological Services for Sustainable Agriculture"	Beijing, China §	07-Sep-07
International Training Course on Weather Modification, WMO RTC, Nanjing, China	NANJING, China §	11-Nov-07
Training Course on Automatic Weather Station Network	Hong-Kong,China	30-Nov-07
Regional Training Seminar for National Trainers of RA III/IV	Caracas, Venezuela §	14-Mar-08
International Training Seminar on "The Use of New Teaching Technologies in the Training and Retraining of Hydrometeorological Specialits-2	St. Petersburg §	16-May-08
International Training Course on Preventing and Mitigating Meteorological Natural Disasters by Means of Remote Sensing	Alanya §	06-Jun-08
International Training Course "Meteorological Hazards on Aviation; Forecasting and Effects on Flight Safety""	Alanya, Turkey §	13-Jun-08
International Training Course on Agrometeorology	Nanjing, China §	17-Jun-08
Statistics in Applied Climatology (SIAC) Course§	Nairobi, Kenya §	12-Sep-08
4th International Training Course on "Meteorological Telecommunication and TURK-METCAP Software"	Alanya, Turkey §	10-Oct-08
International Training Course on "Weather Radars"	Istanbul, Turkey §	17-Oct-08

International Training Course on "Satellite Meteorology"	Beijing, China §	17-Oct-08
International Training Course on "Upper Air Observing System"	Alanya, Turkey §	24-Oct-08
Training Seminar on the Management of Meteorological Training Instittutions	Langen, Germany	24-Oct-08
International Training Course on Satellite & Radar Meteorology	Nanjing, China §	29-Oct-08
International Training Course on "Weather Modification"	Beijing, China §	07-Nov-08
International Training Course on "Automated Weather Observing Systems"	Alanya, Turkey §	10-Nov-08
International Training Course on Climate Change and Desertification Processes - Assessment and Monitoring	Tel Aviv, Israel §	26-Dec-08
Regional Training for National Trainers of RA II and RA V on "National Training, Coaching and Mentoring Practices	Seoul, Korea	01-May-09
International Training Course on "Climate Indices"	Alanya, Turkey §	29-May-09
The International Training Course on "Automated Weather Observing Systems"	Alanya, Turkey §	12-Jun-09
International Training Course on "Weather Modification"	Beijing, China §	17-Jun-09
International Training Course on "Multi-hazard Early Warning"	Nanjing §	26-Jun-09
2nd International Training Course on Climate Change and Desertification Processess: Assessment and Monitoring	Tel Aviv, Israel §	10-Jul-09
Training Workshop on Curriculum Development in Aeronautical Meteorology	RTC-Alanya §	09-Oct-09
WMO Symposium on Meteorological Service in Support of Decision-making and Field Study	Beijing, China §	22-Oct-09
International Training Course on "Agrometeorology"	Alanya, Turkey §	23-Oct-09
International Training Course on "Basic Operation of Weather Radar and Use of Radar Products"	Hong Kong, China	04-Dec-09
International Training Course on "Agrometeorology"	Nanjing, China §	04-Dec-09
International Training Course on "Upper-Air-Observing Systems"	Istanbul, Turkey §	16-Apr-10
International Training Course on "Weather Radars"	Istanbul, Turkey §	14-May-10
Study Tour and WMO Symposium on Meteorological Service Delivery and Disaster Risk Reduction	Beijing, Nanjing, Shanghai, Ch	15-May-10
International Training Course on "Multi-hazard Early Warning"	Nanjing, China §	28-May-10
Regional Trainng Seminar for National Trainers of RA VI	Sibiu, Romania	28-May-10
International Training Course on "Climate Applications"	Antalya, Turkey §	11-Jun-10
Advanced International Workshop on "Operationa of Meteorological and Agrometeorological Station Networks - Convention and Automatic	Bet Dagan, Israel §	15-Jun-10
International Training Course on "Satellite Meteorology"	Beijing, China §	02-Jul-10
International training course on "Agricutural Meteorology"	Beijing, China §	27-Aug-10
International Training Course on Numerical Weather Prediction	Nanjing, China §	24-Sep-10
5th International training course on "Meteorological telecommunication and METCAP software"	Alanya, Turkey §	30-Sep-10
Workshop on Human Resources Development for NMHSs in South American countries and SIDS	Lima, Peru	08-Oct-10
Education and Training Symposium SYMET-XI	Bogor, Indonesia	29-Oct-10
International Training Seminar on South-South Cooperation on Weather and Climate	Nanjing, China §	12-Nov-10
Advanced workshop on "the application of meteorological to renewable energy and	Bet Dagan, Israel §	29-

green building"		Nov-10
International Training Course on "Automated Weather Station Network"	Hong Kong, China	03-Dec-10
International Training Seminar on Methods for Short-term Climate Prediction	Nanjing, China §	08-Apr-11
International Training Course on "Satellite Meteorology"	Nanjing, China §	29-Apr-11
Workshop on HRD for NMHSs in South and East African countries	Pretoria, South Africa	05-Jul-11
Regional Training Seminar for National Instructors of RA II and RA V	Bogor, Indonesia	06-Mar-13
International Training Course on Weather Radar Operation and Data Utilization	Seoul; Rep. of Korea	16-Mar-13
International Training Serminar on Methods for Short-Term Climate Prediction	Beijing and Nanjing §	10-Apr-13
International Training Course on Aeronautical Meteorology Services	Beijing, China §	19-Apr-13
International Trainng Course on Nowcasting	Beijing, China §	17-May-13
Advanced Workshop on "Climate change and agriculture"	Shefayim, Israel §	07-Jun-13
twelfth WMO Symposium on Education and Training (SYMET-XII)	Toulouse, France	06-Sep-13
International Training Course on Use of Meteorological Instruments	Nanjing, China	25-Sep-13
International Training Course, Basics of Calibration	Ankara, Turkey	04-Oct-13
Training on “The Use of New Educational Technologies for Training and Retraining of Specialists in Hydrometeorology”	St. Petersburg, Russia	18-Oct-13
International Training Course on Producing High Resolution Climate Information: Scientific Basis and Application	Seoul, Korea.	24-Oct-13
International Training Course : "Regional Climate Prediction and Drought Monitoring"	Beijing, China	25-Oct-13
International Training Course on Tropical Cyclone Forecast	Nanjiing, China	25-Oct-13
International Training Workshop on "Aviation Meteorology for Forecasters"	Doha, Qatar	07-Nov-13
International Training Course on Agrometeorology	Nanjing, China	08-Nov-13
International Training Course on Agrometeorology	Nanjing, China	08-Nov-13
Advanced workshp on Hydrometeorology: Impact of Climate Variability and Change on Water Resources	Shefayim, Israel	12-Dec-13
International Training Course on "Effective Media Communication"	Hong Kong, China	13-Dec-13
International Training Course on Weather Radar Operation	Seoul, Rep. of Korea	15-Mar-14
International Training Course on Short-term Climate Prediction Methods	Beijing, China	25-Apr-14
WMO online Training Seminar for Natinal Instructors of RA I	On line	16-May-14
International Training Course on Thunderstorms and Severe Convection Nowcasting, from 13 to 23 May 2014, Beijing, China	Beijing, China	23-May-14
International Training Course on Tropical Cyclone Forecast	Nanjing, China	26-May-14
International Training Course on WMO Information System (WIS) and Tehran GISC	Tehran, Iran	08-Jun-14
International training course on Climate change impacts on agriculture systems in Africa	Florence, Italy	13-Jun-14
International Training Course on Use of Meteorological Instruments	Nanjing, China	16-Jun-14
Advanced Workshop on Climate Change and Agriculture	Shefayim, Israel	19-Jun-14
International Training Course on Aeronautical Meteorology Services	Beijing, China	27-Jun-14

International Training Course on Weather Modification	Beijing, China	29-Aug-14
International training course on "Seasonal forecasts for agriculture in the Mediterranean@	Florence, Italy	26-Sep-14
International Training Seminar on Meteorological Disasters Management for Officials from Developping Countries	Beijing, China	26-Sep-14
International Training Coursr on Agrometeorology	Nanjing, China	30-Sep-14
International Training Course on Climate Monitoring, Prediction and Application	Beijing, China	31-Oct-14
Course Development Worshop for Regional Training Institutions in WMO Regional Association I	Casablanca, Morocco	07-Nov-14
International Training Workshop on Data Assimilation and Mesoscale Ensemble Forecasting	Hong Kong, China	05-Dec-14
Workshop for Directors of WMO Regional Training Centers	LANGEN, Germany	20-Mar-15
Advanced Workshop on Climate Change and Agriculture	Bet Dagan, Israel	14-May-15
WMO Online Training for Trainers of RA VI	Online	31-May-15
Online training course for trainers of RA VI	Online	31-May-15

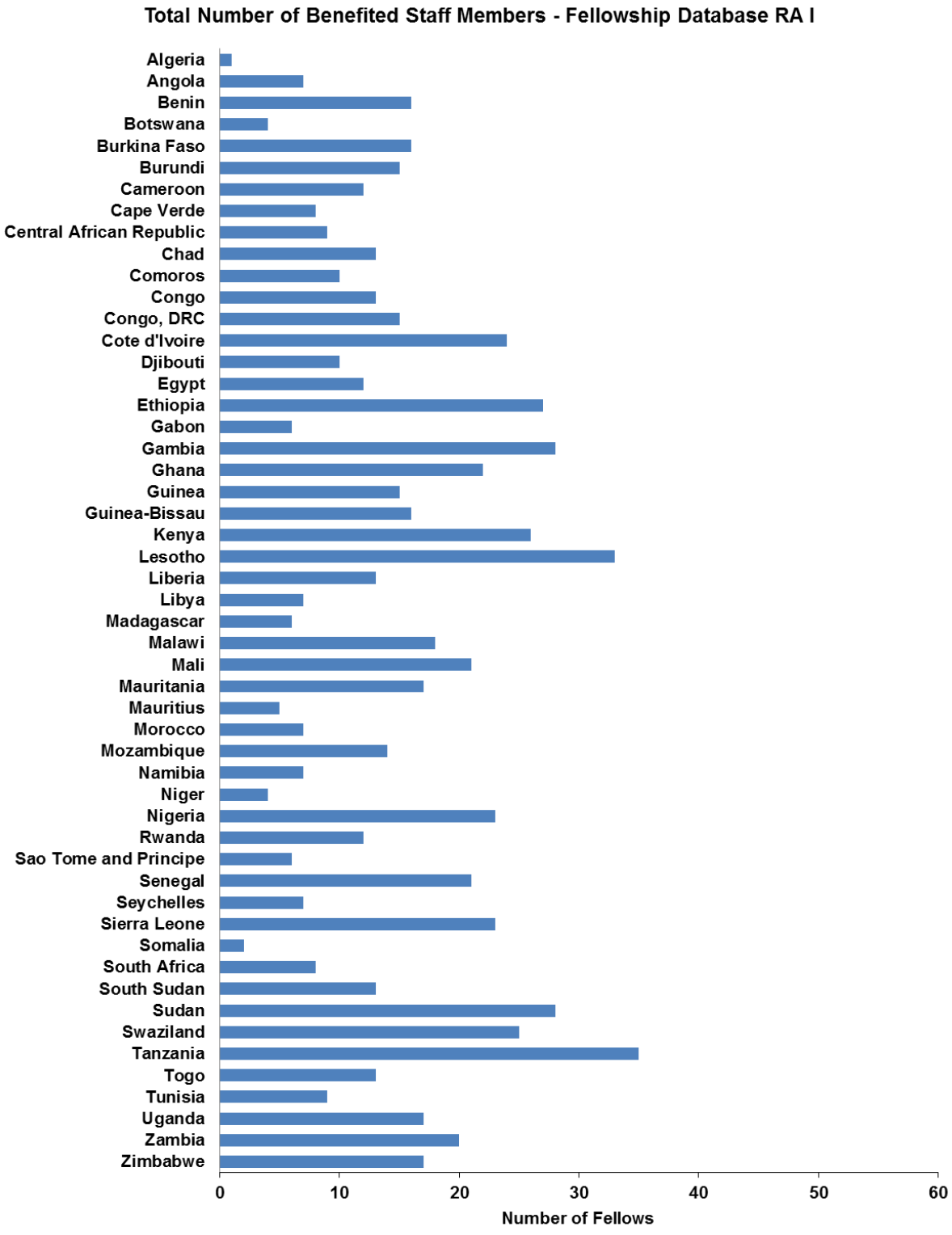
Annex IX (b): List of Familiarization Visits

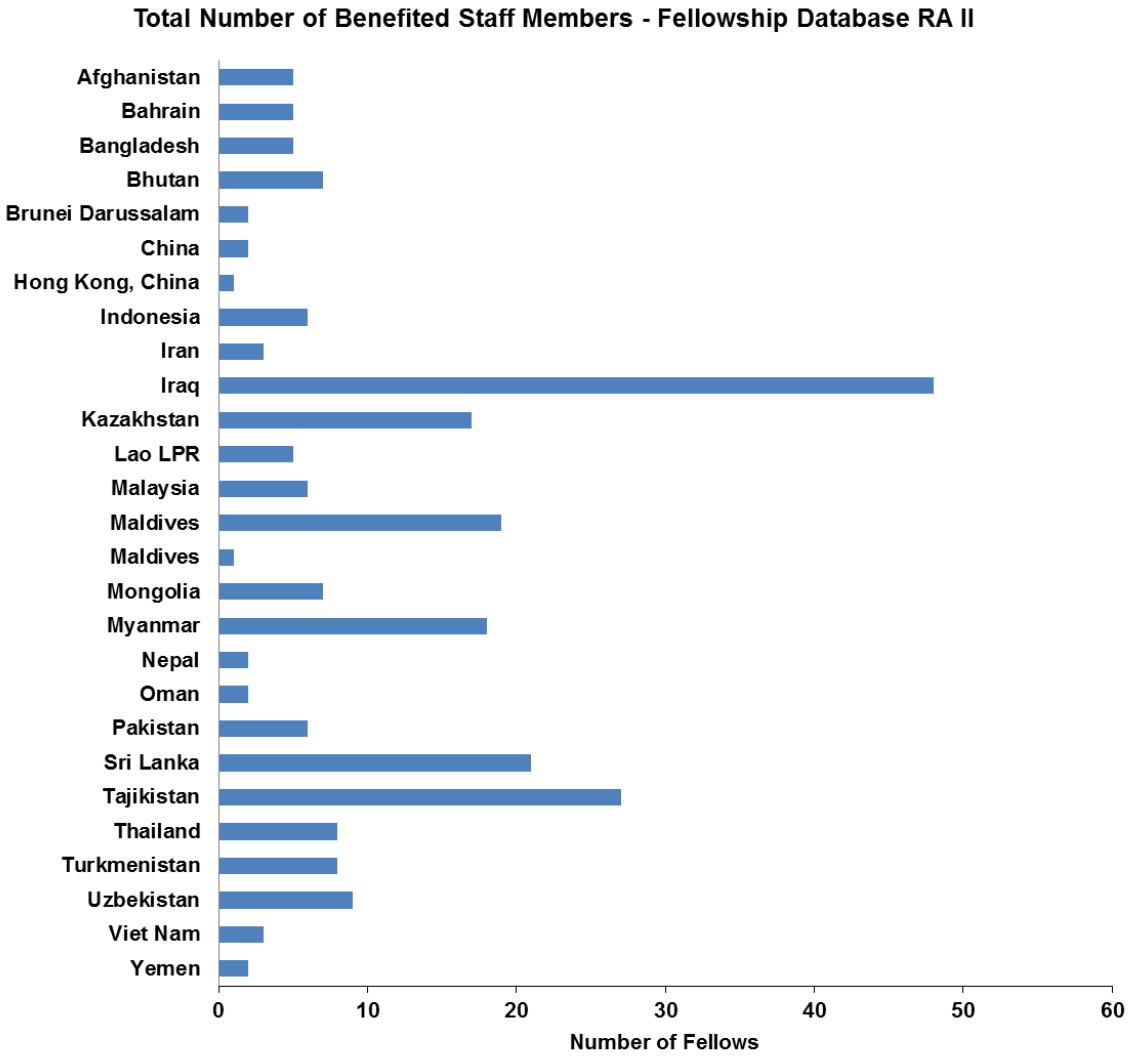
Home Country	**Name of PR**	**Host Country**	**Place of Visit**	**Date**
Morocco	Abdallah	Switzerland	WMO Secretariat	07-Sep-17
Uganda	LUBOYERA, Festus	Switzerland	WMO Secretariat	07-Oct-16
Senegal	NDAO, Magueye Marame	Switzerland	WMO Secretariat	07-Sep-16
Tajikistan	RASULZODA, Homidjon	Switzerland	WMO Secretariat	16-Sep-16
Congo	KANGA, Alphonse	Switzerland	WMO Secretariat	07-Sep-16
Somalia	SHURIE, Omar Haji Mohamed	Switzerland	WMO Secretariat, UK Met Office, Kenya Met Office	19-Jun-16
Hungary	RADICS, Kornelia	Switzerland	WMO	09-Sep-16
Kenya	KONGOTI, James	Switzerland	UK Met Office, WMO Secretariat, SAfrican Weather Service	31-Aug-15
Mauritania	CHEIKH MOHAMED ELMAMY, Mohamed Batta	Switzerland	WMO Secretariat, Algeria	14-Sep-16
Philippines	MALANO, Vicente B.	Switzerland	WMO Secretariat	07-Dec-14
Serbia	NIKOLIC, Jugoslav	Switzerland	Meteorologist	03-Oct-14
South Sudan	AYOKER, Mojwok Ogawi Modo	Switzerland	WMO, Kenya	24-Mar-15
Kazakhstan	MENDIGARIN, Aibek	Switzerland	Switzerland, Spain	19-Nov-13
Ethiopia	TOLA, Fetene Teshome	Switzerland	Meteorologist	13-Sep-13
Niger	TRAORE, Abdoul-Karim	Switzerland	WMO Secretariat	22-Mar-13
Cote d'Ivoire	KONATE, Daouda	Switzerland	WMO Secretariat	22-Mar-13
Burkina Faso	GARANE, Ali Jacques	Switzerland	WMO Secretariat	22-Mar-13
Sri Lanka	SAMARASINGHE, G.B.	Switzerland	PR	03-

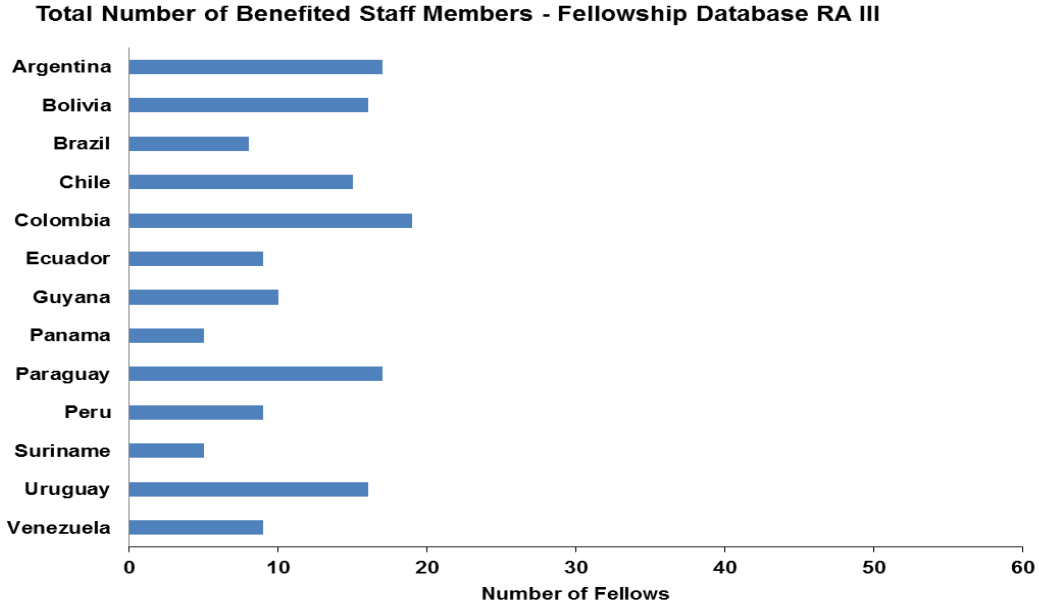
				Sep-09
Ghana	KOMLA, Stephen Y.	Switzerland	WMO, UK	07-Sep-13
Malawi	NKHOKWE, Jolamu L.	Switzerland	WMO, Kenya	07-Sep-13
Sudan	ABDALLA, Abdalla Khyar	Switzerland	WMO Secretariat, UK Met, Egypt NMS	18-Jun-13
Tanzania, United Republic of	KIJAZI, Agnes	Switzerland	WMO Secretariat, UK & S.Africa Met	14-Sep-13
Sierra Leone	BOCKARI, Alpha	Switzerland	WMO, UK, Nigeria	20-Sep-13
Djibouti	SAID, Osman Saad	Switzerland	WMO, Météo-France, S. Africa Met	14-Sep-13
Tunisia	NMIRI, Abdel W.	Switzerland	WMO, UK, SA Met Service	12-Sep-13
Benin	NAKPON, Kokou Marcellin	Switzerland	Switzerland, Morocco	28-Apr-17
Benin	KASSIN, Martin	Switzerland	France, Kenya, Switzerland	22-Mar-13
Congo, The Democratic Republic of the	MPUNDU ELONGA, Jean-Pierre	Switzerland	WMO Secretariat, France, Niger	14-Mar-12
Serbia	DIMITRIEV, Vancho	Switzerland	WMO Headquarters	07-Dec-11
Kyrgyzstan	ITIBAEV, Zarylbek	Switzerland	Roshydromet, Meteo-France & WMO HQs.,	08-Jun-10
Cape Verde	ARAUJO DE BRITO, Ester	Switzerland	WMO, Spain, Nigeria	13-Oct-10
Ghana	TANU, Michael	Switzerland	Hydrometeorological Services	03-Dec-09
Rwanda	NTAGANDA SEMAFARA, John	Switzerland	WMO Secretariat, UK Met, Kenya Met	09-Nov-11
Malta	GALDIES, Charles	Switzerland	Secretariat	18-Feb-08
Gabon	ONDO ELLA, Martin	Switzerland	WMO, Meteo-France, Senegal Met Service	16-Jul-08
Belarus	GERMENCHUK, Maria	Switzerland	NMHS	11-Feb-09
South Africa	MAKULENI, Linda	Switzerland	WMO Secretariat, UK, India	08-Nov-07
Serbia	KOTEV, Gjorgji	Switzerland	WMO Headquarters	25-Jan-07
Cameroon	NGUILAMBOUHE BONGLA, Andre	Switzerland	WMO Secretariat	12-Sep-12
Poland	OSTOJSKI, Mieczyslaw S.	Switzerland	Geneva	30-Nov-06
Armenia	VARDANYAN, Levon	Switzerland	WMO Geneva	20-Oct-06
Gabon	ELLA ASSEKO, Lambert	Switzerland	WMO Secretariat	12-Oct-06
Ecuador	ANDRADE CHAVEZ, Laureano	Switzerland	WMO	03-Apr-06
Senegal	KAMARA, Mamina	Switzerland	Switzerland	10-Oct-14
Mozambique	BENESSENE, Moises Vicente	Switzerland	WMO Secretariat, Portugal, Tanzania	24-Sep-08
Romania	POIANA, Ion	Switzerland	WMO Secretariat	07-May-05
Guinea-Bissau	ALVARENGA, Manuel Carvalho	Switzerland	WMO Secretariat, M,t,o-France, NMS Senegal	27-Apr-05
Lithuania	AUGULIENE, Vida	Switzerland	Switzerland	28-Sep-07
Guinea-Bissau	SAMBU, Fernando Baial	Switzerland	Geneva, Madrid, Dakar	23-May-08
Ethiopia	ASSEFA, Kidane	Switzerland	WMO, UK Met, Kenya Met	29-

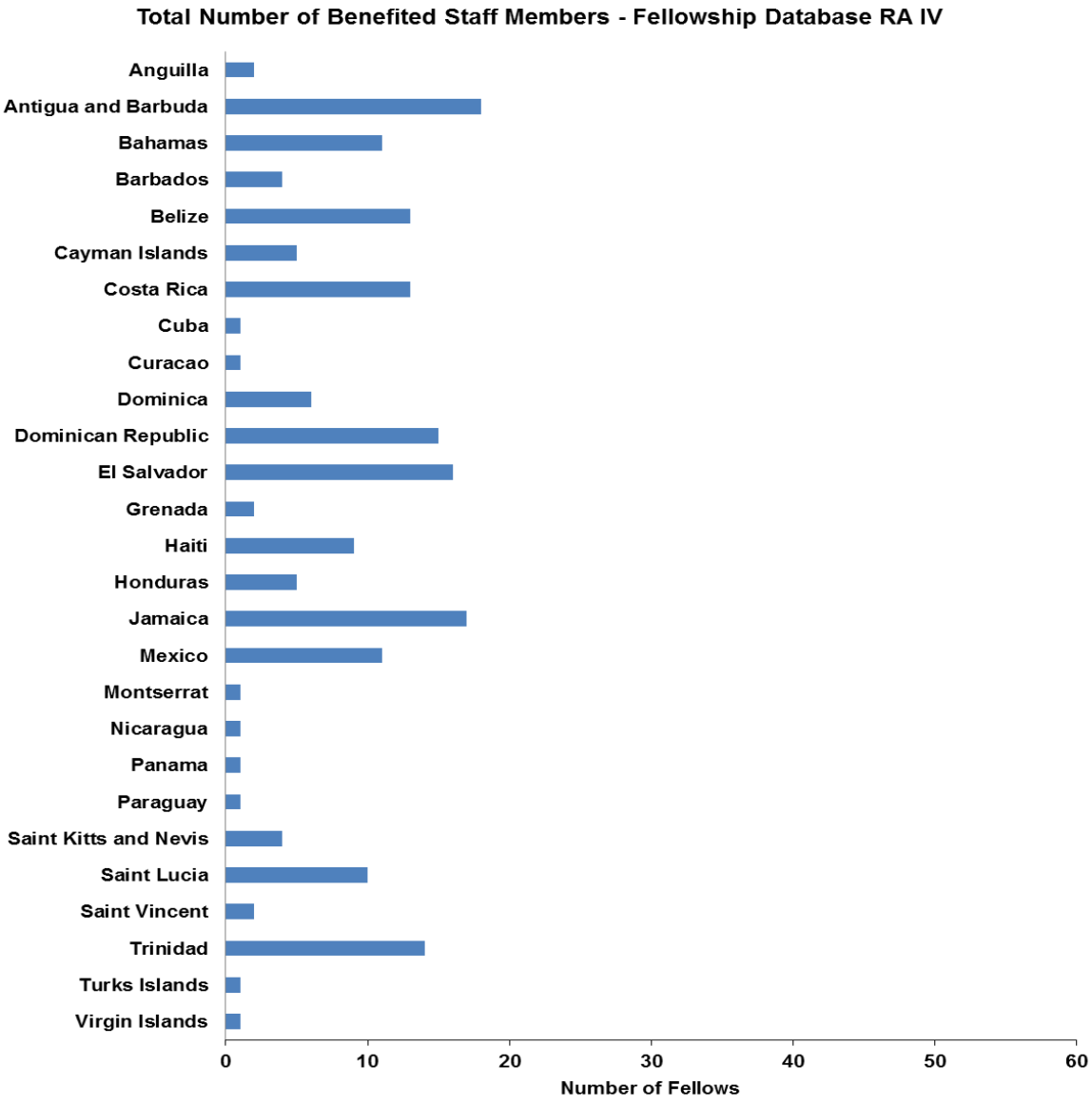
				Nov-07
Chad	MBAITOUBAM, Elie	Switzerland	Switzerland	10-Oct-14
Paraguay	GONZALEZ VERA, Domingo German	Switzerland	WMO Secretariat,	16-Feb-08
Senegal	NDIAYE, Mactar	Switzerland	WMO Secretariat, M,t,o-France, Tunisia Met	18-Feb-06
Liberia	GAR-GLAHN, Arthur	Switzerland	WMO, UK, NIMET	18-Jun-13
Zambia	MUCHINDA, Maurice	Switzerland	WMO, Met Office and Tanzania Meteorological Agency	16-Aug-05
Tunisia	RAJHI, MONCEF	Switzerland	National Institute of Meteorology	20-Aug-05
Sao Tome and Principe	VAZ LIMA, João Vicente Domingos	Switzerland	WMO Secretariat, NMSs Portugal and Senegal	21-Oct-09
Ethiopia	SHANKO, Dula	Switzerland	WMO Secretariat	26-Jul-12
Tajikistan	SAFAROV, Mahmad	Switzerland	WMO, Russia or China	06-Sep-13
Guyana	SEULALL, Bhaleka Devi	Switzerland	WMO Headquarters	25-Oct-08
Mauritania	OULD MOHAMED LAGHDAF, Mohamed Bechir	Switzerland	WMO Secretariat	30-Mar-07
Central African Republic	TETEYA, Joël-Urbain	Switzerland	WMO Secretariat	03-Feb-10
Gambia	TOURAY, Lamin Mai	Switzerland	WMO Secretariat, UK Met Office	07-Sep-16
Guinea-Bissau	TCHEDNA, Joao Lona	Switzerland	Switzerland, Portugal and Senegal	25-Jan-10
Zambia	NKOMOKI, Jacob	Switzerland	WMO, UK, Tanzania or Kenya	05-Jul-10
Uganda	NKALUBO, Michael S.Z.	Switzerland	WMO Secretariat	09-Nov-11
Georgia	CHITANAVA, Ramaz-Beglarovic	Switzerland	WMO Headquarters	01-Dec-06
Croatia	CACIC, Ivan	Switzerland	World Meteorological Organization (WMO)	15-Jun-05
Slovakia	RONCAK, Peter	Switzerland	WMO Headquarters, NMI Spain	28-Jun-06
Seychelles	AMELIE, Vincent	Switzerland	WMO Secretariat	07-Sep-16
Cameroon	ONDOUA, Etienne G.	Switzerland	WMO Secretariat	13-Sep-06
Cameroon	SAAH, Michel Legrand	Switzerland	WMO Secretariat, UK, Senegal	01-Jan-09
Comoros	POUNDJA, Mahamoud Ali Bay	Switzerland	WMO, France and Tanzania	29-Sep-11
Gambia	GOMEZ, Bernard Edward	Switzerland	WMO Secretariat, UK, Nigeria Met	02-Aug-08

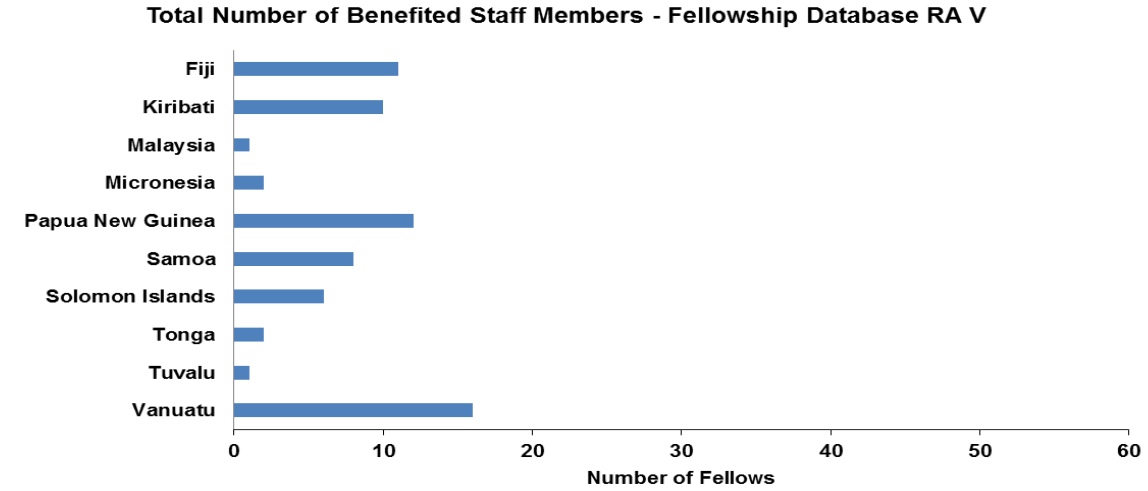
Annex X: Number of Benefited Staff Members from all WMO Regions

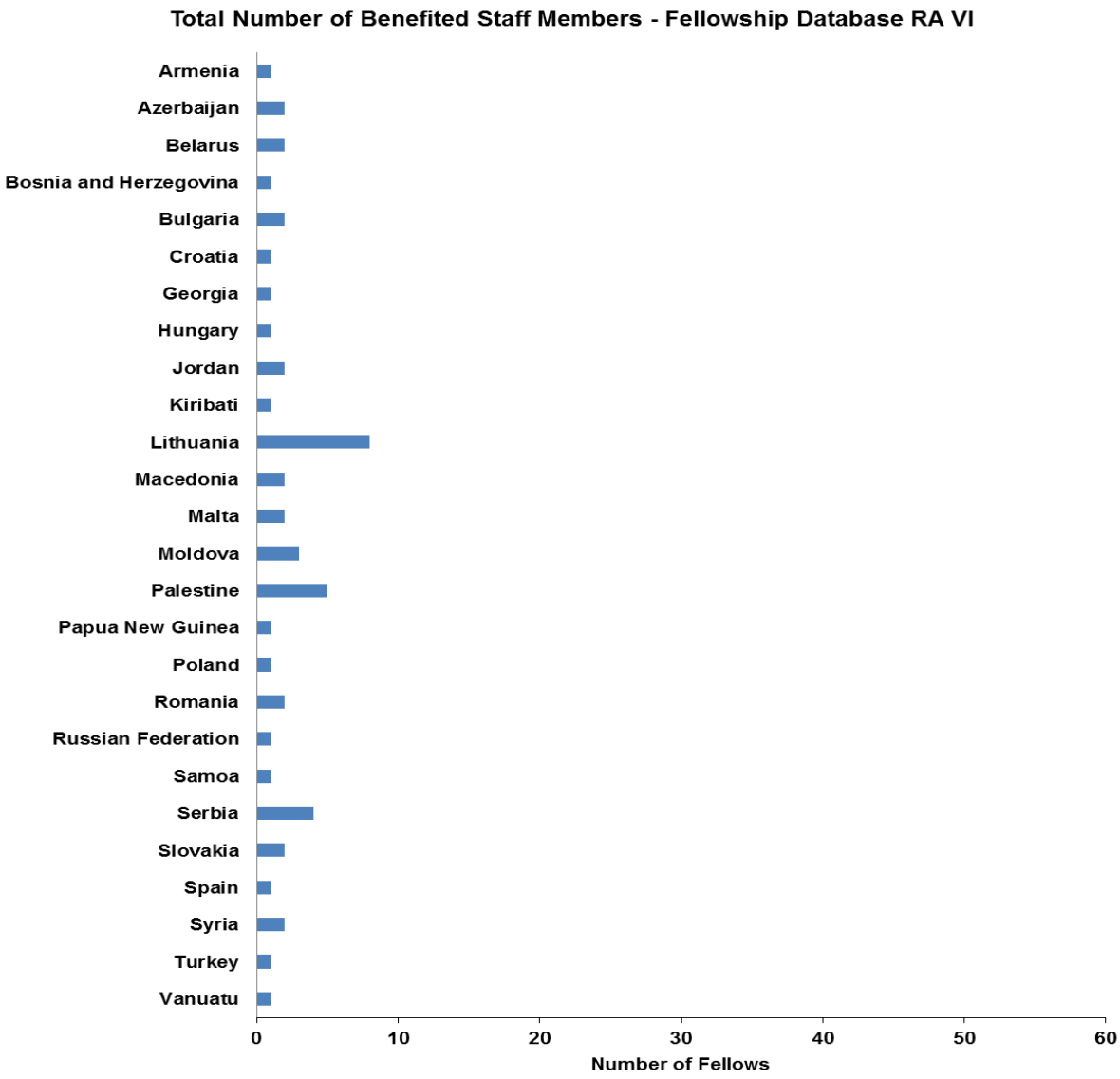



Total Number of Benefited Staff Members - Fellowship Database RA II
Afghanistan
Bahrain
Bangladesh
Bhutan
Brunei Darussalam
China
Hong Kong, China
Indonesia
Iran
Iraq
Kazakhstan
Lao LPR
Malaysia
Maldives
Maldives
Mongolia
Myanmar
Nepal
Oman
Pakistan
Sri Lanka
Tajikistan
Thailand
Turkmenistan
Uzbekistan
Viet Nam
Yemen
0
10
20
30
40
50
60
Number of Fellows


Total Number of Benefited Staff Members - Fellowship Database RA III
Argentina
Bolivia
Brazil
Chile
Colombia
Ecuador
Guyana
Panama
Paraguay
Peru
Suriname
Uruguay
Venezuela
0
10
20
30
40
50
60
Number of Fellows


Total Number of Benefited Staff Members - Fellowship Database RA IV
Anguilla
Antigua and Barbuda
Bahamas
Barbados
Belize
Cayman Islands
Costa Rica
Cuba
Curacao
Dominica
Dominican Republic
El Salvador
Grenada
Haiti
Honduras
Jamaica
Mexico
Montserrat
Nicaragua
Panama
Paraguay
Saint Kitts and Nevis
Saint Lucia
Saint Vincent
Trinidad
Turks Islands
Virgin Islands
0
10
20
30
40
50
60
Number of Fellows


Total Number of Benefited Staff Members - Fellowship Database RA V
Fiji
Kiribati
Malaysia
Micronesia
Papua New Guinea
Samoa
Solomon Islands
Tonga
Tuvalu
Vanuatu
0
10
20
30
40
50
60
Number of Fellows


Total Number of Benefited Staff Members - Fellowship Database RA VI
Armenia
Azerbaijan
Belarus
Bosnia and Herzegovina
Bulgaria
Croatia
Georgia
Hungary
Jordan
Kiribati
Lithuania
Macedonia
Malta
Moldova
Palestine
Papua New Guinea
Poland
Romania
Russian Federation
Samoa
Serbia
Slovakia
Spain
Syria
Turkey
Vanuatu
0
10
20
30
40
50
60
Number of Fellows

Annex XI: Tables of Responses from the Electronic Questionnaire (1) for the developing countries

Table I

Question 6 *Current fields of activity since returning*	*Responses in %*
Operational hydrology, water resources management	15
Administration and Management	14
Climate services and climate change, disaster risk reduction	28
Meteorology: public weather services, aviation, agriculture, marine, health, transport etc.	44

Table II

Question 8 *How would you rate the training provided by RTCs and other regional institutions?*	*Rating*	*Responses in %*
Quality	Poor	3
	Fair	0
	Good	23
	Very Good	60
	Excellent	15
Coverage of training content/activities	Poor	0
	Fair	5
	Good	26
	Very Good	62
	Excellent	8

Table III

Q 25 *FP Contribution to development activities at the national and regional levels*	*Rating*	*Responses in %*
i. Increasing the number of qualified and competent staff	*Poor*	*0*
	Fair	*0*
	Good	*29*
	Very Good	*34*
	Excellent	*37*
ii. Addressing current and emerging demands on weather, climate and water aviation, marine, agricultural	*Poor*	*0*
	Fair	*0*
	Good	*21*
	Very Good	*63*
	Excellent	*16*
iii. Transfer of knowledge to other staff members	*Poor*	*0*
	Fair	*3*
	Good	*29*
	Very Good	*47*

	Excellent	*21*
iv. Promoting visibility of NMHSs	*Poor*	*3*
	Fair	*5*
	Good	*26*
	Very Good	*47*
	Excellent	*18*
v. Contributing to socio-economic development	*Poor*	*0*
	Fair	*5*
	Good	*30*
	Very Good	*43*
	Excellent	*22*

Table IV

***Q. 26** Impact at the international level*	*Impact*	*Responses in %*
i. Networking with relevant partners and activities	Poor	0
	Fair	3
	Good	24
	Very Good	43
	Excellent	30
ii. Involvement with host institutions activities	Poor	0
	Fair	0
	Good	37
	Very Good	37
	Excellent	26
iii. Participation in WMO bodies, experts working group including IPCC and COP	Poor	3
	Fair	21
	Good	24
	Very Good	32
	Excellent	21
iv. Participation in other international cooperation structures and bodies	Poor	3
	Fair	18
	Good	29
	Very Good	26
	Excellent	24
v. others	Poor	0
	Fair	15
	Good	40
	Very Good	30
	Excellent	15

Table V

***Question 27** Relevance of the Fellowship Programme*	*Rating*	*Responses in %*

A. The objectives of the fellowship programme are still valid.	*Strongly Disagree*	*0*
	Disagree	*0*
	Neutral	*5*
	Agree	*39*
	Strongly Agree	*55*
	N/A=Not Applicable	*0*
B. The training you received was relevant to your current role.	*Strongly Disagree*	*0*
	Disagree	*0*
	Neutral	*13*
	Agree	*37*
	Strongly Agree	*50*
	N/A=Not Applicable	*0*
C. The activities and outputs of the fellowship programme are consistent with the overall goal and attainment of the objectives.	*Strongly Disagree*	*0*
	Disagree	*3*
	Neutral	*5*
	Agree	*53*
	Strongly Agree	*39*
	N/A=Not Applicable	*0*
D. The activities and outputs of the fellowship programme are consistent with the intended impacts and effects.	*Strongly Disagree*	*0*
	Disagree	*0*
	Neutral	*11*
	Agree	*55*
	Strongly Agree	*34*
	N/A=Not Applicable	*0*
E. The WMO Fellowship Programme is delivered effectively at the national and regional levels.	*Strongly Disagree*	*0*
	Disagree	*0*
	Neutral	*13*
	Agree	*39*
	Strongly Agree	*47*
	N/A=Not Applicable	*0*

Annex XII Responses from countries to questionnaire (2) mainly from developed countries

Country /Institution	Questionnaire				
	Please provide your views about the relevance of the WMO Fellowship Programme to the delivery of capacity development cooperation programme in your country, its delivery at the national and regional levels and how the programme could be repositioned.	***How important is climate and water related issues in the development cooperation programme of your country?***	***What would you consider as the major factors which could influence the achievement or non-achievement of sustainability impact of the fellowships programme at the national, regional and global levels?***	***Please provide suggestions on resources mobilization options for capacity development on weather, climate and water issues through the WMO Fellowship Programme.***	***Please provide any other comments on how to ensure sustainability and continued relevance of the WMO fellowship programme.***
China	China has always been a provider and active player of WMO Fellowship Programme. The WMO-China joint fellowship provides 15 scholarships per year to WMO Members. This has proved to be very successful in promoting the capacity development of the recipients' countries and cooperation between China and those countries. It would be more beneficial if the WMO fellowship could be advertised with a wider coverage and more diversified channels.	Climate and water related issues are gaining increasing attention and thus are attached with much more importance in bilateral and multilateral cooperation in China. China hosts the Regional Climate Centre of RAII and holds Forum on Regional Climate Monitoring, Assessment and Prediction for Asia (FOCRAII) each year. RTCs in China make plans of seminars or workshops on GFCS and climate change in recent years. China is also actively engaged in IPCC activities.	To ensure the sustainable impact of the fellowship programme is to guarantee the students that have the real demands receive qualified education. 1. The NMHSs that recommend the candidate should have certain selection criteria to send those who are really interested and meet the basic requirement to study abroad. 2. Supply/demand studies shall be carried out on whether such talents are needed in the specific countries, or there are career opportunities in those countries. The students would much motivated if they can find jobs in their NMHSs after they finish their study. 3. The fellowship offering institutions shall be qualified and under supervision. 4. Tracking the students' future development. The effect of distinguished or honourable graduates is the strong driver to sustain this programme.	WMO Fellowship Programme is an effective way to enhance the capacity development in developing countries in the long run. Human resources are one of the fundamental elements in the meteorological development in developing countries. More opportunities would be explored if its benefits are demonstrated in a wide and influential way.	None.
Meteo-France. France	The WMO fellowship programme to the delivery of capacity development cooperation programme is strengthened in France by a Memorandum of Understanding signed in February 2014 by WMO and Météo-France. The two bodies agreed to work together for the development of competencies of experts from least developed and developing countries. The possibility of a strong financial support, through the cost-sharing arrangement between WMO and MF, has proved to be very attractive for students and staff of NMSs from the Least Developed Countries and Developing Countries, especially from French-speaking countries. It also allows to match trainings needs of different	As climate change concerns and climate services are more and more key activities for NMSs, climate related issues is one of the main points in the MF development cooperation programme, especially in term of training. MF has been able to deal with an English version of the "Climatology, Foundation for Climate Services" training course since 2012. Since 2015 MF has proposed this training in French language, in alternate years. It is a success. Each year, as many as thirty speakers from the	Some factors that we could consider as major to influence the achievement or non-achievement of sustainability of the fellowships programme: - Supporting both trainings that will improve technical skills of staff and trainings that will strengthen organisational aspects (management, communication, project management…); - Giving priority to fellowship requests that are integrated in a global national training programme, and not only based on a case-by-case approach – this means in particular a kind of global coherence of the trainings requested by a	Some solutions to deal with the uncertainties in c/, follow. - Training in the country itself The offer of the catalog ENM obliges to pass through Toulouse and therefore costs quite expensive especially in air tickets. Therefore, a key is to try to develop trainings in the countries themselves. For example, in 2016, MF sent training experts peculiarly in Tunisia, Morocco, Haiti, Madagascar, Cook Island and could study other possibilities in	MF have conducted post-evaluation studies to make sure that the courses were fit for purpose, and plan to continue for the future, especially for new training courses.

	levels, i.e. : - initial training, for students that will work in the NMS after graduation and strengthen the national staff; - capacity building in management for technically experimented agents; - acquisition or improvement of operational skills for existing staff. With more details : 1/ Concerning long-term fellowships, 6 fellowships (WMO/MF) have been awarded in 2016 to students for initial training leading to a diploma (meteorologists and technician in meteorology with duration of 18 months to two years). 2/ The WMO Fellowship programme addresses also the need for the development of human capacity on planning, management, communication and other administrative and support functions. Indeed, since 2013, 10 trainees from Africa/Haiti have been following for 3 months in Toulouse the " Meteo and management " course, thanks to co-funding MF/WMO fellowships. 3/ In the vocational training domain, the Fellowship Programme has made a remarkable contribution to the Global Framework for Climate Service, with 79 financial supports (WMO + MF), since 2012, for climatologists from least developed and developing countries from the 5 Regions (Africa, South America, Asia, Europa, South-West Pacific) awarded for the International Climatology Workshop, "Climatology, Foundation for Climate Services", dedicated to climatologists, a two-week training held annually in Toulouse (ENM). Furthermore since 2016, the general co-funding of PCV-France (financial supports for subsistence) and WMO (airline tickets) has facilitated the attending of a lot of trainees from NMSs in diverse core meteorology aeras as forecasting, organization of forecasting, remote detection from space, aeronautical meteorology, marine meteorology. In fact in 2016, there was a change in the management of PCV-France funds; they were managed for the first year directly by WMO. Consequently, the number of international trainees which received a financial support in	different departments of Météo-France, but also from WMO, Universities and Research Centers, and Meteo-France International contributed to the success of the event. A special feature for 2017, supported by a WMO initiative also trained a future trainer. The new 2017 "Meteorology on Africa zone" course could help to manage water related issues.	country; - Promoting trainings which have proved their efficiency, i.e. which have at national level concrete positive impacts in terms of quality of delivered service, and at individual level which also may help trainees to improve their position.	other countries in the framework of national, regional or global program. - On line learning The development of this type of on line learning is considered for the future. For the Training "Climatology, Foundation for Climate Services", there are already metadata for the courses and resources on line, and students can work in a coordinated and collaborative manner, and use effectively distance learning in its pre and post course work.	

	continuing education in 2016 has doubled and reached the number of 78. As the needs are significant, the volume of financial support may increase, but the current mechanism may be seen as helpful and relevant. Possible steps to strengthen the efficiency of the programme from our views: - be sure that the delivered training correspond to the countries needs, and work with countries to improve the matching between training expectations and proposed trainings; - transfer more and more training activities at regional level, in giving priority to training the trainers and in developing courses with regional partners and distant learning; - address the problem of the pre-requisite skills, especially for initial training. New courses in preparation: In 2017, MF launches a new course "Meteorology on Zone Africa", for sub-Saharan NMSs. MF examines the interest to organize in 2018 a "Meteorology on Africa zone" course in English language in place of the "Weather Forecasting module 2", in December.				
Korea	Currently, Ewha Women's University provides WMO Fellowship programme in Korea and the KMA provides necessary support upon request by the University. In the future, more linkage between the program and the RTC-Korea should be enhanced under the umbrella of the WMO.	Currently, most of the programme of Korea's development cooperation programme, in terms of training courses, focuses on forecasting technology, such as Information and Communication Technology, and Radar Operations, and Satellite Operations, but not many about water and climate. The KMA plans to gradually expand the course to the water and climate issues in the future.	Budget, regional balance, and relevant education and training programmes	Provide focused support to selected RTC ETR programmes, for example, providing air fares for long-term programmes such as master or PhD courses	It is important to appropriately combine the WMO fellowship programme with the programs provided by the Members
Spain	The WMO fellowship program is essential for the delivery of various training activities on weather and climate, both face-to-face and remotely, developed by AEMET in Africa and especially in Latin America. Among these activities highlights the BIP-M course that AEMET is conducting for Latin American countries, especially for those who wish to certify their aeronautical forecasters. The WMO fellowship program has been fundamental in	The activities (training courses and workshops) developed by AEMET are highly appreciated by Latin American countries and contribute greatly to the improvement and development of many countries in water and climate management. Many of these courses are proposed by CIMHET. Among the priority sectors of the	The absence of the staff from their jobs over a long period of time can, in many cases, be a significant impediment to the submission of applications, especially in the case of those NMHSs who have major staff problems. So, on-line courses can be an important element to ensure a greater number of enrolled students who can successfully complete them.	We suggest the following: • To provide training on project formulation that allows access to the different existing funding mechanisms.	We propose the following actions: • To maintain the appropriate priority within the WMO-EC. • To encourage blended training courses to

	order to be able to carry out the first edition of the blended course, financing the stay of the students in the face-to-face phase in Madrid. A new edition 2017-18 (the second one) is about to begin. It is important to continue maintaining the fellowship program in order to impart this new editions of this course requested by the Conference of Directors of the Latin American Meteorological and Hydrological Services (CIMHET). The Declaration of La Antigua-II of the Thirteenth Session of CIMHET, in its third paragraph, states: "They consider that WMO fellowship program is a fundamental element for the development of the NMHSs and request the program to be maintained with similar conditions to the current ones and with an increase to be considered." At the moment, Spain intends to request the approval by WMO of a Regional Training Center to regularize all its training actions in Spanish oriented towards Latin America, and of course in this regard the scholarship program would be absolutely imperative.	Spanish cooperation, managed by AECID and in which AEMET participates, are "Water and sanitation" and "Environment and climate change". Thus, one of the lines of the action plan approved by CIMHET is the provision of meteorological, climatic and hydrological services.			reduce significantly the costs associated with student's stays.
Russia	At RSHU there are 17 WMO fellows obtaining all levels of degrees: BSc, MSc and PhD. As they are all from the less developed countries, knowledge which they receive from our professors is very appreciated in their countries. Every year someone from the WMO fellows appeal to us if they can apply to WMO fellowship one more time and continue their training at the next level of education without coming back home. There is also a good potential for short-term fellowships at ATI which currently is not used.	RTC components in Russia offer short- and long-term education and training programs in climate and water related issues. There is a growing national demand for short-term programs in climate services, which ATI currently addresses, while water issues have been covered there traditionally.	For RSHU the major factor is that there is no Agreement between Russian Federation Government and WMO which undoubtedly confirm the allocation of the Quota Scholarship of the Russian Government for the fellows selected by the WMO Secretariat. The Quota Scholarship of the Russian Government allows foreign students to study in Russian universities without any tuition fee. Every year the RF Government allocates about 15 000 Quotas for foreign students for the certain list of countries. If that kind of Agreement won't be released it will be very tough for RSHU to follow all deadlines. National regulations in education and training are changing and the changes need to be coordinated with international obligations in all levels and sectors. National procedures and obligations for short-term fellowships need to be discussed and established.	Conducting of scientific research and development for commercial companies. WMO and RTCs as its constituent entities could become a Global Research Centre on weather, climate and water issues for trans-national companies, which substantially depend on environmental requirements, climate aspects etc. WMO could support its RTCs in promoting research opportunities based on local expertise.	Similar questionnaire needs to be sent to all past WMO fellows. They have experience in holding WMO fellowship, and their progress and achievements help understanding the role of fellowships. WMO could help their RTC in establishing closer links with their WMO fellows to steer and improve any future training programs offered via WMO Fellowship scheme.
UK Met Office, Uk	The fellowship program enables students from developing countries to attended training programs in developed countries and gain	Huge effort, and funding, is provided by UK aid to support climate and water related issues and the use of	The achievement or non-achievement of the fellowship, at all levels, will be influenced by the perception of value for	The IMTR – UK MOC collaboration, under the DFID WISER programme, provides	• More effective measurement of the

	valuable qualifications and cultural experiences over an extended period of time. The program could be repositioned to provided greater flexibility in approach where experts from developed countries could be funded to provide training at a regional level using the RTC model to provide a similar outcome. The decision on which approach is undertaken could be made using a cost benefit model and also assessing the relevance of the training content to the delegate, and the challenges of the NHMS.	UK experts to support these programs or work. These issues are viewed as very important as they affect every country and form a fundamental part of the UK aid package.	money and cost-benefit of the program. Also, the relevance of the training itself (whether it is mid-latitude focused or tropical) for the delegates who are funded.	an interesting template where experts from developed countries provide in-country expertise and capacity building and use the RTC model to provide much more cost effective training. This approach was taken at a regional level where the delegate accommodation costs, which often incur the largest overhead, can be managed more effectively. This option should be balanced against the obvious cultural and aspirational benefits of funding delegates to undertake training abroad to developed NMHS's and universities. There will be instances where it is more financially viable to fund the delegates travel from the developing country rather than the experts to travel in-country but a more business focussed, cost-benefit approach may secure the longer term future of the program. Also, consideration given to the relevance of the content of the training program as described in C.	impacts of the training, both on the individual and on the recipient organisation. This work has begun recently. • Greater, and more transparent, collaboration between the NMHS's and the Universities to ensure there is a balance of theoretical and applied material that relates to the NMHS job roles and thus provides the maximum benefit to the organisation. • Continued support for the RTC model with a strategy to allow national training schools within the regions to provide a supporting role and maximize the use of available resources. • Ongoing strategy to make the best use of e-learning and other technological advances with an acceptance that all teaching methods have strengths and weaknesses and identify the most appropriate method for the training.
University of Reading, UK	The University of Reading has supported the WMO Fellowship Programme through its MSc	Climate and water related issues continue to play an important role in	For the University, financial support remains the major factor. We attract good	Close links and partnerships with Met Office and ECNWF	Continued relevance presumably in part is

	programmes, including instigating the now five-year old MSc titled Applied Meteorology & Climate with Management. Both the advanced meteorological education involved and the high-quality management training provided foster capacity development in a number of countries across Africa, Asia, Oceania and the Caribbean. WMO Fellows are usually mid-level staff who clearly benefit form their Reading experience. We have been particularly pleased with both the quality of students the programme attracts, and the diversity of the countries and regions of origin of the students. The current programme delivers knowledge transfer and training effectively, and does not require significant changes or reposition. A number of the graduates from the programme have gone on to significant roles in their home Meteorological services.	the development cooperation programme in the UK. The government is committing more financial support to help protect developing countries from climate change, and help alleviate pressures on natural resources. Funding for Official Development Assistance (ODA) research is available through several research funds.	applicants (more than the number of places that we could offer), and we feel we could provide enhanced training to more students than can currently attend the programme. One important issue, which we have discussed with Dr Adebayo and others, is trying to sustain the links between the fellows and both the WMO and University of Reading. In many cases, students on the programme have a desire to continue to further their education and to benefit from the research links they build during their time in Reading. We continue to work towards this, but any help to maintain these links would be likely to enhance the position of the fellows and help them to continue to lead development in their own countries.	could help mobilize resources. For example, WMO Fellows at Reading can participate in short courses or workshops hosted by Weather Centres. Our MSc projects with industrial partners also provide an effective resource for capacity development. The UK government currently has a broad portfolio of opportunities through its Newton fund which might be explored to benefit the programme and capacity development. In Reading, we are seeking to explore these opportunities through our school and departmental representatives for internationalisation and master development.	related to ensuring that the degrees that might be taken by Fellows are BIP-compliant since that is an embodiment of the relevance for the knowledge and understanding required by WMO.
USA	The USA Provides fellowship funding and courses for participants. The USA does not use fellowships to train staff.	Climate and water related issues are very important to the USA Cooperation Program. We run several workshops each year associated with cooperation with developing countries associated with Climate and Water	Retention of Fellowship Recipients is a major factor on the sustainability impact of fellowships. If we don't retain the recipients in the NMHS, the impact of the fellowships drops.	If we had long term metrics on retention and impact of the fellowship recipients, it would help with resource mobilization to support continuing fellowships.	The key to ensure sustainability is to capture impact metrics and retention statistics for the program.

Annex XIII: Outcomes and Benefits of the WMO Fellows-in-Touch

For fellows themselves	For current fellows	For the origin country of the former fellows	For the WMO	For the international community
1) Share their experience: make recommendations about training, institutions for future fellows and host country. 2) Keep in touch or meet online other fellows around the world. 3) Keep informed about meteorology, hydrology and other multilateral. 4) Exchanges on professional challenges. 5) Career opportunities. 6) Exchanges on social and cultural issues.	1) Applicant online profile, like a CV. 2) "Well-informed decisions" (Colinet): convenient documents, information about institutions. To make the best choice. 3) Facilitated online procedures for applicant: document ready for future applications. 4) Variety of applications in one place: fellowship, training, scientific visits, meetings, Expert/ lecturer assignment… 5) Multilingual platform: English, French, Spanish…	1) Get directly database and follow their fellows online. 2) Consulting experts online about country's issues. 3) Get information to resolve country's issues. (4) Involvement of member states from the beginning: better pre selection.)	1) The former follow "payback": fellowship reports online, keep in touch, databases. 2) No more incomplete applications 3) Better control in the pre selection: limit or avoid the risk of fraud in the selection of follow by choosing the best candidate. 4) Activities, database and interaction between follows, member states and institutions increase. 5) Better follow of the former fellows: long term contributions outcome to legitimate donations. 6) From the start to the end, "every" fellow are in the system. 7) Gain of time and work.	1) Better and active cooperation between individual, institutions and member states. 2) Increase of database and information exchange between experts and members states. 3) Professional network: increase the meteorologist and hydrologist community.

Annex XIV – List of WMO Alumni

No.	RA	Title	First Name	Surname	National Institute	Country of Residence	Field of Study	Degree	Country of Study	Graduate Date	Duration of Study
1	I	Mr.	Fernando Baial	SAMBU	Chef du Department climatologie	Guinea-Bissau	Climatology	MSc	Portugal	11/02/2004	20.87
2	I	Mr.	Muckson	SESAY	Meteorological Dept.	Sierra Leone	Meteorology	BSc	Russian Federation	15/04/2004	27.45
3	I	Mr.	Herechi	ALLAFOUZA	Direction des Ressources en eau et de la meteo	Chad	Meteorology	BSc	Russian Federation	30/06/2004	92.65
4	I	Mr.	Ladislaus Benedict	CHANGA	Tanzania Meteorological Agency (TMA)	Tanzania	Meteorology	MSc	Russian Federation	30/06/2004	81.94
5	I	Mrs.	Sarah Emerald	OSIMA	Tanzania Meteorological Agency	Tanzania	Meteorology	MSc	Russian Federation	30/06/2004	21.94
6	I	Mr.	Hamza Athuman	KABELWA	Tanzania Meteorological Agency	Tanzania	Meteorology	MSc	Russian Federation	30/06/2004	21.94
7	I	Mr.	Pascal F.	WANIHA	Tanzania Meteorological Agency	Tanzania	Meteorology	MSc	Russian Federation	30/06/2004	81.94
8	I	Mr.	Hector	CHIKOORE	Meteorological Services Department	Zimbabwe	Meteorology	MSc	South Africa	31/07/2004	16.9
9	I	Mr.	Hani Mosbah	SHTEWI		Libya	Meteorology	MSc	United Kingdom	17/09/2004	38.23
10	I	Mr.	Younis Shabar	AL-FENADI	Meteorological Department	Libya	Meteorology	MSc	United Kingdom	17/09/2004	38.23
11	I	Mr.	Ali Mahfud	JHIDER	Meteorological Department	Libya	Meteorology	MSc	United Kingdom	17/09/2004	38.23
12	I	Mr.	Abdussalm Ali	MOKTAR	Meteorological Department	Libya	Meteorology	MSc	United Kingdom	17/09/2004	38.23
13	I	Mr.	Ali Salem	EDDENJAL	Meteorological Department	Libya	Meteorology	MSc	United Kingdom	17/09/2004	38.23
14	I	Mr.	Moses Siganga	DLAMINI	National Meteorological Service	Swaziland	Meteorology	BSc	United Kingdom	30/09/2004	23.58
15	I	Mr.	Gallat	TEFERA DIRO	National Meteorological Services Agency	Ethiopia	Meteorology	MSc	United Kingdom	30/09/2004	11.35
16	I	Mrs.	Leonia Colestin	MSAFIRI	Tanzania Meteorological Agency	Tanzania, United Republic of	Meteorology	MSc	United Kingdom	30/09/2004	11.94
17	I	Mr.	Manahil IBRAHIM	Haj Ali	Meteorological Authority	Sudan	Hydrology	Certificate	Kenya	03/12/2004	8.84
18	I	Mr.	Tom Titus	DLAMINI	National Meteorological Service	Swaziland	Hydrology	Certificate	Kenya	03/12/2004	8.84
19	I	Ms.	Gladys	WEKESA	Meteorological Dept.	Kenya	Hydrology	Diploma	Kenya	03/12/2004	8.84
20	I	Mr.	Ramokoebu William	LEWANEKA	Lesotho Meteorological Services	Lesotho	Meteorology	Diploma	Australia	31/12/2004	10.77
21	I	Mr.	Edmund	TSIBEB	Meteorological Services	Namibia	Meteorology	Diploma	Australia	31/12/2004	10.97
22	I	Mr.	A.	COULIBALY		Mali	Meteorology	Certificate	Madagascar	31/03/2005	38.77
23	I	Mr.	Issa Ardia	IDRISS	Direction des ressources en eau et de la meteorologie	Chad	Meteorology	BSc	Russian Federation	30/06/2005	45.94
24	I	Ms.	El Yakeir	MINT MOHAMED	Service de meteorologie	Mauritania	Meteorology	Certificate	Algeria	30/06/2005	8.94
25	I	Mr.	Mohamed Ali Ould	CHEIKH AHMED	Service de meteorologie	Mauritania	Meteorology	Certificate	Algeria	30/06/2005	8.94
26	I	Ms.	Annie Berthe	KELEFIO	Direction de la meteorologie	Central African Republic	Meteorology	BSc	Niger	30/06/2005	37.94
27	I	Ms.	Chali Debele	DEBELE GURJI	National Meteorological Sevices Agency	Ethiopia	Meteorology	Diploma	India	31/08/2005	11.58
28	I	Mr.	Anthony	TWAHIRWA	National Meteorological Department	Rwanda	Meteorology	BSc	Kenya	30/09/2005	23.94
29	I	Mr.	Niragire Antoine	TWAGIRUMU KIZA	Direction generale de l'aeronautique,	Rwanda	Hydrology	Certificate	Belgium	30/09/2005	12.55
30	I	Mr.	Johnny Momoh	ROBERTS	Meteorological Department	Sierra Leone	Meteorology	Certificate	Nigeria	31/10/2005	11.97
31	I	Mr.	Dodou	NJIE	Department of Water Resources	Gambia	Meteorology	Diploma	Nigeria	31/10/2005	11.97
32	I	Mr.	James Barrone Kofi	DUSU	Meteorological Services Department	Ghana	Meteorology	Diploma	Nigeria	31/10/2005	11.97

33	I	Mr.	Maurice Moisa	SENESIE	Meteorological Department	Sierra Leone	Meteorology	Certificate	Nigeria	31/10/2005	11.97
34	I	Mr.	Joseph Vivie	LAVALIE	Meteorological Department	Sierra Leone	Meteorology	Certificate	Nigeria	31/10/2005	11.97
35	I	Ms.	Loveness	NIKISI	Meteorological Department	Zambia	Meteorology	Diploma	Kenya	31/12/2005	23.84
36	I	Mr.	Felix	IMBWAE	Meteorological Department	Zambia	Meteorology	Diploma	Kenya	31/12/2005	23.84
37	I	Mr.	Inacio	NANQUE	Direccao-General do Servico Meteorologico Nacional	Guinea-Bissau	Meteorology	BSc	Russian Federation	06/03/2006	53.61
38	I	Mr.	Brou	KANGA	Direction de la meteorologie nationale	Cote d'Ivoire	Meteorology	Certificate	Niger	30/04/2006	5.94
39	I	Mr.	Sadibou	BA	Ministere du Tourisme et des Transport aeriens	Senegal	Meteorology	BSc	France	31/07/2006	11.03
40	I	Mr.	Francisco	GOMES	Direccao-General do Servico Meteorologico Nacional	Guinea-Bissau	Meteorology	BSc	Russian Federation	30/08/2006	59.39
41	I	Mr.	Wilberforce Kahwa	KIKWASI	Tanzania Meteorological Agency	Tanzania, United Republic of	Meteorology	BSc	Russian Federation	30/08/2006	55.94
42	I	Mr.	Hashim Karim	NG'ONG'OLO	Tanzania Meteorological Agency	Tanzania, United Republic of	Meteorology	BSc	Russian Federation	30/08/2006	46.94
43	I	Mr.	Romuald	ATIPO	Service meteorologique national	Congo	Meteorology	BSc	Russian Federation	30/08/2006	57.94
44	I	Mr.	Papice Gildas	ONDONGO PAUMOYE	Agence nationale de l'aviation civile	Congo	Meteorology	BSc	Russian Federation	30/08/2006	57.94
45	I	Mr.	Angelo Juma	LUGENGE	Tanzania Meteorological Agency	Tanzania, United Republic of	Meteorology	BSc	Russian Federation	30/08/2006	55.94
46	I	Mr.	Teke Solomon	RAMOTUBEI	Lesotho Meteorological Services	Lesotho	Meteorology	Diploma	India	31/08/2006	11.61
47	I	Mr.	Mphethe Isaac	TONGWANE	Lesotho Meteorological Services	Lesotho	Meteorology	Diploma	India	31/08/2006	11.61
48	I	Mr.	Theodore Michael	MARGUERITE	National Meteorological Services	Seychelles	Meteorology	MSc	Kenya	30/09/2006	22.71
49	I	Mr.	Yohannes G.	GETAHUN	National Meteorological Services Agency	Ethiopia	Meteorology	MSc	United Kingdom	30/09/2006	12.19
50	I	Mr.	Oumarou	OUEDRAOGO	Direction de la meteorologie	Burkina Faso	Meteorology	BSc	Niger	30/09/2006	23.94
51	I	Mr.	Idan I.	ABDILLAHI	Department of meteorology	Djibouti	Meteorology	BSc	Algeria	30/09/2006	23.94
52	I	Mr.	Motsomi Joshua	MALETJANE	Lesotho Meteorological Services	Lesotho	Meteorology	MSc	Kenya	30/09/2006	22.71
53	I	Mr.	Eduardo	BARAI	Direccao-General do Servico Meteorologica Nacional	Guinea-Bissau	Meteorology	Certificate	Portugal	30/10/2006	18
54	I	Mr.	Deus	BAMANYA	Uganda Meteorological Department	Uganda	Meteorology	MSc	Kenya	31/10/2006	23.74
55	I	Mr.	Rufus I.	EWANLEN	Nigerian Meteorological Agency	Nigeria	Meteorology	MSc	Kenya	30/11/2006	25.94
56	I	Ms.	Florence	NGWIRA PADDY	Meteorological Services	Malawi	Meteorology	Diploma	Kenya	30/12/2006	23.1
57	I	Mr.	Lufeni	STEYA	Meteorological Services	Malawi	Meteorology	Diploma	Kenya	30/12/2006	23.1
58	I	Mr.	Bernard Sharon	MAJANI	Kenya Meteorological Department	Kenya	Meteorology	MSc	India	18/01/2007	18
59	I	Mr.	Biruk	KEBEDE TEMEGNU	Ethiopia Meteorological Services	Ethiopia	Hydrology	MSc	Tanzania, United Republic of	30/07/2007	17.61
60	I	Mr.	Joseph K.	KANYANGA	Zambia Meteorological Department	Zambia	Meteorology	PhD	South Africa	31/07/2007	6.94
61	I	Mr.	Mussa	MUSTAFA	Instituto Nacional de Meteorologia	Mozambique	Meteorology	MSc	Zimbabwe	31/07/2007	12.97
62	I	Mr.	Luis Domingos	CONSTANTINO	Insituto Nacional de Meteorologia - INAMET	Angola	Meteorology	MSc	Zimbabwe	31/07/2007	12.97
63	I	Mr.	Niokhor	DIOUF	Direction de la meteorologie nationale	Senegal	Meteorology	Diploma	Niger	06/08/2007	34.16
64	I	Mr.	Fadia	DIALLO	Direction de la meteorologie nationale	Senegal	Meteorology	Diploma	Niger	06/08/2007	34.16
65	I	Mr.	Sanie	KARGBO	Meteorological Department	Sierra Leone	Meteorology	Diploma	Nigeria	27/08/2007	11.97
66	I	Mr.	Nat	WILSON	Meteorological Department	Sierra Leone	Meteorology	Diploma	Nigeria	27/08/2007	11.97
67	I	Mr.	Patrick	MUSA	Meteorological Department	Sierra Leone	Meteorology	Diploma	Nigeria	27/08/2007	11.97

68	I	Mr.	Essohouna	ALFA		Togo	Meteorology	BSc	Niger	30/08/2007	10.68
69	I	Mr.	George Njagga Emanuel	STAFFORD	Department of Water Resources	Gambia	Meteorology	BSc	Kenya	31/08/2007	34.55
70	I	Mr.	Vincent	AMELIE	National Meteorological Services	Seychelles	Meteorology	BSc	Kenya	31/08/2007	35.13
71	I	Mr.	Charles K.A.	YORKE	Ghana Meteorological Agency	Ghana	Meteorology	MSc	Nigeria	31/08/2007	15.19
72	I	Mr.	Noah	KERANDI	Kenya Meteorological Department	Kenya	Meteorology	MSc	Nigeria	31/08/2007	27.19
73	I	Ms.	Fortunata N.	LUBEGA	Uganda Meteorological Department	Uganda	Others (Specify)	Certificate	Uganda	31/08/2007	35.32
74	I	Mr.	Nts'ene	NTSALA	Lesotho Meteorological Services	Lesotho	Meteorology	MSc	India	31/08/2007	11.65
75	I	Ms.	Malehloa J.	JOCKEY	Lesotho Meteorological Services	Lesotho	Meteorology	Diploma	India	07/09/2007	11.87
76	I	Mr.	France	MOKOENA	Lesotho Meteorological Services	Lesotho	Meteorology	Diploma	India	07/09/2007	11.87
77	I	Mr.	Malibo P.	THABANG	Lesotho Meteorological Services	Lesotho	Meteorology	Diploma	India	07/09/2007	11.87
78	I	Mr.	Mathatela	NTSATSI		Lesotho	Meteorology	Diploma	India	07/09/2007	11.87
79	I	Mr.	Gaya	DJERGO	Direction des ressources en eau et de la meteorologie	Chad	Meteorology	BSc	Niger	30/09/2007	35.61
80	I	Mr.	Djekadom	NADJIHOUMEM	Direction des ressources en eau et de la meteorologie	Chad	Meteorology	BSc	Niger	30/09/2007	35.61
81	I	Mr.	Felicien	CHEDE	National Meteorological Service	Benin	Meteorology	BSc	Niger	30/09/2007	35.94
82	I	Mr.	Janvier	AGBADJAGAN	ASECNA-METEO	Benin	Meteorology	BSc	Niger	30/09/2007	35.94
83	I	Mrs.	Aissatou	DIALLO	Direction Nationale de la Meteorologie	Guinea	Meteorology	Certificate	Nigeria	30/09/2007	11.94
84	I	Ms.	Duduzile	NHLENGETHWA-MASINA		Swaziland	Meteorology	MSc	United Kingdom	30/09/2007	11.94
85	I	Mr.	Limomane	PESHOANE	Lesotho Meteorological Services	Lesotho	Meteorology	MSc	United Kingdom	30/09/2007	12.03
86	I	Mrs.	Francisca	MARTEY	Ghana Meteorological Agency	Ghana	Meteorology	MSc	Kenya	15/10/2007	11.97
87	I	Mr.	Arthur	GAR-GLAHN	Ministry of Transport	Liberia	Meteorology	MSc	Kenya	25/10/2007	24.03
88	I	Mr.	Dodou	NJIE	Department of Water Resources	Gambia	Meteorology	Certificate	Nigeria	19/11/2007	11.97
89	I	Ms.	Isabella	KAPOLO	Namibia Meteorological Service	Namibia	Meteorology	Diploma	Kenya	31/12/2007	23.9
90	I	Mr.	Oluseun	IDOWU	Plot 507 Pope John Paul II Street	Nigeria	Meteorology	MSc	South Africa	28/02/2008	23.87
91	I	Mr.	Andre	NGUILAMBOUHE BONGLA	Direction de la Meteorologie	Cameroon	Meteorology	Diploma	Kenya	17/03/2008	9.52
92	I	Ms.	Nantenin	KEITA	Meteorologie nationale	Guinea	Meteorology	Certificate	Niger	30/03/2008	5.94
93	I	Mr.	Juddy	OKPARA	Nigerian Meteorological Agency	Nigeria	Hydrology	MSc	India	16/07/2008	24.03
94	I	Mr.	Patrick	MUSA	Meteorological Department	Sierra Leone	Climatology	Certificate	Nigeria	28/08/2008	11.87
95	I	Mr.	Edison	NKONDE	Zambia Meteorological Department	Zambia	Meteorology	MSc	United Kingdom	31/08/2008	31.97
96	I	Mr.	Fredrick	KOSSAM	Malawi Meteorological Services	Malawi	Meteorology	MSc	United Kingdom	31/08/2008	10.97
97	I	Mr.	Sikelela Eric	SEYAMA	National Meteorological Service	Swaziland	Meteorology	MSc	United Kingdom	31/08/2008	11.97
98	I	Mr.	Stephen Mzikayifani	MKHATSHWA	National Meteorological Service	Swaziland	Meteorology	Certificate	Kenya	04/12/2008	22.87
99	I	Ms.	El Yakeir	MINT MOHAMED	Service de meteorologie	Mauritania	Meteorology	MSc	Algeria	20/12/2008	23.26
100	I	Mr.	Charani	CHAMSOUDINE	National Meteorological Service	Comoros	Meteorology	BSc	Madagascar	31/12/2008	21.97
101	I	Mr.	Brahima	TIMBO	Direction nationale de la meteorologie	Mali	Meteorology	MSc	Algeria	30/06/2009	56.94
102	I	Mrs.	Mabafokeng F.	MAHAHABISA	Lesotho Meteorological Services	Lesotho	Meteorology	MSc	South Africa	30/06/2009	23.94
103	I	Mr.	Toimu	EASTMAN	Ministry of Transport	Liberia	Meteorology	Certificate	Egypt	30/06/2009	5.71
104	I	Mr.	Godefroid	NSHIMIRIMANA	Institut Geographique du Burundi IGEBU	Burundi	Meteorology	Diploma	Niger	31/07/2009	19.29

105	I	Mr.	Claude	NGOMBET LEWONA		Congo	Meteorology	BSc	Russian Federation	31/08/2009	59.97
106	I	Ms.	Marlene B.	MONDJO NTSONA		Congo	Meteorology	BSc	Russian Federation	31/08/2009	59.97
107	I	Mr.	Tourki Barka	HASSAN	Ministere de l'environment et de l'eau	Chad	Meteorology	BSc	Russian Federation	31/08/2009	59.97
108	I	Mr.	Didigui Lonimi	ABDELKERIM	Ministere de l'Environnement	Chad	Meteorology	BSc	Russian Federation	31/08/2009	59.97
109	I	Mr.	Solomon W'Odera	MANGENI	Department of Meteorology	Uganda	Meteorology	BSc	United Kingdom	31/08/2009	35.97
110	I	Mr.	Ntsene	NTSALA	Lesotho Meteorological Services	Lesotho	Meteorology	Diploma	Egypt	31/08/2009	7.74
111	I	Mr.	Albert	SHERMAN	Ministry of Transport	Liberia	Meteorology	Diploma	Egypt	31/08/2009	7.74
112	I	Mr.	Eugene V.S.	GAR-GLAHN	MINISTRY OF TRANSPORT	Liberia	Meteorology	Diploma	Egypt	31/08/2009	7.74
113	I	Mr.	Abdoulaye	SANOGO	Direction nationale de la meteorologie	Mali	Meteorology	MSc	Algeria	30/09/2009	59
114	I	Mrs.	Habiba Ismail	MTONGORI	Tanzania Meteorological Agency	Tanzania, United Republic of	Meteorology	MSc	United Kingdom	30/09/2009	11.94
115	I	Mr.	David Tshepho	NGOBENI	South African Weather Service	South Africa	Meteorology	MSc	United Kingdom	30/09/2009	11.94
116	I	Mr.	Kameya R.	MANJOMBA	Zambia Meteorological Department	Zambia	Meteorology	Diploma	Kenya	31/12/2009	23.32
117	I	Ms.	Micah	NAMUKOKO	Zambia Meteorological Department	Zambia	Meteorology	Diploma	Kenya	31/12/2009	23.16
118	I	Mr.	Tresphord	SOTA	Zambia Meteorological Department	Zambia	Meteorology	Diploma	Kenya	31/12/2009	23.16
119	I	Ms.	Peggy Zulu	THOLE	Zambia Meteorological Department	Zambia	Meteorology	Diploma	Kenya	31/12/2009	23.16
120	I	Mr.	Mamadou	FALL		Senegal	Meteorology	MSc	Algeria	04/01/2010	23.97
121	I	Mr.	Bothata	MAPHATHE	Lesotho Meteorological Services	Lesotho	Hydrology	BSc	China	29/04/2010	19.9
122	I	Mr.	Sidney	BATISDA DA FONESCA		Sao Tome and Principe	Meteorology	BSc	Algeria	31/05/2010	31.52
123	I	Mr.	Sidney	BATISDA DA FONESCA		Sao Tome and Principe	Meteorology	BSc	Algeria	31/05/2010	31.52
124	I	Mr.	Jose L.	LIMA ONOFRE		Sao Tome and Principe	Meteorology	BSc	Algeria	31/05/2010	31.52
125	I	Mr.	Laminah	MARENAH		Gambia	Meteorology	Diploma	Nigeria	30/06/2010	11.06
126	I	Ms.	Asma Elzein	ABDALLA	Sudan Meteorological Authority	Sudan	Hydrology	BSc	Tanzania, United Republic of	31/07/2010	22.97
127	I	Mr.	Brahima	TIMBO	Direction nationale de la meteorologie	Mali	Meteorology	MSc	Algeria	31/07/2010	12.97
128	I	Mr.	Yusupha	BOJANG	Department of Water Resources	Gambia	Hydrology	BSc	Niger	31/08/2010	35.97
129	I	Mr.	Aime Evariste	OUEDRAOGO	Meteoroloige Agricole	Burkina Faso	Meteorology	MSc	Niger	31/08/2010	22.81
130	I	Mr.	Tourki Barka	HASSAN	Ministere de l'environment et de l'eau	Chad	Meteorology	BSc	Russian Federation	31/08/2010	11.97
131	I	Ms.	Fatma	MINT MOHAMED EL BECHIR		Mauritania	Climatology	Diploma	Algeria	10/10/2010	23.97
132	I	Ms.	Albertina G.	ANDERSON	Namibia Meteorological Service	Namibia	Meteorology	BSc	Kenya	14/10/2010	35.97
133	I	Mr.	Andre Jose	NHANTUMBO	Mozambique Meteorological Service	Mozambique	Meteorology	BSc	Algeria	31/10/2010	29.97
134	I	Mr.	Arabe Sandre	ARCANJO	Mozambique National Service	Mozambique	Meteorology	BSc	Algeria	31/10/2010	29.97
135	I	Ms.	Vuyisile P.	NDLELA	NMS	Swaziland	Meteorology	Diploma	South Africa	30/11/2010	9.48
136	I	Mr.	Nkosinathi S.	HLOPHE	Swaziland Meteorological Service	Swaziland	Meteorology	Diploma	South Africa	30/11/2010	9.48
137	I	Mr.	Laminah	MARENAH		Gambia	Meteorology	Diploma	Nigeria	30/12/2010	5.94
138	I	Ms.	Nancy N.	DLAMINI	NMS	Swaziland	Meteorology	Diploma	Kenya	30/12/2010	11.61
139	I	Mr.	Mahamoud Saidy	AKKAD	Direction de la Meteorologie	Comoros	Meteorology	BSc	Madagascar	31/12/2010	21.97
140	I	Mr.	Sydney S.	LUKHELE	National Meteorological Service	Swaziland	Meteorology	Diploma	Kenya	31/12/2010	11.65
141	I	Mr.	Buhle Z.	SIMELANE	NMS	Swaziland	Meteorology	Diploma	Kenya	31/12/2010	11.65

142	I	Mr.	Sive M.	SHABALALA	NMS	Swaziland	Meteorology	Diploma	Kenya	31/12/2010	11.65
143	I	Ms.	Pertunia	MAHLINZA		Swaziland	Meteorology	Diploma	Kenya	31/12/2010	11.65
144	I	Mr.	Victor S.	MOTSA	National Meteorological Service	Swaziland	Meteorology	Diploma	Kenya	31/12/2010	11.65
145	I	Mr.	Justin	MBAH	Direction de la Meteorologie nationale	Cameroon	Meteorology	BSc	Kenya	31/12/2010 12:00	35.79
146	I	Mr.	Surafel Mamo	WOLDEGBRAEL	Ethiopia Meteorological Agency	Ethiopia	Hydrology	MSc	Netherlands	30/04/2011	18.48
147	I	Ms.	Stephanie	YENGUE ZIBGI	Direction de la Meteorologie	Central African Republic	Hydrology	BSc	China	15/06/2011	33.45
148	I	Ms.	Stephanie	YENGUE ZIGBI	Central	Central African Republic	Hydrology	BSc	China	30/06/2011	33.94
149	I	Mrs.	Fatou	JOHN	Department of Water Resources	Gambia	Hydrology	BSc	China	30/08/2011	47.94
150	I	Mr.	Aboubacar	DIALLO	Guinea Meteorological Service	Guinea	Meteorology	MSc	China	31/08/2011	35.97
151	I	Mr.	Bob Alex	OGWANG	Uganda Meteorological Department	Uganda	Meteorology	MSc	China	31/08/2011	23.97
152	I	Mr.	Bento Inacio	CAMBULA	Mozambique Meteorological Institute	Mozambique	Meteorology	MSc	China	31/08/2011	23.97
153	I	Mr.	Anato Boris	POLYNICE		Benin	Meteorology	BSc	Russian Federation	30/09/2011	48.94
154	I	Mr.	Charles Opio	OMWATA	Uganda Met Service	Uganda	Meteorology	Diploma	Kenya	30/09/2011	11.58
155	I	Mr.	Sifisio S.C.	NZALO	Swaziland Meteorological Service	Swaziland	Meteorology	MSc	United Kingdom	30/09/2011	11.94
156	I	Ms.	Hlobsile P.	SIKHOSANA	Swaziland Meteorological Service	Swaziland	Meteorology	MSc	United Kingdom	30/09/2011	11.94
157	I	Ms.	Thembisile	KUNENE	National Meteorological Services	Swaziland	Meteorology	Diploma	Kenya	31/12/2011	23.65
158	I	Mr.	Felix	IMBWAE	Meteorological Department	Zambia	Meteorology	BSc	South Africa	31/12/2011	23.97
159	I	Mr.	Oliver S.	MUDENDA	Zambia Meteorological Department	Zambia	Meteorology	BSc	South Africa	31/12/2011	23.97
160	I	Mr.	Youssouf	HAKIM	Comoros Meteorological Service	Comoros	Meteorology	BSc	Madagascar	31/03/2012	30.97
161	I	Mr.	Gualberto de H.	JOAO	Angola Meteorological Service	Angola	Climatology	MSc	Brazil	31/03/2012	21.97
162	I	Mr.	Tshimanga D.	NKONGOLO	Agence nationale de Meteorologie METTELSAT	Congo, The Democratic Republic of the	Meteorology	Diploma	Algeria	30/06/2012	31.94
163	I	Mr.	Guillaume	NACOULMA		Burkina Faso	Climatology	MSc	France	30/06/2012	9.94
164	I	Mr.	Jean	EMANE	Gabon Meteorological Service	Gabon	Meteorology	Diploma	Egypt	19/07/2012	7.97
165	I	Mr.	Edward	WISSEH	Ministry of Transport	Liberia	Meteorology	BSc	China	31/07/2012	58.97
166	I	Mr.	Honore A.	ABAMACO	Direction de la Meteorologie	Central African Republic	Meteorology	BSc	Algeria	31/07/2012	45.87
167	I	Miss.	Naomi	KUMI	Meteorological Services Department	Ghana	Meteorology	MSc	China	30/08/2012	23.94
168	I	Mr.	Samuel	SENKUNDA	Swanair Travel and Safaris Ltd	Uganda	Meteorology	Certificate	Kenya	30/08/2012	9.94
169	I	Mr.	Teke Solomon	RAMOTUBEI	Lesotho Meteorological Services	Lesotho	Meteorology	MSc	China	31/08/2012	35.97
170	I	Mr.	Michel Pinghouinde	NIKIEMA	Direction de la Meteorologie nationale	Burkina Faso	Meteorology	MSc	China	31/08/2012	35.97
171	I	Mr.	Wendyam Lazare	SAWADOGO		Burkina Faso	Meteorology	MSc	China	31/08/2012	23.97
172	I	Mr.	Isaac	MUGUME	Uganda Met	Uganda	Meteorology	MSc	China	31/08/2012	23.97
173	I	Mr.	Mosoue E.	LETUMA	Lesotho Meteorological Services	Lesotho	Meteorology	MSc	China	31/08/2012	23.97
174	I	Mr.	James Wanjohi	NYAGA	Kenya Met	Kenya	Meteorology	MSc	China	31/08/2012	23.97
175	I	Mr.	Gervais D.	YONTCHANG	Cameroon Meteorological Service	Cameroon	Meteorology	MSc	United Kingdom	30/09/2012	11.94
176	I	Mr.	France	MOKOENA	Lesotho Meteorological Services	Lesotho	Meteorology	MSc	United Kingdom	30/09/2012	11.94
177	I	Mr.	Khalid A.	MUWEMBE	Uganda Meteorological Department	Uganda	Meteorology	MSc	United Kingdom	30/09/2012	11.94
178	I	Mr.	Cyriaques	SIA	Direction de la Meteorologie nationale	Burkina Faso	Meteorology	MSc	Burkina Faso	30/09/2012	12.94
179	I	Mr.	Gualberto de H.	JOAO	Angola Meteorological Service	Angola	Climatology	MSc	Brazil	30/09/2012	5.94

180	I	Mr.	Elisha N.	MOYO	Zimbabwe Meteorological Department	Zimbabwe	Meteorology	MSc	United Kingdom	30/09/2012 12:00	11.95
181	I	Mr.	Laminah	MARENAH		Gambia	Meteorology	Diploma	Nigeria	31/10/2012	11.77
182	I	Mr.	Alpha Mamadou Malado	DIALLO		Senegal	Meteorology	MSc	China	30/11/2012	62.94
183	I	Ms.	Irene B.	KALUMBETE	Tanzania Meteorological Agency	Tanzania, United Republic of	Meteorology	BSc	China	30/11/2012	62.94
184	I	Mr.	Muhammad	JALLOW	Department of Water Resources	Gambia	Meteorology	Certificate	Kenya	30/12/2012	23.94
185	I	Mr.	Wilbert Timiza	MURUKE		Tanzania, United Republic of	Meteorology	Certificate	Japan	31/01/2013	6.97
186	I	Mr.	Messele Hadush	GEBREAYESUS	Ethiopia Meteorological Service Agency	Ethiopia	Meteorology	MSc	China	18/02/2013	41.55
187	I	Ms.	Khetsiwe N.	KHUMALO	Swaziland Meteorological Service	Swaziland	Meteorology	MSc	China	28/06/2013	21.87
188	I	Mr.	Didier	NTWALI	Rwanda Meteorological Service	Rwanda	Meteorology	BSc	China	30/06/2013	21.94
189	I	Ms.	Madoukpe	OYEDE	Service meteorologique national	Benin	Meteorology	MSc	China	30/07/2013	22.94
190	I	Mr.	Katumba	MATALA	METTELSAT	Congo, The Democratic Republic of the	Meteorology	Diploma	Niger	31/07/2013	23.97
191	I	Ms.	Malehloa J.	JOCKEY	Lesotho Meteorological Services	Lesotho	Meteorology	Diploma	Egypt	31/07/2013	8.97
192	I	Mr.	Kenedy Cipriano	SILVERIO		Mozambique	Climatology	MSc	Russian Federation	30/08/2013	23.94
193	I	Mr.	Landing	BOJANG	Department of Water Resources	Gambia	Hydrology	Diploma	China	31/08/2013	59.97
194	I	Ms.	Bintu	MOMOH	Meteorological Department	Sierra Leone	Hydrology	BSc	China	31/08/2013	59.97
195	I	Mr.	Serge Alain	MOUSSIROU	Gambia Meteorological Service	Gabon	Hydrology	BSc	China	31/08/2013	59.97
196	I	Ms.	Florinda	FONSECA		Guinea-Bissau	Hydrology	BSc	China	31/08/2013	59.97
197	I	Mr.	Bakari	MANGANE		Mali	Meteorology	MSc	Russian Federation	31/08/2013	47.97
198	I	Mr.	Dafa A.H.	HAMMAD	Sudan Met	Sudan	Meteorology	MSc	Russian Federation	31/08/2013	35.97
199	I	Mr.	Terence	MUSHORE	Zimbabwe Met Service	Zimbabwe	Meteorology	MSc	China	31/08/2013	35.97
200	I	Mr.	Nana Kofi	OPOKU	Ghana Meteorological Agency	Ghana	Meteorology	MSc	China	31/08/2013	23.97
201	I	Ms.	Essoesinam	TCHONDA	Direction generale de la meteorologie nationale	Togo	Meteorology	MSc	China	31/08/2013	23.97
202	I	Ms.	Janet	UMUHOZA	Rwanda Meteorological Service	Rwanda	Meteorology	BSc	China	27/09/2013	60.84
203	I	Ms.	Bathsheba	MUSONDA	Zambia Meteorolical Department	Zambia	Meteorology	BSc	China	27/09/2013	60.84
204	I	Ms.	Haine	MINT CHEIKHNA MOHAMDY		Mauritania	Meteorology	BSc	China	27/09/2013	60.84
205	I	Mr.	El Moustapha	OULD MOHAMED SALEM		Mauritania	Meteorology	BSc	China	27/09/2013	60.84
206	I	Mr.	Ogopotse B.	PULE	Botswana Meteorological Services	Botswana	Hydrology	MSc	Germany	30/09/2013	23.94
207	I	Mr.	Zablon Weku	SHILENJE		Kenya	Meteorology	MSc	United Kingdom	30/09/2013	11.94
208	I	Mr.	Sikelela Eric	SEYAMA	National Meteorological Service	Swaziland	Meteorology	MSc	United Kingdom	30/09/2013	11.94
209	I	Mr.	Albert	SAPU KABALA	METTELSAT	Congo, The Democratic Republic of the	Meteorology	Diploma	Algeria	20/12/2013	26.39
210	I	Mr.	Lorougnon Jean Fernand	TAPE		Cote d'Ivoire	Meteorology	BSc	China	20/01/2014	64.61
211	I	Mr.	Vilho. S.	NDEUNYEMA	Namibia Meteorological Services	Namibia	Meteorology	BSc	China	24/01/2014	64.74

212	I	Mr.	Ismahila	KOUMARE	Direction nationale de la meteorologie	Mali	Meteorology	MSc	China	15/07/2014	46.45
213	I	Mr.	Saidu Momoh	KAMARA	Meteorological Department	Sierra Leone	Meteorology	BSc	Nigeria	18/08/2014	11.29
214	I	Mr.	Joseph	MBINZA TSIKEBI	Direction de la Meteorologie Nationale	Congo	Meteorology	BSc	Russian Federation	31/08/2014	80.16
215	I	Mr.	Ousmane	DIALLO		Guinea	Hydrology	BSc	China	31/08/2014	59.97
216	I	Mr.	Didier	KAKPA		Benin	Meteorology	MSc	China	31/08/2014	23.97
217	I	Mr.	Abdelhadi	EL YAZIDI	Direction de la meteorologie nationale	Morocco	Meteorology	MSc	France	31/08/2014	11.97
218	I	Mr.	Tijani	BOJANG		Gambia	Meteorology	MSc	United Kingdom	31/08/2014	11.97
219	I	Mr.	Edison	NKONDE	Zambia Meteorological Department	Zambia	Meteorology	MSc	United Kingdom	31/08/2014	11.97
220	I	Mr.	Godwin	AYESIGA	Uganda Meteorological Department	Uganda	Meteorology	MSc	United Kingdom	30/09/2014	11.94
221	I	Miss.	Hind	OUBANAS	Direction de la meteorologie nationale	Morocco	Meteorology	MSc	France	31/10/2014	13.97
222	I	Mr.	Bartholomew O.	NWOGBAGA	Nigerian Meteorological Agency (NIMET)	Nigeria	Meteorology	BSc	China	30/11/2014	62.94
223	I	Mr.	Serge Camille Stephane	AHILE		Cote d'Ivoire	Meteorology	BSc	China	30/11/2014	62.94
224	I	Ms.	Lumfuh Abongnwi	NGWA	Cameroon Meteorological Service	Cameroon	Meteorology	Diploma	Kenya	30/12/2014	35.68
225	I	Ms.	Moussa	ZAINABA		Comoros	Meteorology	BSc	Algeria	29/01/2015	26.77
226	I	Mr.	Mohamed Ali	HAIDAR	Djibouti National Meteorological Service	Djibouti	Meteorology	BSc	Madagascar	28/02/2015	26.87
227	I	Ms.	Diana	BANDA	Malawi Met Dept	Malawi	Meteorology	BSc	China	42064	18
228	I	Mr.	Veronique	MANOUAN		Cote d'Ivoire	Meteorology	BSc	China	42192	58.19
229	I	Ms.	Gaella B.	BITSOUMANI NGOUAYA	Congo Meteorological Service	Congo	Meteorology	MSc	Russian Federation	42213	22.87
230	I	Ms.	Fatoumata	SANGHO DIABATE		Mali	Meteorology	BSc	Russian Federation	42246	47.94
231	I	Mr.	Frederick	OTU-LARBI	Ghana Met Agency	Ghana	Meteorology	MSc	United Kingdom	42246	11.26
232	I	Mr.	Sylvestre	NTIBWUNGUKA	Burundi Meteorological Service	Burundi	Meteorology	MSc	Madagascar	42247	34.29
233	I	Mr.	Batebana	KPAIKPAI	Togo Meteoroligical Service	Togo	Meteorology	MSc	China	42247	23.97
234	I	Mr.	Faustin Katchele	OGOU	National Meteorological Service	Benin	Meteorology	MSc	China	42247	23.97
235	I	Mr.	Kumar Ram	DHURMEA		Mauritius	Meteorology	MSc	United Kingdom	42277	11.94
236	I	Mr.	Abdul Ganiu Adamu	JAKPA		Ghana	Hydrology	MSc	Netherlands	42308	25.97
237	I	Mr.	Joel S.	KANKO DEFOKE	Cameroon Meteorological Service	Cameroon	Meteorology	MSc	China	42323	26.45
238	I	Ms.	Belyse	NKANIRA	Burundi	Burundi	Meteorology	BSc	China	42338	62.94
239	I	Mr.	Floribert	VUGUZIGA	Rwanda Meteorological Service	Rwanda	Meteorology	MSc	China	42338	26.94
240	I	Mrs.	Mankondjou Diane	LAOUROU	National Meteorological Service	Benin	Meteorology	MSc	China	42338	26.94
241	I	Ms.	Chenai	SITHOLE	Zimbabwe Meteorological Department	Zimbabwe	Meteorology	Diploma	Kenya	42368	23.74
242	I	Mr.	Jean de Dieu	HABIMANA	Burundi Met Service	Burundi	Meteorology	Diploma	Kenya	42369	11.84
243	I	Mr.	Mohamed Yangbay	KAMARA	Met Office	Sierra Leone	Meteorology	Diploma	Kenya	42369	9.97
244	I	Mr.	Ezechiel	KAYOYA	Burundi Met Service	Burundi	Meteorology	Diploma	Kenya	42369	11.97
245	I	Mr.	Saidu Momoh	KAMARA	Meteorological Department	Sierra Leone	Meteorology	Diploma	Nigeria	42381	12.03
246	I	Mrs.	Voahanginiriana A.M.P	RAMIANDRISOA	Direction Generale de la Meteorologie	Madagascar	Climatology	MSc	Burkina Faso	42400	11.97
247	I	Ms.	Vimbai	MAMOMBE	Zimbabwe Meteorological Service	Zimbabwe	Meteorology	MSc	Korea, Republic of	42428	23.87
248	I	Ms.	Ntsioua Evelyn	PHAKISA	Lesotho Meteorological Service	Lesotho	Hydrology	MSc	Netherlands	42459	17.94

249	I	Mr.	Obed Amankwah	MINKAH	Ghana Met Agency	Ghana	Hydrology	BSc	Netherlands	42490	18.94
250	I	Mr.	Tlhoriso T.	MORIENYANE	Lesotho Meteorological Dept	Lesotho	Hydrology	MSc	Netherlands	42520	19.94
251	I	Ms.	Mookho	MONNAPULA	Lesotho meteorological Services	Lesotho	Meteorology	MSc	China	42551	21.94
252	I	Mr.	Dadja	TELOU TARO	Direction de la meteorologie nationale	Togo	Meteorology	MSc	China	42562	22.32
253	I	Mr.	Raphael Fustel Djaou	ZEKPETE	National Meteorological Service	Benin	Meteorology	MSc	China	42566	22.45
254	I	Mr.	Ibrahima Sory	DIALLO	Direction Nationale de la meteorologie	Guinea	Meteorology	MSc	China	42566	22.45
255	I	Mr.	Kantamla Biseke	MAFURU	Tanzania Meteorological Agency	Tanzania, United Republic of	Meteorology	MSc	China	42566	22.45
256	I	Miss.	Mahado	SALAH WAISS	Ministry of Tourism and Telecommunications, Service de la Meteorologie	Djibouti	Meteorology	MSc	China	42566	22.45
257	I	Mr.	Moven	MANJOWE	Zimbabwe Met Dept	Zimbabwe	Meteorology	MSc	China	42566	22.45
258	I	Mr.	Abdoulie	CEESAY	Department of Water Resources	Gambia	Meteorology	MSc	China	42581	58.94
259	I	Mr.	Carlos A.S.	MONIZ	Cape Verde Met Institute	Cape Verde	Meteorology	BSc	Portugal	42612	23.94
260	I	Ms.	Jacqueline	UWIMBABAZI	Rwanda Met Service	Rwanda	Meteorology	BSc	China	42613	71.97
261	I	Mr.	Jovial	GBA-GOMBO	Central African Meteorological Service	Central African Republic	Meteorology	BSc	China	42613	59.97
262	I	Mr.	Noel	BANDA	Malawi Meteorological Service	Malawi	Meteorology	BSc	China	42613	59.97
263	I	Ms.	Suelly Katiza	GONCALVES	Cape Verde Meteorological Service	Cape Verde	Meteorology	BSc	China	42613	59.97
264	I	Mr.	Andrew C.	GANYAU	Zimbabwe Meteorological Department	Zimbabwe	Meteorology	BSc	China	42613	59.97
265	I	Mr.	Armel S.	GNANSSOUNOU	National Meteorological Service	Benin	Meteorology	MSc	Algeria	42613	35.97
266	I	Ms.	Rosemary T.	MUSHI	Tanzania Met Agency	Tanzania, United Republic of	Meteorology	BSc	China	42613	35.97
267	I	Ms.	Djenebou	CAMARA	Direction Nationale de la Meteorologie	Mali	Meteorology	BSc	Algeria	42613	35.97
268	I	Mr.	Abdoul Aziz	BARRY	Meteorologie nationale	Guinea	Meteorology	BSc	Niger	42613	35.97
269	I	Mr.	Fulgence	N'GUESSAN	Direccion de la meteorologie nationale	Cote d'Ivoire	Meteorology	MSc	China	42613	23.97
270	I	Mr.	Tafadzwa	CHIVAURA	Zimbabwe Met Dept	Zimbabwe	Meteorology	MSc	United Kingdom	42634	12
271	I	Mr.	Simon	AGEET	Uganda Met Dept	Uganda	Meteorology	MSc	United Kingdom	42634	12
272	I	Mr.	Paul	UGBAH	Nigerian Meteorological Agency	Nigeria	Meteorology	MSc	United Kingdom	42634	12
273	I	Mr.	Kizito Amua	OUNDO	Kenya Meteorological Service	Kenya	Meteorology	MSc	United Kingdom	42634	12
274	I	Ms.	Sarah Wanjiku	KIMANI	Kenya Meteorological Department	Kenya	Meteorology	MSc	United Kingdom	42634	12
275	I	Ms.	Tunsume Gideon	MWAMBONEKE		Tanzania, United Republic of	Meteorology	MSc	United Kingdom	42634	12
276	I	Mr.	Faycal Aliou	MAIGA	Mali Meteorological Service	Mali	Meteorology	BSc	Algeria	42977	35.94
277	II	Mr.	Rustam	MAMEDOV	Administration of Hydrometeorology	Turkmenistan	Meteorology	Diploma	Russian Federation	38047	14
278	II	Mr.	Sultan	ROZYYEV	Administration of Hydrometeorology	Turkmenistan	Meteorology	Diploma	Russian Federation	38047	14
279	II	Mr.	Esen	SOPIYEV	Administration of Hydrometeorology	Turkmenistan	Meteorology	Diploma	Russian Federation	38047	14
280	II	Miss.	A.	WANG	Institute of Atmospheric Physics,	China	Meteorology	Certificate	Canada	38077	11.32
281	II	Ms.	Shaariibuu	GERELMAA	National Agency for Met., Hydro & Environment	Mongolia	Meteorology	MSc	Russian Federation	38168	28.94
282	II	Mr.	Ahmed	MUAZ	Department of Meteorology	Maldives	Meteorology	BSc	Australia	38344	57.71
283	II	Mr.	Ghulam	RASUL	Pakistan Meteorological Depatment	Pakistan	Meteorology	MSc	China	38352	35.97
284	II	Mr.	Basim	SALMAN	Bahrain Met. Service	Bahrain	Meteorology	BSc	Bahrain	38533	57.94

285	II	Mr.	Guvaneh	CHARYEV	Administration of Hydrometeorology	Turkmenistan	Meteorology	BSc	Russian Federation	38533	29.94
286	II	Mr.	Maksat	ROSYYEV	Administration of Hydrometeorology	Turkmenistan	Meteorology	BSc	Russian Federation	38533	45.94
287	II	Mr.	Amannazar	AMANOV	Administration of Hydrometeorology	Turkmenistan	Meteorology	BSc	Russian Federation	38533	29.94
288	II	Mr.	Ismtdjon Safaralievish	ERMATOV	Main Adm. Of Hydromet. & Monitoring of the Environment	Tajikistan	Meteorology	Diploma	Russian Federation	38768	40.61
289	II	Mr.	Anwar	YOUSIF	Bahrain Met. Service	Bahrain	Meteorology	BSc	Bahrain	38898	69.94
290	II	Mr.	Khalid	SAYED	Bahrain Met. Service	Bahrain	Meteorology	BSc	Bahrain	38898	69.94
291	II	Mr.	Muzaffar Hashvakhtshoevich	KHORKASHOV	Main Adm. Of Hydromet. & Monitoring of the Environment	Tajikistan	Meteorology	Diploma	Russian Federation	38898	53.94
292	II	Mrs.	Ramzia	KHUDOEROVA	Main Adm. of Hydromet. & Monitoring of the Environment	Tajikistan	Meteorology	Diploma	Russian Federation	38898	53.94
293	II	Mrs.	Zukhro Zhakhonovna	ZIJAEVA	Main Adm. Of Hydromet. & Monitoring of the Environment	Tajikistan	Meteorology	Diploma	Russian Federation	38898	53.94
294	II	Mr.	Juma	AL MASKARI		Oman	Meteorology	PhD	United Kingdom	38898	11.94
295	II	Mr.	Juma	AL-MASKARI	Department of Meteorology	Oman	Meteorology	PhD	United Kingdom	38898	11.94
296	II	Mr.	Gamal Hasan	AL-SAYES	Yemen Meteorological Service	Yemen	Meteorology	MSc	China	38898	11.94
297	II	Ms.	Zhannat	KUJIBAYEVA	KAZHYDROMET	Kazakhstan	Hydrology	Diploma	India	38914	12.03
298	II	Ms.	Marina	LYU	Ministry of Environmental Protection of the Rep. of Kazakhstan	Kazakhstan	Hydrology	Diploma	India	38914	12.03
299	II	Mr.	Begench	OVMADOV	Administration of Hydrometeorology	Turkmenistan	Meteorology	BSc	Russian Federation	38960	47.97
300	II	Ms.	Ganbat	GANTUYA		Mongolia	Meteorology	BSc	Russian Federation	38960	23.97
301	II	Mrs.	Khadeeja	NUSRA	Department of Meteorology	Maldives	Meteorology	Diploma	India	38973	9.97
302	II	Mr.	Sein	OO	Department of Meteorology and Hydrology	Myanmar	Meteorology	MSc	Philippines	39051	24.87
303	II	Mr.	Ajith	WIJEMANNAGE	Department of Meteorology	Sri Lanka	Meteorology	Diploma	Philippines	39051	24.87
304	II	Mr.	Tareq	MOHAMED	Bahrain Met. Service	Bahrain	Meteorology	BSc	Bahrain	39263	57.94
305	II	Mr.	Ahmed	ABDULLA	Bahrain Met. Service	Bahrain	Meteorology	BSc	Bahrain	39263	57.94
306	II	Mr.	A.	SHAFEEZ	Department of Meteorology	Maldives	Meteorology	MSc	India	39263	23.94
307	II	Ms.	Merjan	AYDOGDIYEVA		Turkmenistan	Meteorology	BSc	Russian Federation	39325	35.97
308	II	Mr.	A.G.M.M.	WIMALASURIYA	Department of Meteorology	Sri Lanka	Meteorology	Diploma	Australia	39432	10.45
309	II	Mr.	Ibrahim	NIYAZ	Department of Meteorology	Maldives	Meteorology	Certificate	India	39465	9.94
310	II	Mr.	Ahmed	INAAN	Department of Meteorology	Maldives	Meteorology	MSc	United Kingdom	39599	23.97
311	II	Ms.	Khin WIN	MAW	Department of Meteorology & Hydrology	Myanmar	Meteorology	MSc	Philippines	39994	24.58
312	II	Mr.	Myo	OO	Department of Meteorology & Hydrology	Myanmar	Hydrology	BSc	India	39994	23.45
313	II	Mr.	Jamyang	PHUNTSHOK	Ministry of Agriculture	Bhutan	Meteorology	MSc	Philippines	40117	28.61
314	II	Mr.	Narayan	GAUTAM	Department of Hydrology and Meteorology	Nepal	Hydrology	Diploma	India	40373	23.97
315	II	Ms.	Lai Lai	WINN	Department of Meteorology and Hydrology	Myanmar	Hydrology	Diploma	India	40379	23.97
316	II	Ms.	Thet	SU HLAING	Department of Meteorology and Hydrology	Myanmar	Meteorology	MSc	Philippines	40482	23.87
317	II	Mr.	Shuhrat	SALIMOV	Main Administration of Hydrometeorology & Monitoring	Tajikistan	Hydrology	Diploma	Russian Federation	40724	47.94
318	II	Mr.	Firdavs	MAVLYANOV	Main Administration of	Tajikistan	Hydrology	Diploma	Russian Federation	40724	47.94

					Hydrometeorology and Monitoring						
319	II	Ms.	Nilufar	SAKHIDODOVA	Main Administration of Hydrometeorology	Tajikistan	Climatology	Diploma	Russian Federation	40724	47.94
320	II	Mr.	Sonam	DORJI	Agromet Office	Bhutan	Meteorology	BSc	Russian Federation	40786	57
321	II	Ms.	Svetlana	EREMINA	The Centre of Hydrometeorological Service	Uzbekistan	Hydrology	MSc	Russian Federation	40786	23.97
322	II	Ms.	zin	MIE MIE SEIN	Department of Meteorology and Hydrology	Myanmar	Meteorology	MSc	Philippines	40877	24.77
323	II	Mr.	Kanda Durage	SUJEEWA	Department of Meteorology	Sri Lanka	Meteorology	MSc	Philippines	41066	23.97
324	II	Ms.	Ei Ei	SU MON	Department of Meteorology and Hydrology	Myanmar	Hydrology	Diploma	India	41104	23.97
325	II	Mr.	Faridun	AKHMEDOV	Main Administration of Hydrometeology	Tajikistan	Meteorology	Diploma	Russian Federation	41152	57.42
326	II	Ms.	Enkhzaya	ENKHTUVSHIN	National Agency for Met., Hydro & Environment Monitoring	Mongolia	Meteorology	MSc	Russian Federation	41152	35.97
327	II	Mr.	Galtbaatar	ADIYASUREN	National Agency for Met., Hydrology & Environment Monitoring	Mongolia	Meteorology	MSc	Russian Federation	41152	35.97
328	II	Mr.	Mohammad	MAHTAB	Meteorological Department	Bangladesh	Hydrology	MSc	Germany	41182	23.94
329	II	Mr.	Tayba B.	TAMANG	Bhutan Meteorological Service	Bhutan	Meteorology	MSc	United Kingdom	41182	11.94
330	II	Mr.	Mohammad Affindi	HAJI SABLI		Brunei Darussalam	Meteorology	Certificate	Philippines	41213	11.71
331	II	Ms.	Aye	AYE SOE	Myanmar Meteorological Department	Myanmar	Meteorology	MSc	Japan	41304	3.94
332	II	Ms.	Preethika M	JAYAKODY	Sri Lanka Meteorological Department	Sri Lanka	Meteorology	MSc	Philippines	41424	20.94
333	II	Ms.	Enkhzaya	ENKHTUVSHIN	National Agency for Met., Hydro & Environment Monitoring	Mongolia	Meteorology	MSc	Russian Federation	41516	35.94
334	II	Ms.	Dayang Norazila	AWANG BIMA		Malaysia	Meteorology	MSc	United Kingdom	41547	11.94
335	II	Ms.	Zarina	GAYSINA		Uzbekistan	Meteorology	MSc	Russian Federation	41603	26
336	II	Mr.	Majuwana K. M.	PERERA	Sri Lanka Meteorological Department	Sri Lanka	Meteorology	Diploma	India	41728	6.94
337	II	Mr.	Yerbolat	MUKANOV		Kazakhstan	Meteorology	MSc	China	41820	21.94
338	II	Ms.	Sayora	NAVJUVONOVA	State Organization of Hydrometeorology	Tajikistan	Meteorology	BSc	Russian Federation	41837	46.52
339	II	Mr.	Waseem Abdoulameer	MHAWESH	Iraqi Meteorological Organization	Iraq	Meteorology	MSc	Russian Federation	41848	34.87
340	II	Mr.	Saqib	HUSSAIN	Pakistan Meteorological Department	Pakistan	Hydrology	MSc	Russian Federation	41851	34.97
341	II	Mr.	Erkin Kubanychevich	ISAEV		Kyrgyzstan	Meteorology	Diploma	Russian Federation	41851	22.97
342	II	Mr.	Firuz	SAFAROV		Uzbekistan	Meteorology	MSc	Russian Federation	41851	22.97
343	II	Ms.	Ainur	ABENOVA		Kazakhstan	Meteorology	MSc	China	41882	23.97
344	II	Mr.	Klimentiy	VALIEV	The Centre of Hydrometeorological Service at Cabinet of	Uzbekistan	Hydrology	MSc	Germany	41912	23.94
345	II	Mr.	Pema	WANGDI	Council for Renewable Natural Resources Research	Bhutan	Meteorology	MSc	United Kingdom	41912	11.94
346	II	Ms.	Gayana Krishanthi	HENDAWITHARANA		Sri Lanka	Meteorology	MSc	Philippines	41949	23.97
347	II	Ms.	Gayana Krishanthi	HENDAWITHARANA		Sri Lanka	Meteorology	MSc	Philippines	42034	1.94
348	II	Ms.	Hang Thu	NGUYEN	Vietnam Met Service	Viet Nam	Meteorology	MSc	Korea, Republic of	42063	24.26
349	II	Ms.	Apinya	CHAILA		Thailand	Meteorology	MSc	China	42216	34.97
350	II	Ms.	Yin San	TAN	Malaysian Met Department	Malaysia	Meteorology	BSc	United Kingdom	42246	11.94

351	II	Ms.	Ainur	ABENOVA		Kazakhstan	Meteorology	PhD	China	42247	11.97
352	II	Mr.	Ari	KURNIADI	Indonesia Met Dept	Indonesia	Meteorology	MSc	United Kingdom	42277	11.94
353	II	Mr.	Foteh	RAKHIMOV	Tajikistan Meteorological Service	Tajikistan	Hydrology	BSc	Russian Federation	42278	49
354	II	Ms.	Zan	LAI MAW	Myanmar Meteorological Dept	Myanmar	Meteorology	MSc	Korea, Republic of	42428	23.87
355	II	Ms.	Wint Wint	MG	Department of Meteorology and Hydrology	Myanmar	Meteorology	MSc	China	42612	23.94
356	II	Mr.	Jessada	KOO-NGAMMAK	Thai Meteorological Department	Thailand	Meteorology	MSc	China	42612	23.94
357	II	Mr.	Orzu Boymahmadovich	ODINAEV	Tajikistan Met Service	Tajikistan	Meteorology	BSc	Uzbekistan	42612	23.94
358	II	Ms.	Prapaporn	WONGSAMING	Thai Meteorological Depart	Thailand	Meteorology	PhD	China	42613	35.97
359	II	Ms.	Yin Yin	SAN	Department of Meteorology and Hydrology	Myanmar	Hydrology	MSc	China	42613	35.97
360	II	Ms.	Shahina T.	SAFAMAMADOVA	Tajikistan Met Service	Tajikistan	Meteorology	BSc	Uzbekistan	42613	23.97
361	III	Mr.	Efrain C.	DOMINGUEZ	Ministerio del Medio Ambiente, Instituto de	Colombia	Hydrology	PhD	Russian Federation	38077	35.97
362	III	Mr.	Arturo	VARGAS	c/o Servicio Nacional de Meteorologia e Hidrologia	Bolivia, Plurinational State of	Meteorology	Diploma	Spain	38564	11.97
363	III	Ms.	Ruth	GUZMAN	Servicio Nacional de Meteorologia e Hidrologia	Bolivia, Plurinational State of	Meteorology	Diploma	Spain	38564	11.97
364	III	Mr.	Domingo German	GONZALEZ VERA	Direccion Nacional de Aeronautica Civil	Paraguay	Meteorology	Certificate	Spain	38564	11.97
365	III	Mr.	Rene	RODRIGUEZ	Direccion Nacional de Meteorologia	Uruguay	Meteorology	BSc	Spain	38567	24.03
366	III	Mr.	Gonzalo	ONTANEDA	National Institute of Meteorology and Hydrology	Ecuador	Climatology	MSc	Spain	38579	8.97
367	III	Ms.	Bhaleka Devi	SEULALL	Hydrometeorological Service	Guyana	Meteorology	MSc	United Kingdom	38625	11.94
368	III	Mrs.	Blanca	SOLIS GONZALEZ	Empresa de Transmision Electrica	Panama	Hydrology	Diploma	Costa Rica	39644	35
369	III	Mr.	Hugo Armando	SAAVEDRA		Colombia	Climatology	MSc	Spain	39659	8.94
370	III	Mr.	Garvin Rhandhir	CUMMINGS		Guyana	Hydrology	MSc	Barbados	40178.5	15.98
371	III	Mr.	Juan Sebastian	MELO VALENCIA		Colombia	Hydrology	BSc	Russian Federation	40451	12.94
372	III	Ms.	Nancy Laura	RIOS GAMARRA		Paraguay	Hydrology	Diploma	Brazil	40967	23.87
373	III	Ms.	Sandra Edith	MONGELOS		Paraguay	Hydrology	MSc	India	41104	23.97
374	III	Ms.	Ana Claudia	CALLAU PODUJE		Argentina	Hydrology	MSc	Germany	41182	23.94
375	III	Mr.	Luis Rogelio	POVEDA ZARUMA		Ecuador	Meteorology	MSc	Spain	41274	14.97
376	III	Ms.	Maria Mercedes	BUZZELLA		Argentina	Hydrology	MSc	Germany	41547	23.94
377	III	Mr.	Maxim	TRUJILLO YERIOMENKO		Bolivia, Plurinational State of	Hydrology	BSc	Russian Federation	41881	35.94
378	III	Mr.	Daniel Alejandro	VAZQUEZ BADO	Direccion de Meteorologia e Hidrologia	Paraguay	Hydrology	MSc	Netherlands	42094	18.97
379	III	Mr.	Komalchand	DHIRAM	Hydrometeorological Service	Guyana	Meteorology	MSc	China	42192	22.19

380	III	Mr.	Juan Sebastian	ACERO TRIANA	IDEAM	Colombia	Meteorology	MSc	Russian Federation	42225	23.26
381	III	Mr.	Daniel	VAZQUEZ	National Meteorological Institute	Paraguay	Meteorology	MSc	Netherlands	42308	25.97
382	III	Mr.	Maxim	TRUJILLO YERIOMENKO		Bolivia, Plurinational State of	Meteorology	MSc	Russian Federation	42613	23.97
383	III	Ms.	Ana Graciela	CORREA AMAYA		Colombia	Meteorology	BSc	Spain		
384	IV	Ms.	Francisca Elizabeth	WELLINGTON		Belize			Barbados	37918	18.52
385	IV	Mr.	Antonio	JOYETTE	Ministry of National Security	Saint Vincent and the Grenadines	Meteorology	Certificate	Barbados	38001	21
386	IV	Ms.	Melissa	MEADE	Wallblake Airport	Anguilla	Meteorology	Certificate	Barbados	38017	21.52
387	IV	Mr.	Maurice	MILLS	R.L. Bradshaw International Airport	Saint Kitts and Nevis	Meteorology	Certificate	Barbados	38017	21.52
388	IV	Mr.	Albert Simon	ALEXANDER	Meteorological Service Division	Trinidad and Tobago	Meteorology	BSc	Barbados	38138	19.97
389	IV	Mr.	Bryan	THOMAS	Meteorological Service Division	Trinidad and Tobago	Meteorology	BSc	Barbados	38138	19.97
390	IV	Mrs.	Carol	SUBRATH-ALI	Meteorological Service Division	Trinidad and Tobago	Meteorology	BSc	Barbados	38138	19.97
391	IV	Mr.	Akil Sele David	NANCOO	Meteorological Service Division	Trinidad and Tobago	Meteorology	BSc	Barbados	38138	19.97
392	IV	Mr.	Dario	RODRIGUEZ RANGEL		Mexico	Meteorology	Diploma	Costa Rica	38163	18.29
393	IV	Mr.	Jose Luis Ernesto	MONTOYA MURILLO	Servicio Meteorologico Nacional	Mexico	Meteorology	Diploma	Costa Rica	38163	18.29
394	IV	Mr.	Ciro	GONZALEZ PENA	Servicio Meteorologico Nacional	Mexico	Meteorology	Diploma	Costa Rica	38163	18.29
395	IV	Mr.	Dioricio Feo	CORDERO TOLEDO	Oficina Nacional de Meteorologia	Dominican Republic	Meteorology	Diploma	Costa Rica	38163	18.29
396	IV	Ms.	C.	PEREZ ALCANTARA	Oficina Nacional de Meteorologia	Dominican Republic	Meteorology	Diploma	Costa Rica	38163	18.29
397	IV	Ms.	Juana Altagracia	SILLE PUELLO	Oficina Nacional de Meteorologia	Dominican Republic	Meteorology	Diploma	Costa Rica	38163	18.29
398	IV	Mrs.	Elry Joanna	BONILLA VILLARREAL	ETESA	Panama	Hydrology	BSc	Russian Federation	38168	29.94
399	IV	Mr.	Lawrence	POLOGNE	Meteorological Service	Saint Lucia	Meteorology	MSc	United States	38563	18.94
400	IV	Ms.	Sidia	MARINERO TOVAR	Instituto Meteorologico Nacional	El Salvador	Meteorology	Diploma	Spain	38564	11.97
401	IV	Ms.	Lourdes Maria	HERNANDEZ	Servicio Nacional de Estudios Territoriales	El Salvador	Meteorology	Diploma	Spain	38564	11.97
402	IV	Mr.	Walter Alexander	FLORES VANEGAS	Servicio Nacional de Estudios Territoriales	El Salvador	Meteorology	Diploma	Spain	38564	11.97
403	IV	Mr.	Jorge	CISNEROS		Costa Rica	Meteorology	PhD	Mexico	38579	11.97
404	IV	Mr.	Jeffrey Elleson	SPOONER	Meteorological Services	Jamaica	Meteorology	MSc	United Kingdom	38625	11.94
405	IV	Ms.	Andrea Michelle	SEALY	Howard University	Barbados	Meteorology	PhD	United States	38625	23.94
406	IV	Mr.	Dale	DESTIN	Meteorological Service	Antigua and Barbuda	Meteorology	Certificate	Barbados	38849	31.94
407	IV	Mr.	John	PETERS	Meteorological Office	Grenada	Meteorology	BSc	Barbados	38960	11.84
408	IV	Mr.	Orson Mcnair	NIXON	Department of Meteorology	Bahamas	Meteorology	MSc	Barbados	39021	13.97
409	IV	Mrs.	Gabriela	MORA ROJAS	Centro de Invertigaciones Geofisicas	Costa Rica	Meteorology	PhD	United States	39099	23.97
410	IV	Ms.	Michelle	SMITH		Belize	Meteorology	Certificate	Barbados	39199	7.84
411	IV	Mr.	Ellington	CAYETANO	National Meteorological Service	Belize	Hydrology	Diploma	Barbados	39199	7.84

412	IV	Mr.	Ronald	GORDON	National Meteorological Service	Belize	Meteorology	Diploma	Barbados	39276	18
413	IV	Mr.	Lorne	SALMON	Meteorological Service	Antigua and Barbuda	Hydrology	BSc	United Kingdom	39324	11.94
414	IV	Mr.	Luis Alberto	GARCIA GUIROLA	Servicio Nacional de Estudios Territoriales	El Salvador	Hydrology	MSc	Costa Rica	39644	35
415	IV	Mr.	George	BRAITHWAITE	Meteorological Office	Antigua and Barbuda	Meteorology	MSc	Barbados	39802	22.16
416	IV	Mr.	Damion	MORRIS		Jamaica	Hydrology	Diploma	Barbados	39913	7.39
417	IV	Ms.	Janelle	MCPHERSON-GARRAWAY		Dominica	Meteorology	Diploma	Barbados	39913	7.39
418	IV	Mr.	Webster Michel	GAJADHAR	Ministry of Communications	Saint Lucia	Meteorology	Certificate	Barbados	40004	17.35
419	IV	Mr.	Kerry Davis	POWERY	BCT Forecast Office in the Cayman Islands	Cayman Islands	Meteorology	BSc	Barbados	40055	35.94
420	IV	Mr.	Avalon	PORTER	Cayman Islands Airports Authority	Cayman Islands	Meteorology	BSc	Barbados	40404	35.97
421	IV	Mr.	Roberto Adolfo	CERON PINEDA	Servicio Nacional de Estudios Territoriales	El Salvador	Hydrology	MSc	Costa Rica	40407	23.97
422	IV	Mr.	Anthony Claret	BRICE?O		Belize	Meteorology	Certificate	Barbados	40641	7.39
423	IV	Mr.	Ronald	MOODY		Jamaica	Meteorology	BSc	Barbados	40785	35.94
424	IV	Mr.	Elmo	BURKE		Saint Kitts and Nevis	Meteorology	BSc	Barbados	40786	11.97
425	IV	Mr.	Waldo	COLAS		Haiti	Meteorology	Diploma	France	40816	13.16
426	IV	Mr.	Emmanuel	ETIENNE		Haiti	Meteorology	Diploma	France	40816	13.16
427	IV	Mrs.	Nicole	FRANCOIS		Haiti	Meteorology	Diploma	France	40816	13.16
428	IV	Mr.	Jeantau	LOUIS		Haiti	Meteorology	Diploma	France	40816	13.16
429	IV	Mr.	Wilner	POLYDOR		Haiti	Meteorology	Diploma	France	40816	13.16
430	IV	Mr.	Christopher	SAWYERS		Jamaica	Hydrology	Diploma	Barbados	41024	7.97
431	IV	Ms.	Shayvonne	MOXEY-BONAMY	Department of Meteorology	Bahamas	Meteorology	BSc	United States	41152	48.16
432	IV	Mrs.	Lavern Shezelle	MATHER		Bahamas	Meteorology	BSc	United States	41152	23.97
433	IV	Ms.	Irma Esperanza	AYES RIVERA		Honduras	Hydrology	MSc	Germany	41182	23.94
434	IV	Mr.	Kenneth A.	KERR		Trinidad and Tobago	Meteorology	MSc	United Kingdom	41182	11.94
435	IV	Mr.	Ramone	MCPHERSON		Jamaica	Hydrology	Diploma	Barbados	41387	7.97
436	IV	Ms.	Avlon	CHARLERY		Saint Lucia	Meteorology	Certificate	Barbados	41455	17.77
437	IV	Mr.	Glenn	ANTOINE		Saint Lucia	Meteorology	Certificate	Barbados	41460	17.87
438	IV	Ms.	Kaylinda Michelle	FORBES		Bahamas	Meteorology	Certificate	Barbados	41460	14.42
439	IV	Miss.	Tammie	FORD		Antigua and Barbuda	Meteorology	MSc	United Kingdom	41547	11.94
440	IV	Mr.	Patrick	BARRETT		Jamaica	Meteorology	BSc	Barbados	41881	35.94
441	IV	Ms.	Francisca Elizabeth	WELLINGTON		Belize	Meteorology	BSc	Barbados	41882	35.97
442	IV	Mr.	Kaidar	KISSOON	Meteorological Services Division	Trinidad and Tobago	Meteorology	MSc	United Kingdom	41882	11.97
443	IV	Ms.	Michelle	SMITH		Belize	Meteorology	BSc	Barbados	42035	26.97
444	IV	Miss.	Shanea	YOUNG	National Meteorological Service	Belize	Meteorology	BSc	Barbados	42035	26.97
445	IV	Mrs.	Carolin	HUGUENIN AMADOR	National Meteorological Institute	Costa Rica	Hydrology	MSc	Netherlands	42094	18.97
446	IV	Mr.	Shane	EVANS		Jamaica	Hydrology	Diploma	Barbados	42148	8.9
447	IV	Mr.	Anthony Claret	BRICE?O		Belize	Meteorology	Diploma	Barbados	42195	18

448	IV	Mr.	Ellington	CAYETANO	National Meteorological Service	Belize	Hydrology	Diploma	Barbados	42195	18
449	IV	Mr.	Patrice	EDWARDS		Antigua and Barbuda	Meteorology	BSc	Barbados	42246	23.94
450	IV	Mr.	Carlos Fernando	DIAZ FLORES	Servicio Meteorologico Nacional	Honduras	Hydrology	MSc	China	42613	35.97
451	IV	Ms.	Joni Diane	VELASQUEZ	Belize Met. Dept	Belize	Hydrology	MSc	Germany	42643	23.94
452	IV	Mr.	Rafael Antonio	CABRERA		Dominican Republic	Meteorology	Certificate	Spain		
453	V	Mr.	Kasis	INAPE	PNG National Weather Service	Papua New Guinea	Meteorology	Diploma	Australia	38338	10.48
454	V	Mr.	Amit Avikash	SINGH	Fiji Meteorological Service	Fiji	Meteorology	Diploma	Australia	39432	10.45
455	V	Mr.	David	HIRIASIA	Solomon Islands Meteorological Service	Solomon Islands	Meteorology	Diploma	Australia	39432	10.45
456	V	Mr.	Hudson	KAUHIONA	Solomon Islands Meteorological Service	Solomon Islands	Meteorology	Diploma	Australia	39432	10.45
457	V	Mr.	Katanute	TUEVI	Kiribati Meteorological Services	Kiribati	Meteorology	Certificate	Philippines	39447	6.97
458	V	Mr.	Tareti	KIREUA	Kiribati Meteorological Services	Kiribati	Meteorology	Certificate	Philippines	39447	6.97
459	V	Mr.	Fred R.	JOCKLEY (YAKENIAU)	Vanuatu Meteorological Service	Vanuatu	Meteorology	Diploma	India	39700	11.97
460	V	Mr.	Jeremiah	MALAIBE	Papua New Guinea	Papua New Guinea	Meteorology	Diploma	India	40063	11.97
461	V	Ms.	Moirah	MATOU	Vanuatu Meteorological Service	Vanuatu	Meteorology	Diploma	Australia	40161	10.23
462	V	Mr.	Sanjay	PRAKASH	Fiji Meteorological Service	Fiji	Meteorology	Diploma	Australia	40178	10.94
463	V	Ms.	Aditi	SHARAN	Fiji Meteorological Service	Fiji	Meteorology	Diploma	Australia	40528	10.48
464	V	Mr.	Rajneel Suvendra	PRASAD	Fiji Meteorological Service	Fiji	Meteorology	Diploma	Australia	40908	10.94
465	V	Mr.	Wilson	SAEGA		Solomon Islands	Meteorology	Certificate	Barbados	41029	7.94
466	V	Mr.	Vaaua	WILSON	Ministry of National Resoures Environment and Meteorology	Samoa	Meteorology	Certificate	Barbados	41029	7.94
467	V	Mr.	Williams Bae	WORWOR	Vanuatu Meteorological Service	Vanuatu	Meteorology	Certificate	Barbados	41029	7.94
468	V	Mr.	Konny	NATO		Papua New Guinea	Meteorology	Certificate	Barbados	41029	7.94
469	V	Mr.	Ueneta	TOORUA	Ministry of Communication, Transport and Tourism Development	Kiribati	Meteorology	Diploma	Philippines	41060	23.61
470	V	Mr.	Ueneta	TOORUA	Ministry of Communication, Transport and Tourism Development	Kiribati	Meteorology	Diploma	Philippines	41060	23.81
471	V	Mr.	Tom	IARIS	Vanuatu Meteorological Service	Vanuatu	Meteorology	BSc	Philippines	41213	11.71
472	V	Mr.	Tom	IARIS	Vanuatu Meteorological Service	Vanuatu	Meteorology	Certificate	Philippines	41213	28.97
473	V	Ms.	Katrina E.	MARINER	Samoa Water Resource Division	Samoa	Meteorology	MSc	Germany	41547	23.94
474	V	Mr.	Luteru	TAUVALE	Ministry of Foreign Affairs and Trade	Samoa	Meteorology	MSc	United Kingdom	41547	11.94
475	V	Mr.	Jeremiah	MALAIBE	Papua New Guinea	Papua New Guinea	Meteorology	MSc	United Kingdom	41547	11.94
476	V	Mr.	Silipa Art	MULITALO		Samoa	Meteorology	Diploma	Australia	41611	11.06
477	V	Ms.	Kisolel Lina	POSANAU	National Weather Service	Papua New Guinea	Meteorology	Others (Specify)	Japan	41670	6.97
478	V	Mr.	Ruben	WAMUNI	PNG Weather Service	Papua New Guinea	Hydrology	MSc	Philippines	41820	11.94
479	V	Mr.	Paula S.	TAWAKECE	Fij i Meteorological Service	Fiji	Hydrology	Diploma	Philippines	41820	12.94
480	V	Mr.	Robert	ANITA		Solomon Islands	Meteorology	Diploma	India	41881	11.94
481	V	Mr.	Jerry	TIMOTHY NATUGOGONA	PAGASA	Vanuatu	Meteorology	Diploma	Australia	41971	10.48
482	V	Ms.	Linda	TONAWANE		Solomon Islands	Meteorology	Diploma	Australia	41985	10.74
483	V	Mr.	Percy	HARUKU		Papua New Guinea	Meteorology	MSc	China	42247	23.97
484	V	Ms.	Ellen Esbel	LUKE	Vanuatu Meteorological Service	Vanuatu	Meteorology	Diploma	Australia	42314	9.32
485	V	Ms.	Ashwini Akiriti	SHARMA		Fiji	Meteorology	MSc	India	42622	12

486	V	Mr.	Levu Boaz	ANTFALO	Vanuatu Met Dept	Vanuatu	Meteorology	Certificate	Philippines	42643	11.32
487	V	Mr.	Samit Sanjesh	PRASAD		Fiji	Meteorology	Certificate	Philippines	42643	11.32
488	V	Mr.	Iosefo Sidney	CAURAVOUVINAKA		Fiji	Meteorology	Certificate	Philippines	42643	11.32
489	V	Mr.	Gary Phillip Buelow	VITE		Tonga	Meteorology	Certificate	Philippines	42643	11.32
490	VI	Mr.	Khalil Alrahman Ahmed Khalil	ATWA	Palestine Authority (Palestinian refugee)	Jordan	Meteorology	MSc	Russian Federation	38168	80.94
491	VI	Mr.	Aayed Ismail	MOHANNA	Palestinian Authority (Palenstinian refugee)	Palestinian Territory, Occupied	Meteorology	MSc	Russian Federation	38168	81.48
492	VI	Mr.	Rami Abdel-Malek	AL-TALOULI	Palestinian Authority (Palestinian refugee)	Palestinian Territory, Occupied	Meteorology	MSc	Russian Federation	38168	20.94
493	VI	Mr.	Ihab	MIKKY	Palestinian Authority	Palestinian Territory, Occupied	Meteorology	MSc	Russian Federation	38168	81.48
494	VI	Mr.	Akram A	ZAQOUT	Palestinian Authority (Palestinian refugee9	Palestinian Territory, Occupied	Meteorology	PhD	Russian Federation	38533	80.77
495	VI	Mr.	Hassan A. Al-Hameed	ISLEEM	Palestinian Authority (Palestinian refugee)	Palestinian Territory, Occupied	Meteorology	MSc	Russian Federation	38717	86.16
496	VI	Mr.	Yousef Ahmad Khalil	ATWAH		Jordan	Meteorology	BSc	Russian Federation	38749	53
497	VI	Mr.	Ibrahim Khalil	MOUSTAFA	Meteorological Departmet (Syria)	Syrian Arab Republic	Meteorology	PhD	Romania	38837	11.94
498	VI	Mr.	Kaniaha Nihmei	SALESA	Vanuatu Meteorological Services	Vanuatu	Meteorology	MSc	Philippines	39051	24.87
499	VI	Mr.	Mahmoud	MAETAH	Syrian Arab Republic	Syrian Arab Republic	Meteorology	PhD	Russian Federation	39325	23.97
500	VI	Ms.	Claudia	CONTRERAS TRUJILLO		Spain	Meteorology	PhD	Spain	39442	35.32
501	VI	Ms.	Indre	GECAITE		Lithuania	Meteorology	MSc	Russian Federation	40968	5.9
502	VI	Mr.	Sabir	IMANOV		Azerbaijan	Hydrology	BSc	Russian Federation	41090	33.94
503	VI	Ms.	Anna Ivanova	GOVEDARSKA		Bulgaria	Hydrology	MSc	Germany	41182	23.94
504	VI	Mr.	Maccarios Samuelu	AUVAE	Samoa Meteorological Division	Samoa	Meteorology	Certificate	Philippines	41183	10.74
505	VI	Mr.	Ueneta	TOORUA	Ministry of Communication, Transport and Tourism Development	Kiribati	Meteorology	Certificate	Philippines	41183	10.74
506	VI	Mr.	Enver	ERBAS		Turkey	Meteorology	MSc	Russian Federation	41517	35.97
507	VI	Mr.	Oleg	STRISCENCO	State Hydrometeorological Service	Moldova, Republic of	Hydrology	MSc	Russian Federation	41517	23.97
508	VI	Ms.	Elina	PLESCA	Moldova Met Service	Moldova, Republic of	Meteorology	MSc	United Kingdom	41912	11.94
509	VI	Ms.	Volha V.	BAIDUK	Belarus Met Service	Belarus	Hydrology	MSc	Russian Federation	42185	21.94
510	VI	Mr.	Javidan Rahim	ALIYEV	Azerbaijan Meteorological Service	Azerbaijan	Meteorology	MSc	Russian Federation	42200	10.45

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