



WORLD  
METEOROLOGICAL  
ORGANIZATION

Ref.: 05148/2021-1.0 CSG/ME

WEATHER CLIMATE WATER

# Impact Evaluation of the WMO Fellowships Programme

ETR-23







WORLD  
METEOROLOGICAL  
ORGANIZATION

# Impact Evaluation of the WMO Fellowships Programme

March 2019

ETR-23

ETR-23

© **World Meteorological Organization, 2019**

The right of publication in print, electronic and any other form and in any language is reserved by WMO. Short extracts from WMO publications may be reproduced without authorization, provided that the complete source is clearly indicated. Editorial correspondence and requests to publish, reproduce or translate this publication in part or in whole should be addressed to:

Chair, Publications Board  
World Meteorological Organization (WMO)  
7 bis, avenue de la Paix  
P.O. Box 2300  
CH-1211 Geneva 2, Switzerland

Tel.: +41 (0) 22 730 84 03  
Fax: +41 (0) 22 730 80 40  
Email: [Publications@wmo.int](mailto:Publications@wmo.int)

NOTE

The designations employed in WMO publications and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of WMO concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The mention of specific companies or products does not imply that they are endorsed or recommended by WMO in preference to others of a similar nature which are not mentioned or advertised.

The findings, interpretations and conclusions expressed in WMO publications with named authors are those of the authors alone and do not necessarily reflect those of WMO or its Members.

This publication has been issued without formal editing.

## ACKNOWLEDGEMENTS

This report was prepared by Mr Momadou Saho of The Gambia, with the support of the following:

- (a) Members of the WMO Executive Council Panel of Experts on Education and Training:
    - Ms Stella Aura, Kenya Meteorological Department
    - Dr David Farrell, Caribbean Institute for Meteorology and Hydrology, Bridgetown, Barbados
    - Mr Didier Reboux, Ecole nationale de la météorologie (ENM), Toulouse, France
  - (b) National Weather Service Training Centre, Kansas City, United States of America:
    - Dr James H. Poole
  - (c) Department of Meteorology, University of Reading, England:
    - Dr Christine Chui
  - (d) WMO Secretariat:
    - Dr Yinka Adebayo
    - Mr Mustafa Adiguzel
    - Dr Assia Alexieva
    - Ms Hong Fan
    - Mr Federico Galati
    - Ms Elizabeth Gacuca
    - Ms Catherine Thompson
-

## EXECUTIVE SUMMARY

The WMO Fellowship Programme plays a key role in the attainment of the Organization's capacity development goals. Much has been done by the programme over several decades for the capacity building of NMHSs in developing countries, particularly in Least Developed Countries (LDCs) and Small Island Developing States (SIDS), but the demand for training is never-ending and revolves around the emerging dynamic issues relating to science, technology, human and societal needs. An evaluation was therefore carried out to review the performance of the programme, particularly its impact on and benefit to the Members and on how it can be delivered 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 is described, outlining how it all began, its evolution and its relevance to the United Nations System to date. The implementation of the programme during the period under consideration (2005–2015) is analysed highlighting its achievements and setbacks as well as any measures taken to address the setbacks. The analysis shows that considerable effort has been made to set the programme on the right footing through decisions, measures and regular internal and external evaluations. Implementation of these decisions has resulted in a much-improved programme during the period under consideration, taking into account that most of the recommendations made by internal and external auditors have been partially or fully implemented.

**Part B** of the report deals with the Impact Evaluation of the Fellowship Programme taking into consideration the following main criteria:

- effectiveness
- impact
- relevance
- sustainability

On the whole, the Fellowship Programme has been 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 in order to improve service delivery at the national, regional and international levels. The fellowship delivery covered all six geographical regions of WMO, with RA I showing the greatest need for fellowships followed by RA II. RA VI showed the lowest. The demand-supply breakdown (how many of the fellowships requested were actually awarded) showed that RA II was the highest with RA I the lowest. A comparison of the overall number of fellowships awarded and completed showed a high completion rate with only 0.3% listed as failed and 0.9% listed as withdrawn. Indeed the effectiveness of the Fellowship Programme was also attributed to the important role played by partners in its development and in the WMO Regional Training Centres and other training institutions. It is recommended that the collaboration and interaction between these institutions and the WMO Education and Training Department should be further strengthened taking into account the increased emphasis on online and blended learning to make the delivery of the programme more effective.

The impact of the Fellowship Programme at the individual fellow level and at national, regional and global levels has been positive. The programme has helped fellows to increase their scientific and technical knowledge base, enhance their job performance and productivity, produce high quality work and demonstrate improved expertise in research and publications. The Fellowship Programme has led to job promotions with greater responsibilities for some fellows and has increased the value of operations of the NMHSs thereby greatly enhancing their positive image and visibility. At regional and global levels, the impact of the programme was also very positive. Several fellows networked with relevant partners/activities and participated in international events such as WMO Constituent bodies, the European Commission's expert working groups and other events organized by IPCC and COP. Despite the positive impact reported, more effort is required by Members regarding the monitoring and reporting of post-fellowship activities especially the regular submission of the fellows' 18-month Impact Report by the PR. It is recommended therefore that the decision taken by the Executive Council (EC) on this matter should be fully enforced by ETCOM.

The relevance of the programme, particularly in terms of its objectives, has been established by the evaluation. Most of the respondents to the questionnaire agreed strongly with its objectives. None disagreed. The programme supports gender equality, which is high on the list of EC criteria for awarding WMO fellowships. The performance of the programme in the area of gender equality, during the period under consideration, has surpassed the target of 30% set by the UN Entity for Gender Equality and Empowerment of Women. The programme is more and more compatible with growing societal and environmental trends and has had to deal with new demands relating to climate change, disaster risk reduction and other scientific and technical issues. The relevance of the Fellowship Programme to the Members is evident through the growing demand from those Members. In this regard, it is recommended that extra funding - budgetary or extrabudgetary - should be sought in order to continue helping developing countries meet some of these demands.

With respect to sustainability, several measures have been taken by the NMHSs as part of their strategy to increase capacity and develop their services. Factors such as staff motivation upon a fellows return to his/her country, career development, knowledge transfer and a conducive working environment will impact the sustainability of the programme. Other factors such as the quality of some of the training provided, the language barrier experienced by some Members and the high cost of training in some centres could impact negatively on the programme in the future. In order to go some way towards addressing the high costs associated with long-term training, it is recommended that the cost-sharing and cost-management measures already introduced into the programme be further enforced and that in-country training using expertise from more developed countries be encouraged where appropriate. The achievements of the Fellowship Programme to date should be highlighted in a framework for a sustainable strategy of the Fellowship Programme to be developed in the future.

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

---

## CONTENTS

	<i>Page</i>
<b>Acknowledgements .....</b>	<b>i</b>
<b>Executive Summary .....</b>	<b>ii</b>
<b>Foreword .....</b>	<b>v</b>
<b>PART A SITUATION ANALYSIS .....</b>	<b>1</b>
1. Introduction .....	1
2. Background, Objectives, Scope, Methodology and Limitations .....	2
3. History of the WMO Fellowship Programme and its relevance to the UN System .....	5
4. Modalities for implementation of the WMO Fellowship Programme .....	9
<b>PART B EVALUATION OF THE FELLOWSHIP PROGRAMME .....</b>	<b>15</b>
1. Effectiveness of the WMO Fellowship Programme .....	16
2. Impact of the Fellowship Programme .....	23
3. Relevance of the Fellowship Programme .....	27
4. Sustainability of the WMO Fellowship Programme .....	31
<b>PART C CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>33</b>
1. Conclusions .....	33
2. Recommendations .....	35
Annexes .....	38



## FOREWORD

It is my pleasure to introduce readers to this report entitled "Impact Evaluation of the WMO Fellowship Programme" which has been prepared in response to Decision 67 of the Sixty-eighth Session of the WMO Executive Council (EC). The evaluation was undertaken in cooperation with the EC Panel of Experts on Education and Training.

The report contains far-reaching conclusions and recommendations which undoubtedly require concrete action regarding the capacity development of national meteorological and hydrological services. For example, gender equality, language barriers, the condition of education and training facilities, and the high cost of education and training are issues that should be considered prior to the development of any meaningful policy and associated programmatic response. Partly inspired by this report, therefore, the Secretariat has taken substantial steps in the formulation and delivery of an appropriate policy with a commensurate strategy. Consequently, the Education and Training Committee was established in 2017 to bring about greater efficiencies in the Education and Training Office by bringing the activities of the Fellowship Division and those of the Training Division under one coordination mechanism, thus enabling all training needs and deliveries to be handled through a common frame of reference.

With an improved interdepartmental coordinating mechanism, we have been visibly successful in pulling resources together to address emerging needs from a much more holistic Secretariat perspective than hitherto. Significant steps have been taken to re-jig the programme implementation strategy through a reinforced support to, and cooperation with, the WMO Regional Training Centres, as well as working in tandem with partners in the network of other national and international training providers within the framework of the WMO Global Campus initiative.

The demand for training is never-ending as it revolves around the dynamic issues relating to developments in science and technology, human and societal needs. Considering the fact that most career staff of NMHSs are expected to work for at least three decades, there is no doubt that WMO will play an increasingly critical role in ensuring that these individuals are adequately skilled to deal with a great variety of contemporary and prospective operational, research and management challenges. Notwithstanding achievements made thus far, the task remains daunting as there will always be a lot to do, and with fewer resources. Efforts should, therefore, be directed towards making considerable changes in the way we do business.

By constantly building on our achievements, the Secretariat will remain equipped to respond to the recurrent and evolving challenges involved in developing capacity in the multi-faceted field of human resources. I have no doubt that with the unwavering cooperation and commitment of Members, WMO will continue to deal with future challenges - anticipated and unforeseen - that lie ahead as we endeavour to ensure that education and training activities meet the required objectives for the benefit of society.



(Prof. Petteri Taalas)  
Secretary-General

## **PART A. SITUATION ANALYSIS**

### **1. INTRODUCTION**

An "Impact Evaluation of the Fellowship Programme" was carried out between 1 December 2016 and 31 March 2017. The evaluation was carried out following a decision taken during 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 dates back to the 1960s, outlines the progress made from a time when many countries in the developing world were just gaining independence and had little opportunity to train their personnel in the National Meteorological and Hydrological Services (NMHSs) to now, when most of the NMHSs operate on a daily basis with skilled and competent staff. These entities, particularly those in the Least Developed Countries (LDCs) and Small Island Developing States (SIDS) are now delivering much-needed services and contributing to the growth and socioeconomic development of their nations thanks to several factors including assistance provided by WMO through its Education and Training Programme (ETRP) and, in particular, via the Fellowship Programme.

In order to address various challenges encountered by the programme, a fellowship awarding process guaranteeing fairness, transparency, effectiveness and efficiency as well as geographical distribution and gender equality was established. Several landmark decisions and recommendations were made during and after 2004 which brought about constructive and lasting changes in the implementation of the programme thereby addressing the ever-increasing demands for training by Members. It has now been more than a decade since concerted efforts were made by WMO and its partners to strengthen the foundations of the programme thereby helping it to cope with changing science- and technology-led needs of requesting countries.

The evaluation process covered the period 2005 to 2015 and used information available from sources including the WMO Fellowship Database, questionnaires sent to selected WMO Member countries in February 2017 and the ETR Human Resources Survey that was carried out in early 2017.

The following criteria formed the basis for the analysis:

- Effectiveness
- Impact
- Relevance
- Sustainability

The Fellowship Programme has been found to be very effective for the beneficiary Member countries as well as on regional and global levels. It was also shown that the programme and its objectives are still relevant to Members and contribute significantly to the fulfilment of the WMO mandate. 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 is one of the main components of the Education and Training Department (ETR), established in 1961<sup>1</sup>, in response to an urgent request by Members in developing and Least Developed Countries (LDC) for training for meteorological staff. It began, with the support of UNDP, with short courses in aviation meteorology. But, as the demand from Member countries in Africa, Central and South America for well-trained and skilled personnel 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 had grown in popularity with the availability of new funding for long-term fellowships such as those made available through the new Voluntary Assistance Programme (VAP) in addition to the United Nations Development Programme (UNDP). When the UNDP arrangement ended, the Fifth World Meteorological Organization (WMO) Congress (Cg-5) decided, in 1967, 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 for 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 made a concentrated effort to reach out to new partners.

While the programme is implemented through the ETR in DRA, it constitutes an integral part of capacity-development element of each WMO scientific programme. Since its inception some 50 years ago, the programme has assisted countless National Meteorological and Hydrological Services (NMHSs) of WMO Member countries, providing them with experts who play key roles in the fields of weather, climate and water. An effective coordination of the selection process of fellows and of the Fellowship Programme as a whole was ensured through the now defunct WMO Fellowship Committee (FELCOM), established in 2004, and which comprised 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 for many Members and its contribution to the wider WMO Capacity Development Programme, decided that an impact evaluation of the programme should be undertaken. This evaluation is therefore a fulfilment of that 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-à-vis the mandate of WMO in the area of education and training with a view to identifying areas where its Fellowship Programme activities are expected to make an impact; (ii) to identify any benefits gained by the Members through fellowships,

---

<sup>1</sup> Sir Arthur Davies, "FORTY YEARS OF PROGRESS AND ACHIEVEMENT, A Historical Review of WMO"

in order to strengthen the case for an enhanced delivery of the WMO Fellowship Programme; and (iii) to seek increased fellowship opportunities with NMHSs in WMO Member States in order to improve their operations and contributions to current and future national development needs.

### **(c) Scope and limitations**

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 audits of the programme that were 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**

The WMO 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 and the questions to be covered, as well as sources of information and information-gathering methods for each issue. The stakeholders consulted for the purposes of the evaluation included WMO Members; the WMO Secretariat (ETCOM and technical programmes contributing to or having linkages with the ETR); Governance (members of the EC Panel on Education and Training) and ETR partners in the UK, USA and France. Copies of the questionnaires are attached in Annex III (a) and Annex III (b).

#### **(iii) Data Collection**

Data collection methods included a 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 Ivory Coast, the 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 developed, for the most part, countries and the main evaluation questionnaire (2) that was sent electronically with a letter from the Secretary-General to 46

developing countries spread over six WMO regions. The deadline for response to the electronic questionnaire was 24 February 2017. A copy of the letter is attached in Annex IV.

Although the main target group for the survey was developing countries, the short questionnaire (1) was destined mainly for those developed countries that had contributed significantly to the programme and, as important partners, their views and opinions on the programme were considered useful.

For the main evaluation questionnaire (2), 46 countries were selected, bearing in mind that ETR had conducted a survey on human resources in 2016 just before the beginning of the impact evaluation and, as Members has expressed a certain fatigue regarding the many questionnaires being sent to them by WMO, it was decided to focus the evaluation on a selected number of developing countries that were active or had benefited most from the programme. Copies of the questionnaires and the list of selected countries for both questionnaires are provided in Annex III and Annex VIII .

#### **(iv) Data Analysis and Reporting**

The data and information collected from multiple sources were analysed and a report corresponding to the evaluation's terms of reference and highlighting the principal findings of the evaluation was produced. 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 and is considered to be one of the most effective platforms used for helping to enhance the capability and efficiency of National Meteorological and Hydrological Services (NMHSs). 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 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 the responsibilities of meteorological services grew in scope.

In 1960, the twelfth Session of the Executive Council noted that demands for WMO's support in the sectors of education and training were growing and were already exceeding the resources of the WMO Secretariat. The Council, giving special attention to 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 EC decisions, taken as a result of an in-depth study and ensuing

discussions, provided the foundations of the WMO Education and Training Programme that is still active today.

The ETRP was therefore established in response to an urgent need by Members to train staff of the NMHSs in developing and LDCs as well as countries with economies in transition and to assist in coordinating the international aspects of such training. It helps identify personnel specially educated and trained to internationally agreed standards who can 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 a 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), 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 Fellowship Programme**

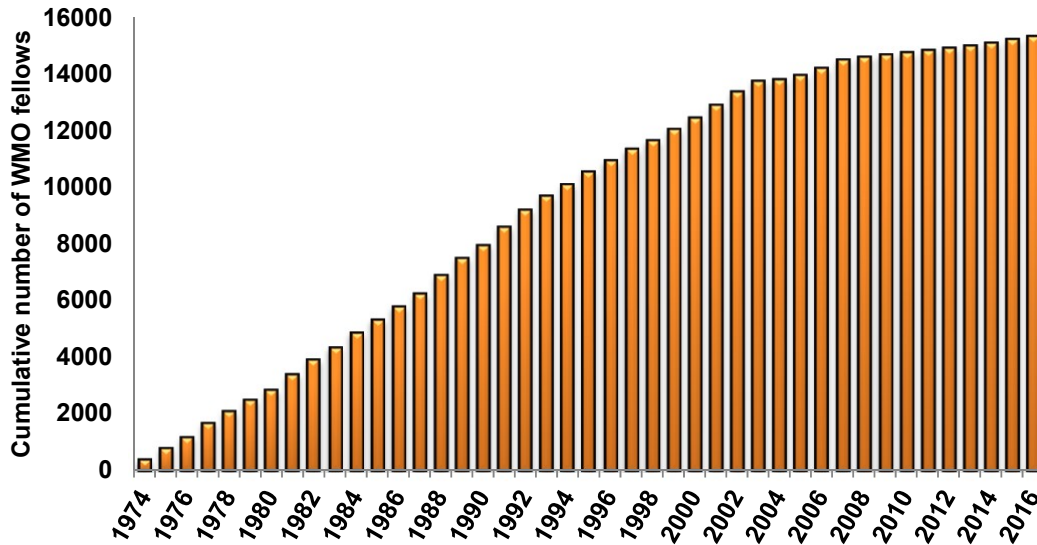
Human resources development is a basic necessity for the technological and socio-economic advancement of any nation. According to Sir Arthur Davies, the need for trained and skilled personnel for the newly independent developing countries at the beginning of the 1960s was evident. Funds were made available 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 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 of 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 was 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 Nairobi, Kenya. 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. 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.

Ref.: 05148/2021-1.0 CSG/ME



**Figure 1. Cumulative number of fellows trained between 1974 and 2016**

**Figure 1.** Above is an update of an ETR presentation<sup>2</sup> taken from the Fellman database. It shows that thousands of experts have been trained as meteorologists and hydrologists through the WMO Education and Training Programme since 1974. Training is mainly provided abroad on subject areas and technologies for which facilities and teaching expertise are not available locally. In view of the rising costs of fellowships especially for long-term studies, emphasis continues to be placed on cost-sharing and on prioritizing the use of training facilities located 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 were awarded and managed at WMO as a result of management issues leading to a loss of resources discovered in 2003 in the Fellowship 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 a recurrence of such issues by strengthening

<sup>2</sup> Dr Yinka Adebayo –“WMO FELLOWSHIP PROGRAMME” – presentation at the 19th SFO meeting

internal controls. The major recommendations included: (i) the setting up of a Fellowship Committee to decide on fellowship awards; (ii) issuing and implementing a Fellowship Manual; and (iii) developing a database to keep an accurate record of fellowship applications, awards and history. The WMO Executive Council Fifty-Sixth Session held in June 2004, noted with satisfaction the new initiatives and appropriate measures taken by the Secretary-General to ensure the highest possible level of effectiveness, fairness and equity in the distribution among disciplines in the Fellowship Programme. It was observed that those innovative measures would increase the efficiency and transparency of the Fellowship 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.

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 Executive Council, as well as audit recommendations which further helped improve the effectiveness and transparency of the programme. These include:

- Publication of the "Manual on Policies and Procedures for WMO Fellowships" in 2006, which was intended as a tool for the management, internal control and coordination of fellowship implementation. This was followed by another publication: "Guidelines for Applying for a WMO Fellowship" in 2013 that was intended 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 cross programme coordination of all WMO-assisted training events within the framework of the management matrix to ensure that human and financial resources were used effectively to deliver high-quality specialized training in weather, climate and water subjects;
- The revised version of the Executive Council Criteria for the awarding of WMO Fellowships, 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 in order 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, the United States of America and the United Kingdom of Great Britain and Northern Ireland. These new offers are designed to support Members in 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 the 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 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 the 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 Fellowship 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 Fifteenth World Meteorological 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); the International Civil Aviation Organization (ICAO); the International Maritime Organization (IMO); the United Nations Educational, Scientific and Cultural Organization (UNESCO); the United Nations Environment Programme (UNEP); and the 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 Fellowship Programme - monitoring and evaluation" made at the 17th Meeting of the SFOs, held in the UK in November in 2008, generated a lot of interest and discussion among 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 an impact assessment of fellowships. At the 19th SFO Meeting held in Italy (2012), WMO again featured among the active participants. The meeting discussed the topic "Working Smarter: Efficient and Effective Fellowship 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 continued its active participation in these biennial meetings and other UN-related meetings and has been found to be 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 used regarding the implementation of the Fellowship Programme with the establishment of the 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.

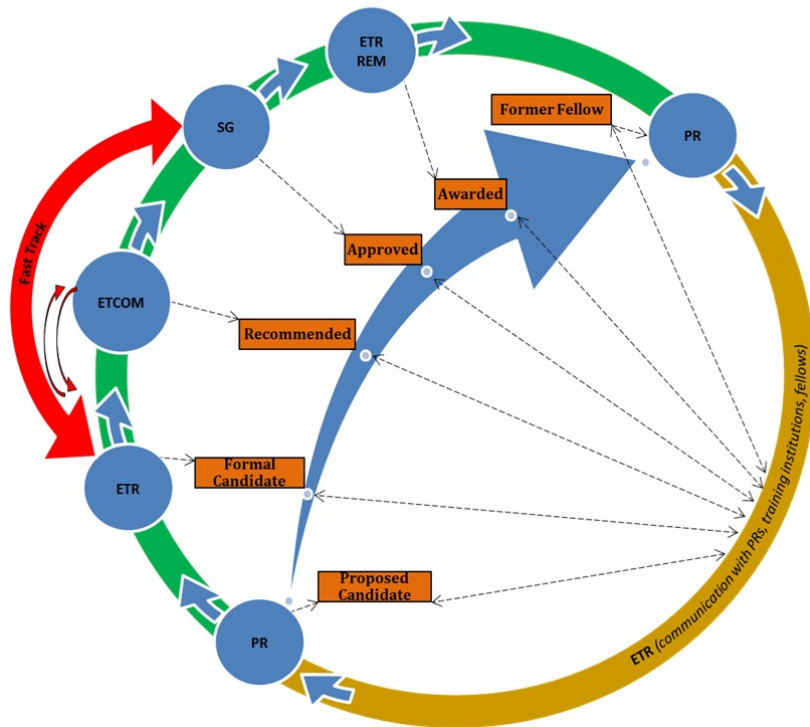
The composition of FELCOM, which meets quarterly to review and analyze fellowship requests, took into account the need to ensure that the planning and management of fellowships are closely coordinated with the staff involved in the various scientific and technical programmes of the Organization. The 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 fellowships 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 Figure 2. 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 the 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 to 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.

The life-cycle of the Fellowship Process



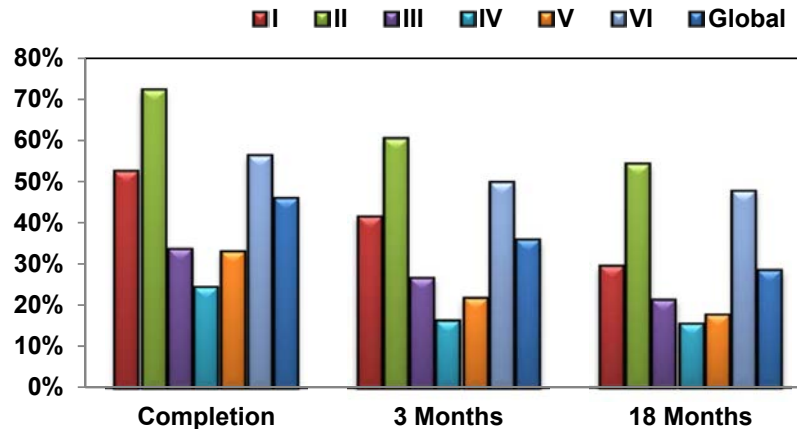
**Figure 2. The Fellowship processing procedure**

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 as to which application to approve.

### (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 report and monitor 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*).

### Monitoring Former Fellows (2004 - 2016)



**Figure 3. 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 Figure 3. 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 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. For almost two decades, the Fellowship Programme has been managed by a core staff comprising the Director of ETR, Chief of Fellowships, one Fellowship Officer and three Fellowship 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 a high level of transparency, efficiency and effectiveness in the programme as well as coping with the challenges regarding the ever-increasing demands for training due to many factors including developments in science and technology and the need for a better quality of life in the WMO Member countries. In this connection EC and Congress have underscored the priority given to the Fellowship Programme and have been advocating for a broader partnership with Members and civil society to meet the demands. Taking into account these innovative approaches in the programme that correspondingly require additional staff efforts especially from the Chief of Fellowship, it would be highly appropriate and timely to augment the level of staff in the Division needed to sustain the achievements being made by the programme.

With regard to financial resources, the Fellowship Programme had an allotment of CHF 1 563 474 for the 2014-2015 biennium, CHF 820 000 for 2016, and CHF 850 000 for 2017<sup>3</sup> from the WMO Regular Budget. More<sup>4</sup> than CHF 500 000 in additional funds from extrabudgetary 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<sup>5</sup>.

### **(e) WMO Regional Training Centres**

An important development in the Educational and Training Programme was the establishment of Regional Meteorological Training Centres (RMTCs) in the mid-Sixties. These were intended to fill important gaps in training facilities that were present 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 produce 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 the most cost-effective manner. By the end of 1987 more than 10,000 students had satisfactorily completed courses of instruction at these centres 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.

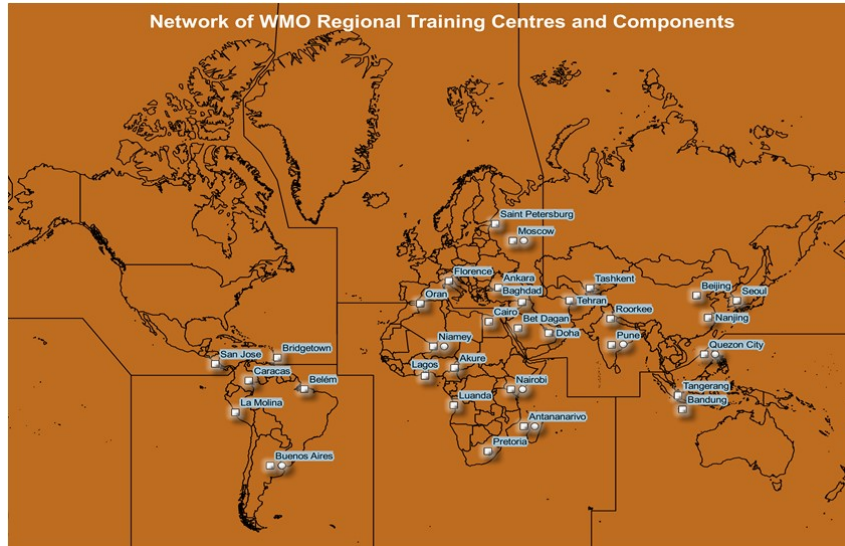
The useful role being played by the RMTCs and their rapid expansion over time warranted the EC Panel of Experts on Education and Training to initiate some appropriate measures to enhance their role and make them more effective. These included: reinforcing regional cooperation; raising greater awareness 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.

---

<sup>3</sup> Information from WMO Chief of Finance

<sup>4</sup> WMO EC Panel on Education and Training

<sup>5</sup> Information from the WMO Budget Office



**Figure 4. Network of WMO Regional Training Centres and Components**

In 2006, the WMO Executive Council decided that the term Regional Meteorological Training Centre (RMTTC) 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 Centres 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 centres 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 the implementation of activities for WMO Programmes at a national or regional level and under bilateral or multilateral programmes. 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:

- (i) short-term and long-term fellowships;
- (ii) short-term training seminars;
- (iii) the establishment of observing and data-processing facilities;
- (iv) support to meteorological and hydrological activities related to environmental protection;
- (v) the implementation of Internet capabilities at National Meteorological and Hydrological Services; and
- (vi) 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 declining and in the 5-year period from 2011 to 2015, the drop was from US\$ 148 678 to US\$ 42 500<sup>6</sup>. 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 the USA VCP Fund that enabled WMO to support fellows to the total of 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. The WMO overall budget from voluntary contributions (extrabudgetary 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 undergone a number of evaluation and audit exercises since 2003. These exercises include 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 Fellowship 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 some depth, the processes of approval and award of fellowships, monitoring of fellows and authorization of payments to fellows. The 2010 evaluation exercise had

---

<sup>6</sup> IPM/2016/ Doc. 2

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-development 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 assurances 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 out a new approach to the fellowship process included: i) setting up a fellowship committee to decide on fellowship awards; ii) issuing and implementing a fellowship 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 partially or completely, 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 fellowship 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 the 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, the Gambia, Ghana, Guinea, Kenya, Malawi, Mali, Nigeria, Rwanda, Senegal, Tanzania, Uganda, Hong Kong (SAR) 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 (the UK Met Office and the 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 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 centre stage of many activities that are being implemented to ensure the availability of well-trained meteorologists, hydrologists, climate scientists, engineers and technicians for WMO Members, notably for 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, among other items, calls for enhancing the capabilities of Members and NMHSs.

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 light of scientific and technological developments in weather, climate and water especially numerical weather prediction (NWP), 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 Fellowship Programme 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 interaction and collaboration between ETR and the scientific/technical departments of the Organization in delivering education and training workshops, training seminars and conferences, and
- the traditional approach to long, short and very short-term fellowships, group-trainings and familiarization visits for newly-appointed Permanent Representatives of Member countries.

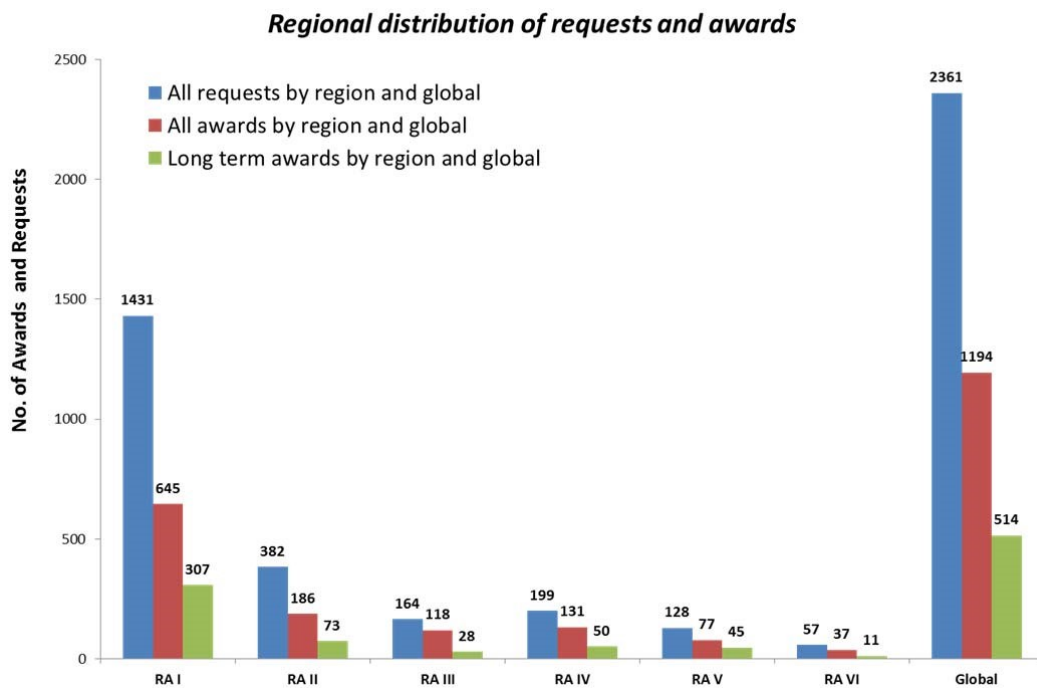
A list of the workshops, seminars, and group training activities and familiarization visits carried out during the period under consideration are listed in Annex IX.

In order to maximize the benefits and render the Fellowship Programme more effective, the ETR under the guidance of the panel has placed a 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, bilateral and multilateral arrangements and through expanded partnerships with donor countries. Within the Secretariat, the periodic audits from the Internal Oversight Office and the implementation of the ensuing recommendations have contributed significantly to enhancing the effectiveness of the Fellowship Programme. 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 reviews and in February 2017, the Education and Training Committee (ETCOM) was established through Service Note (SN) 2/2017.

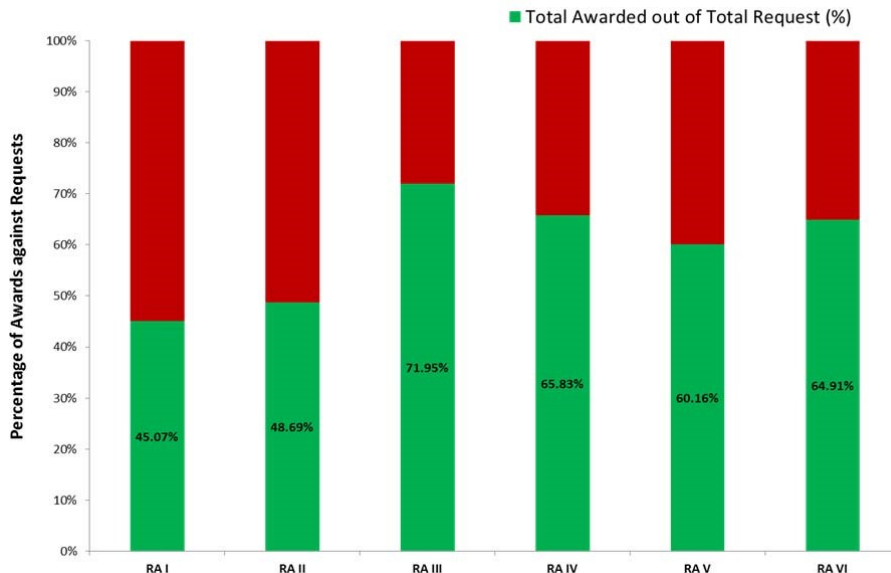
### (b) Fellowship delivery in the WMO Regions and globally

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 with the highest level of delivery of 1 431 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, as expected, the lowest taking into account the purpose of the Fellowship Programme and the EC criteria for the awarding of fellowships that places an 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 Fellowship Programme during the period under consideration.



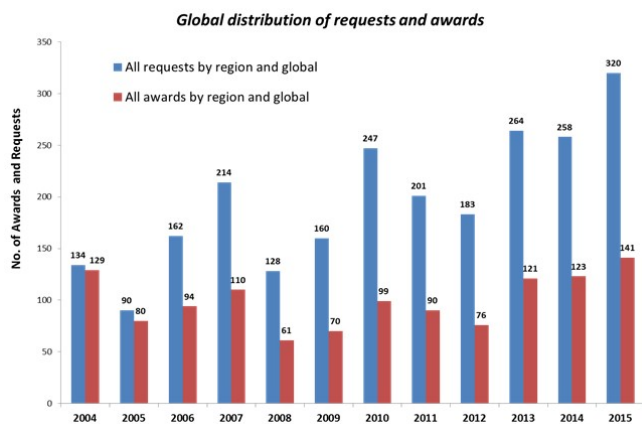
**Figure 5(a). Global and Regional Distribution of Requests and Awards**

The picture is different when compared to how many of the total requests were awarded (see Figure 5. (b) below. In this regard, requests from Region III were 71.9% awarded, followed by RA IV (65.8%), RA VI (64.9%) and RA I (45.07%). This can be explained, in part, 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.



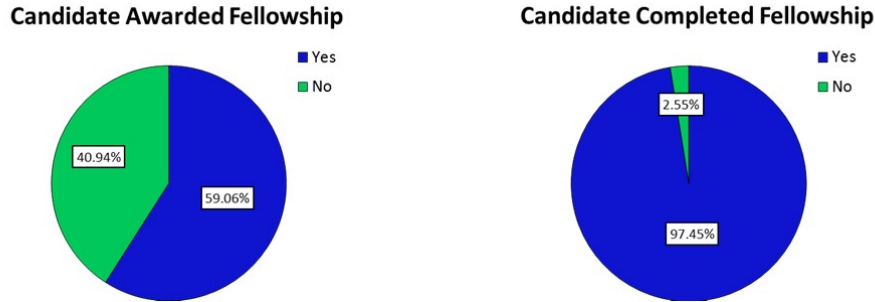
**Figure 5(b). Percentage Total Awarded out of Total Requests**

Demand for fellowships during the past twelve years shows a progressive increase. Peaks were observed in 2010, 2013, 2014 and 2015, which was the highest during the last decade (see Figure 6. below).



**Figure 6. Annual Distribution of Requests and Awards**

Analysis of the fellowship database regarding the number of awarded and completed fellowships overall shows a very high completion rate. Of all the applicants who applied for a fellowship from 2004, only 0.3 percent failed and 0.9 percent withdrew (see Figure 7. below).



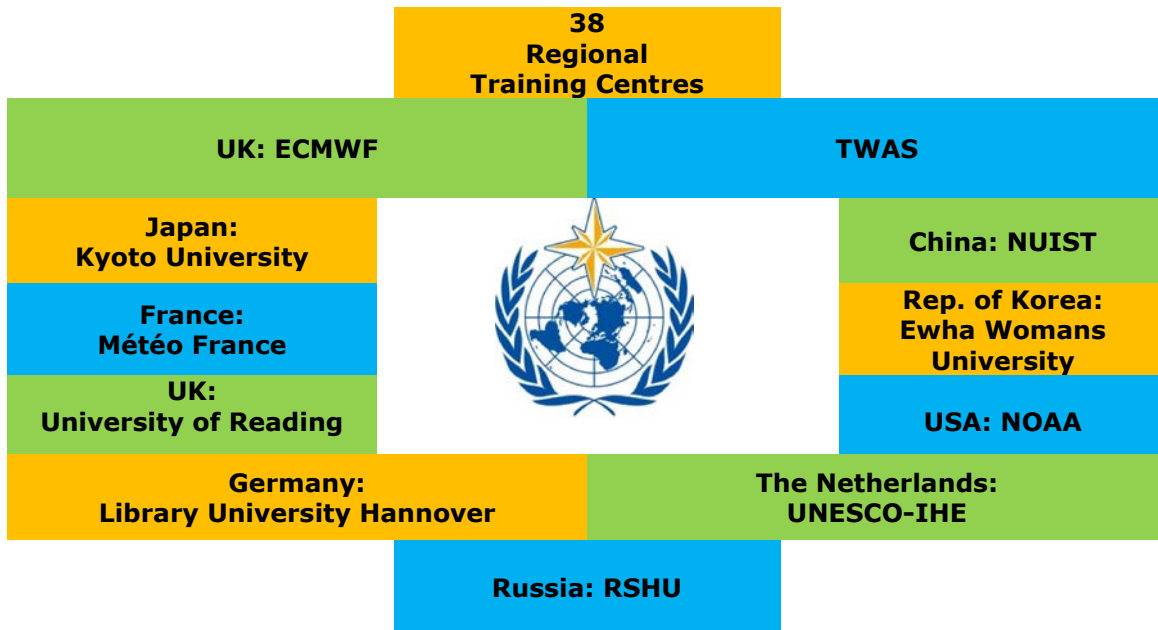
**Figure 7. Percentage of Overall Awarded and Completed Fellowships**

**(c) Broadening partnerships to expand training opportunities**

Partnership in development has been the “modus operandi” in the implementation of the Fellowship Programme since its inception five decades ago. Newly trained experts are in constant demand due to natural staff turnover. The lure of 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, as well as civil and private sectors have been collaborating with the Organization through various mechanisms including bilateral and multilateral agreements, trust funds, and 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’s annual letter to Members mentions the collaboration with a number of development partners in order 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 of 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 Sixteenth 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 Fellowship Programme, 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.



**Figure 8. Partners in Development**

In addition to agreements with Members, cooperation was also established with a number of institutions and organizations, namely, EWHA Womans 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, China (on meteorology and postgraduate research), University of Reading (on meteorology), UK, and the European Centre For Medium-Range Weather Forecasts (ECMWF), Reading, UK (on forecasting 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 Vol 61 (2) - 2012.

#### **(d) Use of Regional Training Centres and other Regional Institutions**

Almost all of the respondents to the questionnaire acknowledged the usefulness of RTCs in strengthening the capabilities and skills of technicians, and acquiring quality human resources in order to respond effectively to users demands and fulfill the Services' mission, which includes a 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 competencies and have enhanced work performance at NMHSs. Refresher courses, staff secondments, training seminars and workshops, exchange of staff, visits among RTCs and collaboration with other regional centres such as ACMAD have been found to be very useful.

**(e) Interaction/collaboration between RTCs/regional Institutions and National Services**

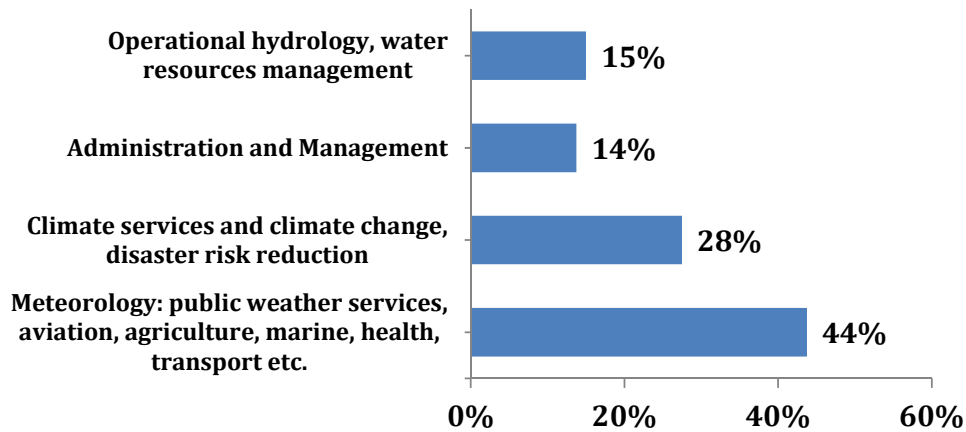
Many countries appear to have a strong relationship with their Regional Training Centres (RTCs) and are satisfied with their activities. The present interaction/collaboration between RTCs and national services continues to improve as it provides a good opportunity for capacity-building as far as the National Meteorological Services are concerned. 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, lecturers and students and collaboration on developing resources (modules, 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 interaction to ensure that training programmes and schedules are acceptable to all parties;
- (iv) Explore options for sustainability and offer students the option to join graduate and postgraduate programmes;
- (v) The RTCs should run regular scheduled courses and inform all countries. This will enable other countries to take advantage of the RTC programmes. They need to offer vacancies to NMHSs as this will assist WMO rationalize fellowship assistance to countries;
- (vi) RTCs should be encouraged to evaluate all courses/seminars/workshops and distribute the feedback widely;
- (vii) RTCs should offer free online courses, particularly ones related to operational meteorology; the number of international online training courses should be increased and the training materials should be available online following the course. There should be integration of the e-learning in the courses offered;

- (viii) Training costs should be borne entirely by the organizers or should be on a 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 together with board and lodgings abroad is more expensive. 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 programmes based on national requirements;
- (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 protection of life and property from natural disasters;
- (xii) Increase capacity-development activities in the latest techniques such as NWP products (accessibility, interpretation), in model output, statistics, data assimilation techniques, satellite and radar data analysis and interpretation, climate services, development of forecast guidance systems, high impact weather forecasting, socio-economic assessment of meteorology, and promotion of more research between the RTC and a Member country.

#### (f) WMO Fellowship Alumni

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



**Figure 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. On a national level, many have continued to perform their

respective scientific or technical duties while some have moved to 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. On an international level, there are several distinguished ex-fellows of the WMO Fellowship Programme who have served or are serving in governing and subsidiary bodies of WMO and allied organizations 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 Fellowship Programme in one way, and in another way, to promote interaction among 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 professionals 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 XIII.

## **2. IMPACT OF THE FELLOWSHIP PROGRAMME**

### **(a) Impact on individual fellows**

An assessment of responses to the questionnaire has shown that the impact of the Fellowship Programme on individual fellows has been positive and, in some cases, very positive especially in the areas of research, development and management by increasing the scientific and technical knowledge base, upgrading the individual's job performance and productivity, encouraging a higher quality of work as well as improved expertise in research and publications.

The programme enabled some fellows to acquire more responsibilities in their services apart from one incident where the lack of suitable opportunities was noted. This could be a setback for upward movement in many services. Some examples of those who have moved upwards after training are:

- (i) **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;
- (ii) **Guyana** Ms Seulall was promoted to leading the Service;
- (iii) **Ghana** Mr Nkansah's assumed the position of Deputy Director-General of the Ghana Meteorological Agency with increased research capabilities and in some instances, supervises students from Universities in Ghana in their research work;
- (iv) **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:



- (i) **Uganda** The fellow has developed more research capacity for a number of staff who are working with him on the SWAP project,
- (ii) **Myanmar** The fellow had her Master of Science thesis published in the SCI paper (Arabian Journal) in 2015 on the topic "Characterization of southwest monsoon onset over Myanmar",
- (iii) **Pakistan** Fellows became resource persons in order to train other staff thus contributing effectively to an improved service delivery of the NMHS,
- (iv) **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,
- (v) **Guyana** Training via the fellowship facilitated research on Guyana's most devastating flood event which occurred in 2005,
- (vi) **Belize** Fellows acquired better skills on running the Weather Research and Forecasting (WRF) Model for the Belize domain,
- (vii) **Philippines** The programme provided the fellow with a better foundation in order to carry out his main job, i.e. the maintenance of meteorological instruments and enabled the transfer of knowledge to the meteorological academy students,
- (viii) **Trinidad and Tobago** The impact of the Fellowship Programme on individual fellows has been great. It has provided opportunities for personal advancement, strengthened the service and created trainers for persons at lower levels.

A summary of the individual impacts from the 18-month post fellowship report follows:

- (i) **Nigeria** Mr Desmond Onyilo - The fellowship 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.
- (ii) **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 bulletins has improved significantly.
- (iii) **Nigeria** Mr Sabastine Dekaa Francis - The fellowship has greatly improved his skills in enabling a robust analysis of rainfall and other climate parameters thereby contributing effectively to research outputs and the enhancement of seasonal and sub-seasonal forecast products.
- (iv) **Tanzania** Mr Chuki Athumani Sangazugembe - The fellowship and the qualification obtained have had a very significant impact on his career development and for the Tanzania Meteorological Agency. Using the knowledge and skills obtained, it is now possible to run a lake wave watch model over Lake Victoria and West Indian Ocean domains on a daily basis.
- (v) **Tanzania** Ms Habiba Ismail Mtongori - The fellowship and the qualification obtained have had a very significant impact on her career development and for the Tanzania Meteorological Agency. She worked at the Central

Forecasting Office as a meteorologist and is currently pursuing her PhD studies on the impact of climate change.

- (vi) **Tanzania** Mr Ladislaus Changia - The qualification he obtained has had a very significant impact on Dr Ladislaus Changia's career and on the Tanzania Meteorological Agency. Currently he is the Acting Director of Research and Applied Meteorology in that agency and the IPCC Focal point for the United Republic of Tanzania.
- (vii) **Tanzania** Ms Sarah Osima - The qualification she obtained had a very significant impact on Ms Sarah Osima's career and on the Tanzania Meteorological Agency. She is currently the head of the environment section and working on research over East Africa.
- (viii) **Trinidad and Tobago** Mr Albert Simon ALEXANDER – Mr 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.
- (ix) **Trinidad and Tobago** Mr Kenneth A. KERR – Training via the fellowship facilitated improved consultation in weather and climate-related issues. It enabled an improved participation and intervention in national, regional and international conferences, seminars and technical workshops. It provided improved technical competencies which has led to improved climate products and services including the development of new products. It has facilitated a better understanding and a stronger scientific background which has led to better research performance across a broader spectrum of applied sciences.
- (x) **Fiji** Ms Aditi SHARAN - Ms Aditi Sharan is a Public, Marine and Aviation Weather forecaster and her role fulfils Fiji's Meteorological requirements as an operational meteorologist. The acquired qualification allows FMS to fulfil its obligations as a national meteorological and hydrological service as well as a regional specialised meteorological centre for the tropics. Her work on a daily basis makes significant impact on the lives and well-being of communities within Fiji and the region that it serves.
- (xi) **Fiji** Mr Paula S. TAWAKECE - The officer is very knowledgeable on technical and scientific subjects and is equipped to hold more responsibilities than he has in his current post which comprises understanding the basic current flood warning system in place; monitoring and checking the accuracy of the measurement and analysis; understanding the process and procedure of validating hydrological data manifold in the office and in field operations. The officer has a good knowledge of hydrological systems and has gained significant analytical skills and knowledge that is applied in his daily work especially during severe weather and flood forecasting duties.

#### **(b) Impact at national, regional and global levels**

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 training courses in different fields are considered to be an excellent opportunity through which scientists, researchers and technicians in meteorology, climatology, operational hydrology, instrumentation, as well as the application of new technologies, can be upskilled.

Training activities have built capacity at NMHSs some of which were under-staffed due to many staff reaching retirement age. Newly returned fellows have therefore helped to strengthen capacity in the NMHSs enabling them 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, as well as satellite and radar meteorology. In some NMHSs the service delivery has been improved in terms of quality and quantity.

Positive contributions through VCP arrangements with partners such as the UK Met Office and NOAA in enhancing capacity building and development has been noted in some responses. Training at NOAA in the use of a new work methodology has enabled forecasters to have a better understanding of weather analysis and improved their ability to prepare accurate forecasts. The forecasters now also have access to a modern forecasting unit, which helps to enhance services to the community.

It was reported in one case that, although the training had greatly enhanced capacity, much more training was needed to match other NMHSs. In another case, it was flagged that more competent staff can be acquired after training. Most fellows learn the theory during training activities but, in order to maintain capacity development of the NMHSs, staff must be qualified in both theory and practice. Indeed one response stated that the training activity made no real difference in the quality of its service. On the issue of the Fellowship Programme contribution to development activities at national and regional levels, the feedback varied from good to excellent.

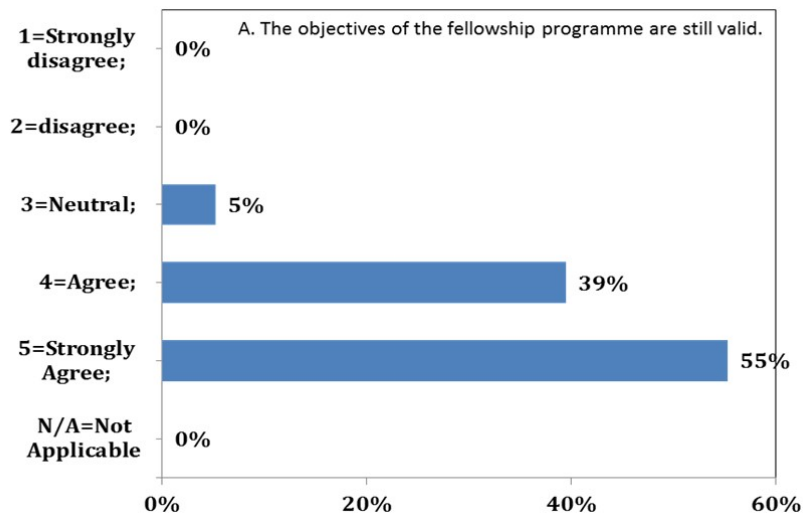
According to responses to the evaluation questionnaire, 37% of the respondents indicated that the Fellowship Programme has made an excellent contribution towards increasing the number of qualified and competent staff at national and regional levels. 34% and 29% indicated very good and good ratings respectively (see Table III of Annex XI). A very good rating was also attributed to the other issues raised in points n°. ii), iii), iv) and v) relating to current and emerging demands (63%), transfer of knowledge (47%), promoting visibility (47%) and contributions to socioeconomic development (43%) respectively. It is important to observe that none of the respondents indicated poor impact performance of the Fellowship Programme in any of the five criteria shown in the above-mentioned Table.

Similarly, fellows' participation at international events has been very positive. 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 ratings 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

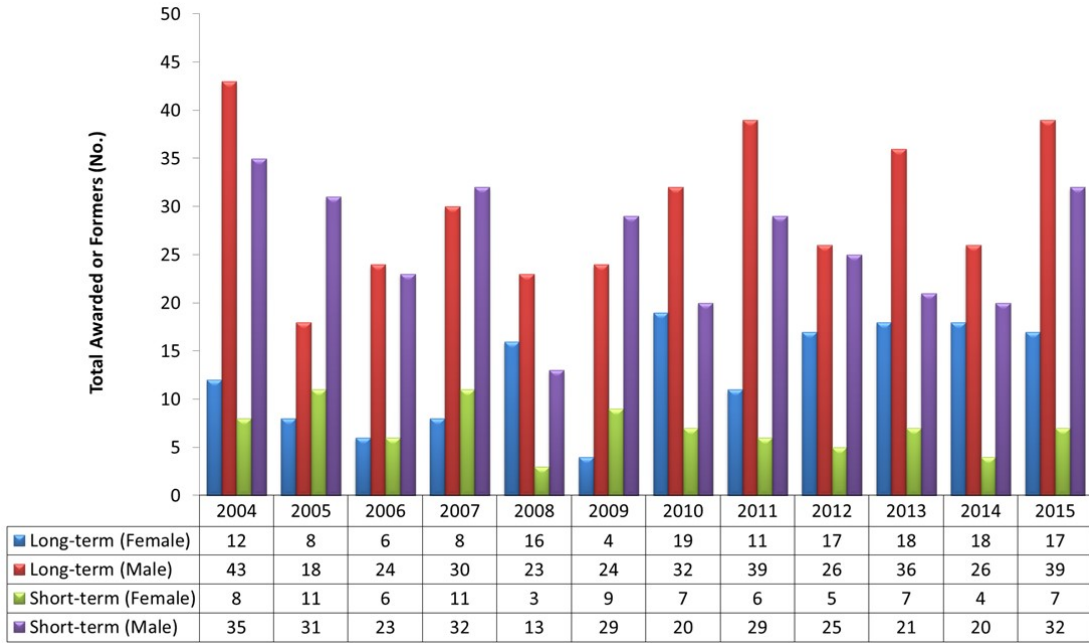
The objectives of the Fellowship Programme have been found to be still valid. According to responses to the evaluation questionnaire, 55% of the respondents have manifested their strong agreement with the objectives of the programme. None of the feedback received expressed disagreement with the validity or non-applicability of the objectives and only 5% indicated some neutrality on the issue (see Figure 10. below). Overall, the view confirms that the Fellowship Programme 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 climate change.



**Figure 10. Validity of the Objectives of the Fellowship Programme**

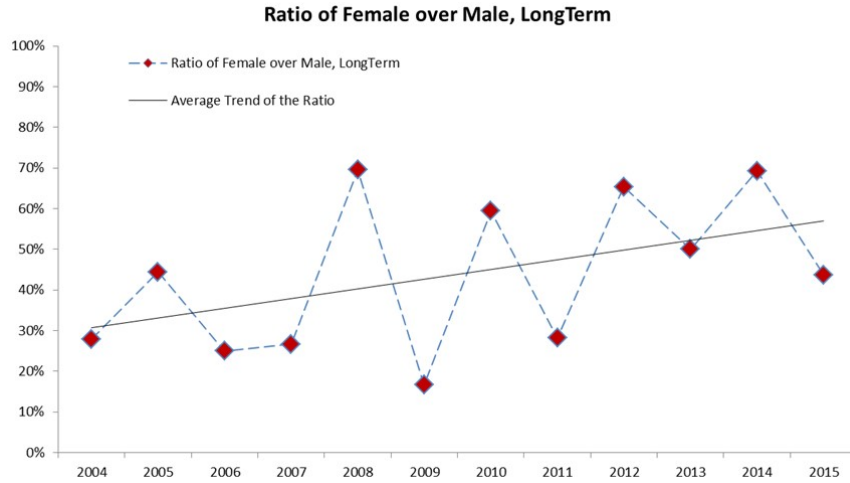
#### (b) Gender equality in the Fellowship Programme

The WMO is committed to achieving gender equality and an increased participation of women in its field of activities. The Seventeenth 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 awarding fellowships places gender equality among the highest considerations.



**Figure 11. Awarded or Former Female and Male Fellows**

The importance given to gender equality in the Fellowship Programme is demonstrated in Figure 11. above in which one can take note of progress made on this matter over time. On average, the percentage of awarded or former female fellows for long-term studies is 42.6% of the number of male fellows for the period of 2004 to 2015. There has been an increase of 55.1% during the period 2012 to 2015.

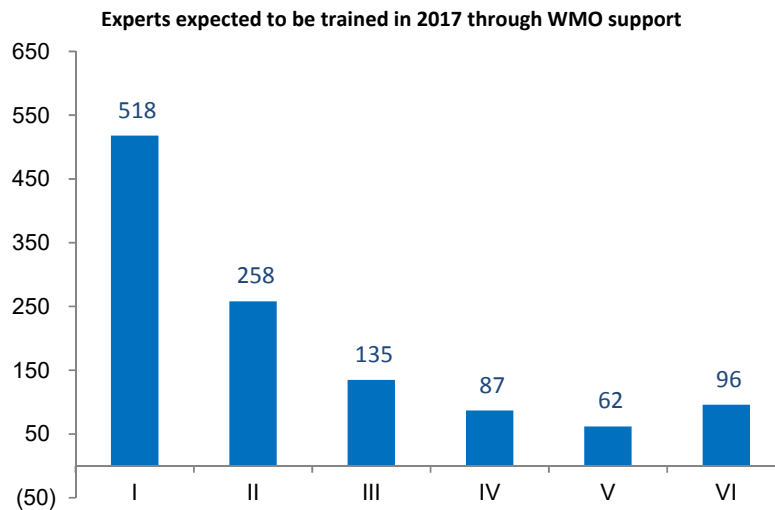


**Figure 11a. Long-Term Awarded or Former Female and Male Fellows in Percentages**

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.

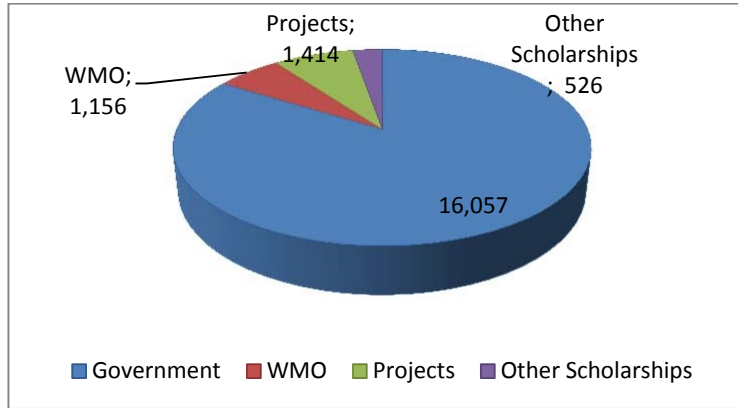
### (c) Current and emerging fellowship demands

Demand for the Fellowship Programme is on the increase as a result of evolution in science and technology as well as the need for well trained and skilled personnel in the NMHSs in order to cope with developments particularly in the new and emerging areas such climate change and disaster risk reduction. Figure 12. below shows the result of the 2017 ETR human resources survey regarding the current demand for training and fellowships. In line with a 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.



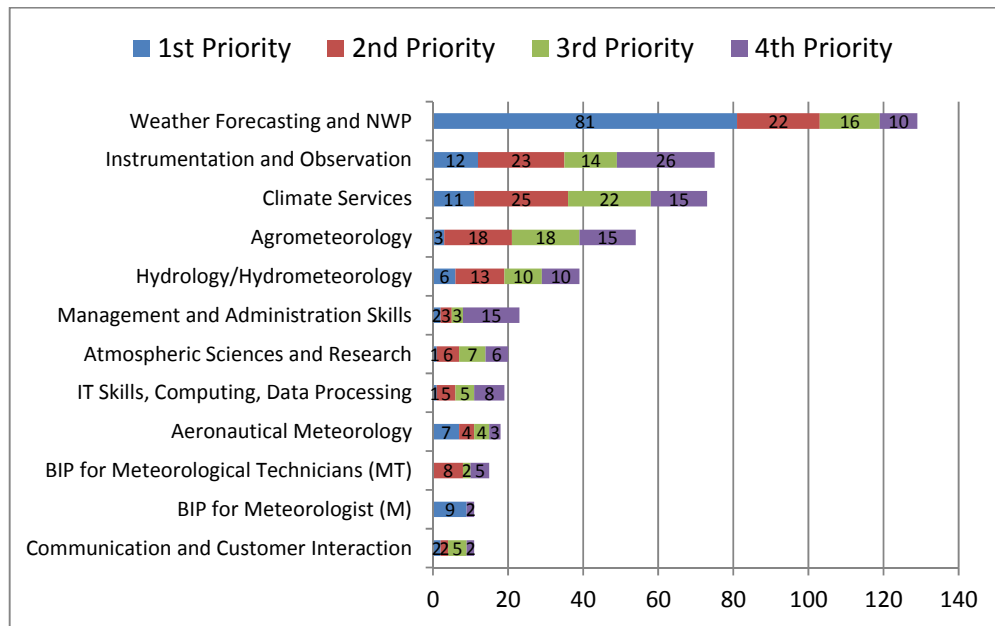
**Figure 12. Current demand of fellowship by region**

While it is obvious that this high level of demand for access to WMO fellowships is reflective of the Members' needs and how relevant the programme is to them, it would be a huge task for the Organization to meet such a demand in one year. In this regard, WMO will enhance its collaboration with other stakeholders to explore other possible funding sources from Governments, multilateral and bilateral institutions. Figure 13. shows that, on average, governments are expected to support about 85% of the training requirements 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 a significant difference in meeting Members' expectations.



**Figure 13. Different Funding Sources for Education and Training**

In line with the high volume of demands highlighted in previous paragraphs, there is an urgent need to address the emerging challenges of weather, climate and water. Figure 14. below indicates the priorities of Member countries and it goes without saying that building capabilities and skills in weather forecasting and NWP is their top priority. This highlights the need for the NMHSs of developing countries for assistance so that they can contribute to addressing the many extreme effects and vagaries of weather, climate and water at national, regional and global levels, e.g. disaster risk reduction. Climate services appear here as a lesser priority but they are considered equally important in view of the significant global engagement on the Global Framework for Climate Services (GFCS) and the follow-up on the Climate Change Conference of Parties (COPs).



**Figure 14. Training Priority Areas – Globally**

**(d) An overview of the activities and output of the Fellowship Programme vis à vis the overall goal and objectives of the programme**

According to responses received, 55% percent of respondents agreed that the activities and output of the Fellowship Programme are in accordance with the overall goal and attainment of the objectives (Table V(c) of Annex XI). 39% of the responses even expressed their strong agreement while 3% disagreed. It was also strongly agreed that the training received by the fellow was relevant to his/her current role in the service.

**(e) Activities and output of the Fellowship Programme within the framework of intended impacts and effects**

With respect to activities and output of the Fellowship Programme, there was overall agreement that they are within the framework of the intended impacts and effects. Respondents also strongly agreed that the programme is delivered effectively at 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**

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

- (i) **Ghana** a significant dropout rate in the past but this has dropped to 15% now,
- (ii) **Rwanda** the dropout rate is minimal,
- (iii) **Senegal** 30% dropout rate,
- (iv) **Maldives** 30% dropout,
- (v) **Myanmar** the dropout rate is average,
- (vi) **Antigua** the dropout rate is extremely low with just one over the period mentioned,
- (vii) **Belize** dropout rate is about one out of every five.

**(b) Major factors which influenced the achievement or non-achievement of a sustainability impact of the Fellowship Programme**

Factors that most influence the achievement of a sustainable impact include the motivation of fellows upon return to their countries and their employment or a proper placement in the services. Trained staff should be encouraged to use the knowledge acquired from the Fellowship Programme in their day-to-day activities thereby creating a conducive learning and working environment in the service. The training encourages self-education, which leads to career development and progress in operations and scientific research.



The service should be well structured with a clearly outlined service and career development plan for 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. Continuous inter-departmental cooperation and collaboration needs to be actively promoted and regular communication and refreshers courses should be organized at intermittent periods.

On the other hand, due to staffing problems, fellows returning home are often assigned higher responsibilities in management due to the lack of suitably qualified staff. As a result, they seldom have the time to apply the knowledge gained in their field of competence. The absence of 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 a greater number of enrolled students who can successfully complete them.

Other factors raised that hinder a 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 centres and a low stipend compared to the cost of living in some host countries, iv) the language barrier suffered by some Members especially the French-, Spanish- and Portuguese-speaking countries for activities in certain training centres, v) lack of adequate funding, vi) opportunity to learn from 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' cost of living and the need to adjust the living cost/stipend or allowance so that the fellow can study in reasonable comfort. It was noted that a partial fellowship is better than none and prior consideration should be given to those countries/institutions that are less expensive and can offer quality training. Cost could be shared if the arrangements 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 participating Members could share the cost of training depending on the flexibility of their financial status. One country proposed that fellows should sign a contract agreeing that if they fail the course, they will pay back WMO at least eighty percent (80%) of the cost.

Some expressed the opinion that a good way of dealing with cost-sharing and cost-effectiveness is by conducting in-house training programmes 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 provision of online training programmes is another suggested way to realize cost-sharing and cost-

effectiveness. On a 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 pave the way to higher education (MS/PhD level) in those countries.

Respondents also called on WMO to continue to encourage partners to improve funding which generally seems to be declining. The trust funds, projects and the WMO Voluntary Cooperation Programme were found to be really good funding mechanisms and increased support should be solicited for the sustainability of the Fellowship Programme. Funds should be solicited also from other non-governmental organizations and regional banks. It was felt by some that Member countries should make a greater effort to pay their annual contributions to the Organization.

## **PART C. CONCLUSIONS AND RECOMMENDATIONS**

### **1. CONCLUSIONS**

The Fellowship Programme, which is the main component of the WMO Education and Training Programme (ETRP), has played 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 five decades.

Notwithstanding its achievements, demand on capacity development continues to increase due to progressive advances in science and technology. The introduction of superfast 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 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 Fellowship Process. An analysis and interpretation of the information on the effectiveness, impact, relevance and sustainability of the Fellowship Programme were carried out for the period 2005 to 2015.

From the analysis, it can be concluded that the Fellowship Programme is needed today more than ever by the NMHSs of developing Member countries in order to continue to contribute effectively to the sustainable development of their nations and the world. The programme has been found to be very positive and effective in its delivery at national, regional and global levels. Due to the increasing demand for training and specific needs, it has remained a very relevant programme to the Members. Although there was never a time when requests for fellowships were fully met and the evaluation has shown that RA III had the highest portion of their demands met (71.9%) and RA I, the lowest

portion met (45.07%), one can conclude that, on average, the programme has made a significant difference and impact on the day to day operations of the NMHSs, which are capable today of issuing weather forecasts and warnings as a minimum.

Indeed the shortfall in meeting the Members' evolving needs, which is mainly due to inadequate funding, has prompted 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 COP21 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 available opportunities at bilateral and multilateral levels. Trust Funds, VCP, and various projects have been declining in recent years while requests are steadily increasing given the devastating effects arising from climate variability and change. It would therefore be wise to try to reverse this trend by calling on all stakeholders to take appropriate and concerted action at national, regional and global levels. On a 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 up the capabilities of NMHSs through the promotion of south-south partnerships and cooperation amongst developing countries, they are avenues of cost-effective and affordable training in the regions. They are also agents for the enhancement of north-south partnerships, which have 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 partnerships more cost-effective, there should be instances when experts from developed countries are deployed to provide face-to-face, blended learning or online training at the RTCs and national institutions using their models to obtain similar outcomes. Collaboration between the RTC Nairobi and the UK Met Office, AEMET and the Spanish-speaking countries in Latin America and Météo-France and French-speaking countries is a good example.

Regarding the WMO Secretariat, continued efforts have been made to better address the needs of Members in capacity-development 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 bringing the activities of the Fellowship Division and those of the Training Division together under one coordination mechanism. It replaced FELCOM and the Training Committee in order to optimize the available resources thereby improving 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 training activities in isolation of others should be discouraged whenever possible. Training events of all departments should be synchronized and well-coordinated at the quarterly or biannual meetings of ETCOM in order to determine how best to use resources in order to address the needs of more Members.

## 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:

- (a) Increased financial and human resources should be provided to the Fellowship Programme which has remained a highly valuable programme for many years for developing Member countries of WMO, particularly the Least Developed Countries and Small Island Developing States as well as WMO. The important role played by the Fellowship Programme in capacity building has been repeated 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.
- (b) Member countries, especially those benefiting from the programme, also have a significant role to play in its success and sustainability. In this regard, it is recommended that they react more positively to the demands addressed to them regarding the implementation of fellowships. These include:
- (i) Having a robust strategic plan of the service that guarantees the employment and/or career development of fellows upon completion of studies;
  - (ii) Nomination of suitable and qualified candidates for the awarding of a fellowship; the NMHS that recommends the candidate should have certain selection criteria to send those who are really interested and meet the basic requirements to study abroad;
  - (iii) Commitment to the practice of cost-sharing in training and to the increased use of Regional Training Centres, as appropriate;
  - (iv) Timely submission of impact reports upon the fellow's completion of studies, i.e. 3 months and then 18 months after completion. The latter requirement has been poorly adhered 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.
- (c) At the level of the WMO Secretariat, it is highly recommended that training activities being undertaken by various 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 earmarked for capacity development of Members;

(d) 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:

- (i) the Fellowship Management System (Fellman Plus) database that has, up to now, been a useful tool for the fellowship delivery, needs to be updated or overhauled as soon as possible to better suit the present demands of the programme. It is noted that steps are being taken to integrate it into a planned single organization-wide database system. If such is the case, due attention should be given to the impact of the transition phase on the Fellowship Programme and the support of ITD should be readily available to the Division as and when required;
- (ii) 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 a newsletter on the WMO website. The discontinued Annual Report of the Organization used to provide similar information for general consumption.

(e) The evaluation has noted the important role being played by the partners of the Fellowship Programme in its delivery. 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 programme, 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.

(f) The evaluation recognized the crucial role of the Regional Training Centres and training institutions in the WMO Education and Training Programme from the outset. On the whole, responses from the two questionnaires have been positive particularly with regard to cost-effectiveness and cost-sharing of training events and the sustainability of the programme. 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:

- (i) The training opportunities offered by the RTCs and other regional training institutions should be of the required quality both in content and substance and should be relevant to the geographical location/country concerned, i.e. whether in mid-latitude 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;

- (ii) In view of the expectations from the fellows, the programme should make a concerted effort to build up the capacity of the RTCs in terms of:
- training in structural development – for the development of e-Learning courses
  - training on development of blended courses
  - training of trainers<sup>1</sup> – pedagogy, etc.
- (iii) Noting that the absence of staff from their jobs over a long period of time can, in some cases, be a 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 to concentrate efforts on in-country group training which has the merit of cost-effectiveness, impact and sustainability.
- (iv) The issue of language has been raised by some respondents to the questionnaire and WMO recognises that this has been an issue for some time. It is therefore recommended that continued action be taken to ensure the distribution of RTCs based on the different languages of WMO.

(g) The WMO Fellowship Programme has, over the last five decades, contributed enormously to the capacity and competency building of NMHSs in developing countries through concerted efforts with Member countries and partners. The evaluation has highlighted the major factors that influence the achievement and non-achievement of the sustainability impact of the programme and the need for further action on this matter to consolidate the impacts and determine the risk factors, particularly at national and regional levels. In this regard, it is recommended that a framework strategy for the 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 I(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 as the Climate Risk and Early Warning System (CREWS) initiative launched at COP21 in Paris in December 2015, the Green Climate Fund and the 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 FELLOWSHIP 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) Present and future demands for geographically focused training aimed at identifying the changing focus and areas for training where significant benefits may be accrued;
- (e) Other possible areas of reporting include but are 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:
  - (i) Number of awardees who successfully complete Fellowships;
  - (ii) Number of awardees who achieve a high degree of success;
  - (iii) Number of fellows receiving multiple awards;
  - (iv) Number of fellows who fail to complete the programme(s) and the reasons for their poor performance;
  - (v) Number of 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) Appropriate tools to collect information from selected beneficiaries of fellowships with a view to determining the benefit of the fellowship to the service as well as to the individual fellows;
- (g) A 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) Rate of retention of fellows;
  - (iv) Other mechanisms used to fund the building of capacity and competence;
  - (v) Whether fellows contribute, apart from training, to other regional and national programmes that support the sustainable development agenda;
- (h) A questionnaire to RTCs about how to enhance the cost-effectiveness of programmes and, where possible, how to reduce the cost of training, by asking:
  - (i) If fellows entering programmes are appropriately prepared;
  - (ii) To what extent the training programmes are geared towards foundation building to enable students to undergo the core training;

- (iii) To what extent the programme is dependent on the participation of fellows, i.e., in the absence of fellows would the programmes attract 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 Fellowship 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 is 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 68<sup>th</sup> 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

<b>Evaluation Criteria</b>	<b>Key Evaluation Questions</b>	<b>Sub-questions</b>	<b>Indicators</b>	<b>Data Source</b>	<b>Data Collection Method</b>
Effectiveness	To what extent has the Fellowship Programme 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 have the internal evaluations and audits played 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 fellows progressed as a result of 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 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 national and regional levels?	Stakeholders' views;  Programme implementation and assessment	Members; ETCOM reports, Governance and stakeholders	Document review;  Questionnaire;  Interviews

<b>Evaluation Criteria</b>	<b>Key Evaluation Questions</b>	<b>Sub-questions</b>	<b>Indicators</b>	<b>Data Source</b>	<b>Data Collection Method</b>
		What are the impacts of the Fellowship Programme at a 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 Fellowship Programme consistent with the overall goal and attainment of the objectives?	Governance  Evidence of clear understanding among FELCOM members of the ETR's mandate; Programme stakeholders' views	Members;  Senior management; ETCOM Reports	Questionnaire Document review;  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 of 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 <i>who have benefited from the WMO Fellowship Programme</i> from 2005 to 2015.						
1. Name of the institution/organisation:						
2. The total number of staff who have benefitted:						
3. Fields of study:						
4. Degree/diploma obtained and duration of training:						
5. Current fields of activity since returning:						
<input type="checkbox"/> Administration and Management						
<input type="checkbox"/> Meteorology (public weather services, aviation, agriculture, marine, health, transport, etc.)						
<input type="checkbox"/> Climate services and climate change, disaster risk reduction						
<input type="checkbox"/> Operational hydrology, water resources management						
<input type="checkbox"/> If none of the 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						
<b>A. On a personal level</b>						
1. Name of fellow/staff member						
2. Position in the service prior to the degree						
3. Position in the service after degree awarded						
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. Impact of the Fellowship Programme on individual fellows (career development, research output, etc.). (Please give details below, using an additional page if necessary).						
<b>B. On institutional/regional/national level</b>						
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 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)						
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>N/A</b>
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 socioeconomic development						
3. To what extent has the programme contributed to your participation on an 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, expert working groups including IPCC and COP						
iv. participation in other international cooperation structures and bodies						
v. others						
<b>III. Relevance of Fellowship Programme</b>						
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 national and regional levels.						
F. Please provide your views, if any, on the relevance and efficiency of the WMO Fellowship Programme, and how it could be improved.						
<b>IV. Sustainability of the WMO Fellowship Programme</b>						



A. To what extent do the fellows 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 the sustainability impact of the Fellowship 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)**

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

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



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

Secrétariat  
7 bis, avenue de la paix  
Case postale 2300  
CH 1211 Genève 2  
Suisse  
Tél. : +41 (0) 22 730 81 11  
Fax. : +41 (0) 22 730 81 81  
E-mail : wmo@wmo.int  
Website : www.wmo.int

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 countries 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;



WORLD  
METEOROLOGICAL  
ORGANIZATION

SERVICE  
NOTE

- (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.



WORLD  
METEOROLOGICAL  
ORGANIZATION

SERVICE  
NOTE

#### *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 awarding WMO Fellowships  
(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 short-term (less than six months) and long-term (6 months or longer) fellowships, based on the 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 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) Come 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 practise 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 candidate's 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**

<i>Region</i>	<i>Home country</i>	<i>Total fellowships</i>	<i>Completion</i>	<i>3 months</i>	<i>18 months</i>	<i>Case closed by PR</i>	<i>Total outstanding</i>
<b>I</b>	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 Rep. 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	

Region	Home country	Total fellowships	Completion	3 months	18 months	Case closed by PR	Total outstanding
	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 Rep. 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
Subtotal		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

<i>Region</i>	<i>Home country</i>	<i>Total fellowships</i>	<i>Completion</i>	<i>3 months</i>	<i>18 months</i>	<i>Case closed by PR</i>	<i>Total outstanding</i>
	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
<b>Subtotal</b>		<b>192</b>	<b>140</b>	<b>117</b>	<b>105</b>	<b>7</b>	<b>193</b>
	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 Rep. of	1	1	1	1	0	0
<b>Subtotal</b>		<b>103</b>	<b>57</b>	<b>45</b>	<b>36</b>	<b>1</b>	<b>168</b>
	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

<i>Region</i>	<i>Home country</i>	<i>Total fellowships</i>	<i>Completion</i>	<i>3 months</i>	<i>18 months</i>	<i>Case closed by PR</i>	<i>Total outstanding</i>
	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
<b>Subtotal</b>		<b>134</b>	<b>60</b>	<b>40</b>	<b>38</b>	<b>7</b>	<b>243</b>
	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
<b>V</b>	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
<b>Subtotal</b>		<b>71</b>	<b>41</b>	<b>27</b>	<b>22</b>	<b>0</b>	<b>123</b>
	Armenia	1	0	0	0	0	3
	Azerbaijan	2	1	1	0	0	4
	Belarus	2	2	1	1	0	2
<b>VI</b>	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

<i>Region</i>	<i>Home country</i>	<i>Total fellowships</i>	<i>Completion</i>	<i>3 months</i>	<i>18 months</i>	<i>Case closed by PR</i>	<i>Total outstanding</i>
	Jordan	2	2	2	2	0	0
	Lithuania	8	7	5	6	0	6
	Macedonia, Former Yugoslav Rep. of	1	1	1	1	0	0
	Malta	2	1	1	1	0	3
	Moldova, Rep. 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
Subtotal		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
Subtotal		17	5	2	3	0	41
TOTAL		1 109	706	552	438	34	1 529

## Annex VII(a) FEL Study Completion Report

ORGANISATION MÉTÉOROLOGIQUE MONDIALE



WORLD METEOROLOGICAL ORGANIZATION

Téléphone: Int'l + 41 (0) 22 730 8111  
Facsimilé: Int'l + 41 (0) 22 730 8181  
Télégrammes: METEOMOND GENEVE  
Télex : 41 41 99 OMM CH

SECRETARIAT

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.	Family name	First name	Other names
2.	Country of origin		
3.	Date of birth (dd/mm/yyyy)		
4.	Gender	Male	Female
5.	Contact details	Postal address	Email address
		Telephone	
6.	Field(s) of study during fellowship / Title of training event		
7.	Fellowship dates	From (dd/mm/yyyy)	To (dd/mm/yyyy)
8.	Country of study		
9.	Institution		
10.	Qualifications obtained, if any		

### STUDY PROGRAMME

11. Did the study programme meet the objectives as stated in your fellowship award documentation? Please comment.

Not met	Slightly met	Somewhat met	Largely met	Fully met

12. Do you think your studies prepared you to contribute more effectively to the activities of the meteorological/hydrometeorological/hydrological service of your country? Please comment.

Not at all	Slightly yes	Somewhat yes	Largely yes	Fully yes

13. Do you consider that the duration of your fellowship was adequate? If no, what duration would you consider to be suitable (in weeks, months or years)?

Yes		No	
-----	--	----	--

14. How relevant will your studies be to the work you will be doing upon return to your home country? Please comment.

Not relevant	Slightly relevant	Somewhat relevant	Largely relevant	Fully relevant

**NON ACADEMIC ASPECTS OF THE FELLOWSHIP**

15. Did you receive your travel details and other instructions in time, and were your travel arrangements satisfactory? Please comment.

Yes		No	
-----	--	----	--

16. Did you encounter any difficulties in receiving stipend payments and/or your other entitlements? Please comment.

Yes		No	
-----	--	----	--

17. Do you have any suggestions on how to improve the social life of fellows in the country(ies) in which you studied? Please comment.

18. 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 as well as academic and non- academic staff of your training institution. Do you have any recommendations to make? Please comment.

**Note:** If you 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 8111  
Facsimilé: Int'l + 41 (0) 22 730 8181  
Télégrammes: METEOMOND GENEVE  
Télex : 41 41 99 OMM CH

SECRETARIAT

7 bis, avenue de la Paix  
Case Postale No. 2300  
Ch-1211 Genève 2  
GENÈVE - SUISSE

---

### 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.	<b>Family name</b>	<b>First name</b>	<b>Other names</b>
2.	<b>Country of origin</b>		
3.	<b>Date of birth (dd/mm/yyyy)</b>		
4.	<b>Gender</b>	<b>Male</b>	<b>Female</b>
5.	<b>Field(s) of study during fellowship / Title of training event</b>		
6.	<b>Fellowship dates</b>	<b>From (dd/mm/yyyy)</b>	<b>To (dd/mm/yyyy)</b>
7.	<b>Country of study and name of institution</b>		
8.	<b>Qualifications obtained, if any</b>		
9.	<b>Date of return to home country (dd/mm/yyyy)</b>		
10.	<b>Work resumed on/commenced on (dd/mm/yyyy)</b>		

**CAREER PROGRESSION**

11.	<b>Post held before fellowship</b>
12.	<b>Current post held</b>

<b>Date</b>	<b>Signature</b>
(dd/mm/yyyy)	<b>Permanent Representative with WMO</b>

**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 8111  
Facsimilé: Int'l + 41 (0) 22 730 8181  
Télégrammes: METEOMOND GENEVE  
Télex : 41 41 99 OMM CH

SECRETARIAT

7 bis, avenue de la Paix  
Case Postale No. 2300  
Ch-1211 Genève 2  
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 Fellowship Programmes.

*One report should be completed by the PR for each former fellow, 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)

Ref.: 05148/2021-1.0 CSG/ME

<b>1. Family name</b>	<b>First name</b>	<b>Other names</b>
<b>2. Country of origin</b>		
<b>3. Date of birth (dd/mm/yyyy)</b>		
<b>4. Gender</b>	<b>Male</b>	<b>Female</b>
<b>5. Fellowship dates</b>	<b>From (dd/mm/yyyy)</b>	<b>To (dd/mm/yyyy)</b>
<b>6. Country of study and name of institution</b>		
<b>7. Field(s) of study during fellowship/title of training event</b>		
<b>8. Qualifications obtained, if any</b>		
<b>9. Please list any honours or awards received during the study period</b>		
<b>10. Title and description of post held on commencement of fellowship</b>		
<b>11. Post currently occupied</b>		
Primary focus of your current job :		
<input type="checkbox"/> Policy matters		
<input type="checkbox"/> Management		
<input type="checkbox"/> Operational Services		
<input type="checkbox"/> Information/knowledge dissemination		
<input type="checkbox"/> Other (please specify)		
<b>12. Job description of post currently occupied</b>		

**13. Upon completion of your fellowship, did you pursue another degree training programme?**

<b>Yes</b>		<b>No</b>	If yes, please specify the degree and field of study
------------	--	-----------	--

**14. Please specify any diploma and/or training programme(s) attended**

(a) Diploma(s):

	Institute	
	Place	
	Date(s)	

(b) Training programme(s):

	Institute	
	Place	
	Date(s)	

<b>Place</b>	<b>Date</b>	<b>Signature of former fellow</b>

**PART. B**

**CAREER PROGRESSION**  
**(to be completed by Permanent Representative)**

*Please tick relevant box*

**1. Benefits, to the NMHS/Country, of the qualification obtained**

(a) Extent to which he/she gained knowledge that is useful in the job

<b>Not satisfactory</b>	<b>Slightly satisfactory</b>	<b>Somewhat satisfactory</b>	<b>Largely satisfactory</b>	<b>Fully satisfactory</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(b) Improvement in his/her confidence about performing their work

<b>Not satisfactory</b>	<b>Slightly satisfactory</b>	<b>Somewhat satisfactory</b>	<b>Largely satisfactory</b>	<b>Fully satisfactory</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(c) Higher progression in the same job

<b>Not satisfactory</b>	<b>Slightly satisfactory</b>	<b>Somewhat satisfactory</b>	<b>Largely satisfactory</b>	<b>Fully satisfactory</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(d) Higher mobility across jobs

<b>Not satisfactory</b>	<b>Slightly satisfactory</b>	<b>Somewhat satisfactory</b>	<b>Largely satisfactory</b>	<b>Fully satisfactory</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(e) Higher income in the same job/across jobs

<b>Not satisfactory</b>	<b>Slightly satisfactory</b>	<b>Somewhat satisfactory</b>	<b>Largely satisfactory</b>	<b>Fully satisfactory</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

<b>Not satisfactory</b>	<b>Slightly satisfactory</b>	<b>Somewhat satisfactory</b>	<b>Largely satisfactory</b>	<b>Fully satisfactory</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(g) Relevance of the enhanced skills to the country's needs

<b>Not satisfactory</b>	<b>Slightly satisfactory</b>	<b>Somewhat satisfactory</b>	<b>Largely satisfactory</b>	<b>Fully satisfactory</b>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**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**

**Date** (dd/mm/yyyy)

**Signature of Permanent Representative with WMO**

-----

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

<b>RA I</b>	<b>RA II</b>	<b>RA III</b>
<ol style="list-style-type: none"> <li>1. Benin</li> <li>2. Burkina Faso</li> <li>3. Cote d'Ivoire</li> <li>4. Ethiopia</li> <li>5. Gambia</li> <li>6. Ghana</li> <li>7. Guinea</li> <li>8. Kenya</li> <li>9. Lesotho</li> <li>10. Malawi</li> <li>11. Mali</li> <li>12. Mozambique</li> <li>13. Namibia</li> <li>14. Nigeria</li> <li>15. Rwanda</li> <li>16. Senegal</li> <li>17. Swaziland</li> <li>18. Tanzania</li> <li>19. Uganda</li> <li>20. Zambia</li> </ol>	<ol style="list-style-type: none"> <li>1. Hong Kong China</li> <li>2. Maldives</li> <li>3. Myanmar</li> <li>4. Pakistan</li> <li>5. Sri Lanka</li> <li>6. Tajikistan</li> <li>7. Uzbekistan</li> </ol>	<ol style="list-style-type: none"> <li>1. Argentina</li> <li>2. Brazil</li> <li>3. Costa Rica</li> <li>4. Guyana</li> <li>5. Paraguay</li> </ol>
<b>RA IV</b>	<b>RA V</b>	<b>RA VI</b>
<ol style="list-style-type: none"> <li>1. Antigua and Barbuda</li> <li>2. Belize</li> <li>3. Jamaica</li> <li>4. Saint Lucia</li> <li>5. Trinidad and Tobago</li> </ol>	<ol style="list-style-type: none"> <li>1. Fiji</li> <li>2. Indonesia</li> <li>3. Philippines</li> <li>4. Vanuatu</li> </ol>	<ol style="list-style-type: none"> <li>1. Lithuania</li> <li>2. Macedonia</li> <li>3. Moldova</li> <li>4. Armenia</li> <li>5. Belarus</li> </ol>

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)**

Ref.: 05148/2021-1.0 CSG/ME

<i>Event Title</i>	<i>Location</i>	<i>Date</i>
Training Seminar on Curriculum Development in Aeronautical Meteorology	Exeter, UK	11.03.2005
Training Course on Monsoon Meteorology	Nanjing, China	20.05.2005
Regional Training Seminar for National Instructors of RA II and RA V	Kuala Lumpur, Malaysia	27.05.2005
Regional Training Seminar for National Instructors of RA II and RA V	Kuala Lumpur, Malaysia	27.05.2005
Training Course on Use and Interpretation of city-specific Numerical Weather Prediction Products	Hong Kong, China	03.11.2005
Training Course on Design and Operation of Meteorological Warning Systems	Hong Kong, China	09.12.2005
Training Course on Aeronautical Meteorology	Beijing, China §	20.12.2005
International Training Course on Climate Change and Prediction	Nanjing, China §	30.06.2006
Training Course on Satellite Meteorology	Beijing, China §	08.09.2006
Statistics in Applied Climatology (SIAC) Course, IMTR, Nairobi, Kenya	Nairobi, Kenya §	15.09.2006
The Tenth WMO Symposium on Education and Training, "Meteorological and Hydrological Education and Training for Disaster Prevention and Mitigation"	Nanjing, China §	22.09.2006
Training Course on Nowcasting of Serious Convection	Beijing, China §	21.10.2006
Training Course on Agrometeorological Information Services	Beijing, China §	03.11.2006
Regional Training Seminar for National Trainers of RA I	Tripoli, Libya	15.03.2007
Training Course on Severe Convective Storm Nowcasting	Beijing, China §	12.04.2007
RA I Workshop on Human Resources Development Planning	Cairo §	18.04.2007
International Training Course on Satellite and Radar Meteorology	Nanjing, China §	27.05.2007
International Training Course on "Coastal Zone Natural Disaster Prevention & Warning", Beijing, China	Beijing, CHINA §	08.08.2007
International Training Course on "Agrometeorological Services for sustainable Agriculture"	Beijing, China §	07.09.2007

<b>Event Title</b>	<b>Location</b>	<b>Date</b>
International Training Course on "Agrometeorological Services for Sustainable Agriculture"	Beijing, China §	07.09.2007
International Training Course on Weather Modification, WMO RTC, Nanjing, China	Nanjing, China §	11.11.2007
Training Course on Automatic Weather Station Network	Hong-Kong, China	30.11.2007
Regional Training Seminar for National Trainers of RA III/IV	Caracas, Venezuela §	14.03.2008
International Training Seminar on "The Use of New Teaching Technologies in the Training and Retraining of Hydro-meteorological Specialists-2"	St. Petersburg §	16.05.2008
International Training Course on Preventing and Mitigating Meteorological Natural Disasters by Means of Remote Sensing	Alanya §	06.06.2008
International Training Course "Meteorological Hazards on Aviation; Forecasting and Effects on Flight Safety"	Alanya, Turkey §	13.06.2008
International Training Course on Agrometeorology	Nanjing, China §	17.06.2008
Statistics in Applied Climatology (SIAC) Course§	Nairobi, Kenya §	12.09.2008
4th International Training Course on "Meteorological Telecommunication and TURK-METCAP Software"	Alanya, Turkey §	10.10.2008
International Training Course on "Weather Radars"	Istanbul, Turkey §	17.10.2008
International Training Course on "Satellite Meteorology"	Beijing, China §	17.10.2008
International Training Course on "Upper Air Observing System"	Alanya, Turkey §	24.10.2008
Training Seminar on the Management of Meteorological Training Institutions	Langen, Germany	24.10.2008
International Training Course on Satellite & Radar Meteorology	Nanjing, China §	29.10.2008
International Training Course on "Weather Modification"	Beijing, China §	07.11.2008
International Training Course on "Automated Weather Observing Systems"	Alanya, Turkey §	10.11.2008
International Training Course on Climate Change and Desertification Processes - Assessment and Monitoring	Tel Aviv, Israel §	26.12.2008
Regional Training for National Trainers of RA II and RA V on "National Training, Coaching and Mentoring Practices"	Seoul, Korea	01.05.2009
International Training Course on "Climate Indices"	Alanya, Turkey §	29.05.2009

<b>Event Title</b>	<b>Location</b>	<b>Date</b>
The International Training Course on "Automated Weather Observing Systems"	Alanya, Turkey §	12.06.2009
International Training Course on "Weather Modification"	Beijing, China §	17.06.2009
International Training Course on "Multi-hazard Early Warning"	Nanjing §	26.06.2009
2nd International Training Course on Climate Change and Desertification Processes: Assessment and Monitoring	Tel Aviv, Israel §	10.07.2009
Training Workshop on Curriculum Development in Aeronautical Meteorology	RTC-Alanya §	09.10.2009
WMO Symposium on Meteorological Service in Support of Decision-making and Field Study	Beijing, China §	22.10.2009
International Training Course on "Agrometeorology"	Alanya, Turkey §	23.10.2009
International Training Course on "Basic Operation of Weather Radar and Use of Radar Products"	Hong Kong, China	04.12.2009
International Training Course on "Agrometeorology"	Nanjing, China §	04.12.2009
International Training Course on "Upper-Air-Observing Systems"	Istanbul, Turkey §	16.04.2010
International Training Course on "Weather Radars"	Istanbul, Turkey §	14.05.2010
Study Tour and WMO Symposium on Meteorological Service Delivery and Disaster Risk Reduction	Beijing, Nanjing, Shanghai, China	15.05.2010
International Training Course on "Multi-hazard Early Warning"	Nanjing, China §	28.05.2010
Regional Training Seminar for National Trainers of RA VI	Sibiu, Romania	28.05.2010
International Training Course on "Climate Applications"	Antalya, Turkey §	11.06.2010
Advanced International Workshop on "Operation of Meteorological and Agrometeorological Station Networks - Convention and Automatic	Bet Dagan, Israel §	15.06.2010
International Training Course on "Satellite Meteorology"	Beijing, China §	02.07.2010
International training course on "Agricultural Meteorology"	Beijing, China §	27.08.2010
International Training Course on Numerical Weather Prediction	Nanjing, China §	24.09.2010
5th International training course on "Meteorological telecommunication and METCAP software"	Alanya, Turkey §	30.09.2010

<b>Event Title</b>	<b>Location</b>	<b>Date</b>
Workshop on Human Resources Development for NMHSs in South American countries and SIDS	Lima, Peru	08.10.2010
Education and Training Symposium SYMET-XI	Bogor, Indonesia	29.10.2010
International Training Seminar on South-South Cooperation on Weather and Climate	Nanjing, China §	12.11.2010
Advanced workshop on "the application of meteorological to renewable energy and green building"	Bet Dagan, Israel §	29.11.2010
International Training Course on "Automated Weather Station Network"	Hong Kong, China	03.12.2010
International Training Seminar on Methods for Short-term Climate Prediction	Nanjing, China §	08.04.2011
International Training Course on "Satellite Meteorology"	Nanjing, China §	29.04.2011
Workshop on HRD for NMHSs in South and East African countries	Pretoria, South Africa	05.07.2011
Regional Training Seminar for National Instructors of RA II and RA V	Bogor, Indonesia	06.03.2013
International Training Course on Weather Radar Operation and Data Utilization	Seoul, Rep. of Korea	16.03.2013
International Training Seminar on Methods for Short-Term Climate Prediction	Beijing and Nanjing §	10.04.2013
International Training Course on Aeronautical Meteorology Services	Beijing, China §	19.04.2013
International Training Course on Nowcasting	Beijing, China §	17.05.2013
Advanced Workshop on "Climate change and agriculture"	Shefayim, Israel §	07.06.2013
Twelfth WMO Symposium on Education and Training (SYMET-XII)	Toulouse, France	06.09.2013
International Training Course on Use of Meteorological Instruments	Nanjing, China	25.09.2013
International Training Course, Basics of Calibration	Ankara, Turkey	04.10.2013
Training on "The Use of New Educational Technologies for Training and Retraining of Specialists in Hydrometeorology"	St. Petersburg, Russia	18.10.2013
International Training Course on Producing High Resolution Climate Information: Scientific Basis and Application	Seoul, Korea.	24.10.2013
International Training Course : "Regional Climate Prediction and Drought Monitoring"	Beijing, China	25.10.2013

<b>Event Title</b>	<b>Location</b>	<b>Date</b>
International Training Course on Tropical Cyclone Forecast	Nanjing, China	25.10.2013
International Training Workshop on "Aviation Meteorology for Forecasters"	Doha, Qatar	07.11.2013
International Training Course on Agrometeorology	Nanjing, China	08.11.2013
International Training Course on Agrometeorology	Nanjing, China	08.11.2013
Advanced workshop on Hydrometeorology: Impact of Climate Variability and Change on Water Resources	Shefayim, Israel	12.12.2013
International Training Course on "Effective Media Communication"	Hong Kong, China	13.12.2013
International Training Course on Weather Radar Operation	Seoul, Rep. of Korea	15.03.2014
International Training Course on Short-term Climate Prediction Methods	Beijing, China	25.04.2014
WMO online Training Seminar for National Instructors of RA I	Online	16.05.2014
International Training Course on Thunderstorms and Severe Convection Nowcasting, from 13 to 23 May 2014, Beijing, China	Beijing, China	23.05.2014
International Training Course on Tropical Cyclone Forecast	Nanjing, China	26.05.2014
International Training Course on WMO Information System (WIS) and Tehran GISC	Tehran, Iran	08.06.2014
International training course on Climate change impacts on agriculture systems in Africa	Florence, Italy	13.06.2014
International Training Course on Use of Meteorological Instruments	Nanjing, China	16.06.2014
Advanced Workshop on Climate Change and Agriculture	Shefayim, Israel	19.06.2014
International Training Course on Aeronautical Meteorology Services	Beijing, China	27.06.2014
International Training Course on Weather Modification	Beijing, China	29.08.2014
International training course on "Seasonal forecasts for agriculture in the Mediterranean@	Florence, Italy	26.09.2014
International Training Seminar on Meteorological Disasters Management for Officials from Developing Countries	Beijing, China	26.09.2014
International Training Course on Agrometeorology	Nanjing, China	30.09.2014

<b><i>Event Title</i></b>	<b><i>Location</i></b>	<b><i>Date</i></b>
International Training Course on Climate Monitoring, Prediction and Application	Beijing, China	31.10.2014
Course Development Workshop for Regional Training Institutions in WMO Regional Association I	Casablanca, Morocco	07.11.2014
International Training Workshop on Data Assimilation and Mesoscale Ensemble Forecasting	Hong Kong, China	05.12.2014
Workshop for Directors of WMO Regional Training Centres	Langen, Germany	20.03.2015
Advanced Workshop on Climate Change and Agriculture	Bet Dagan, Israel	14.05.2015
WMO Online Training for Trainers of RA VI	Online	31.05.2015
Online training course for trainers of RA VI	Online	31.05.2015



**Annex IX(b) List of Familiarization Visits**

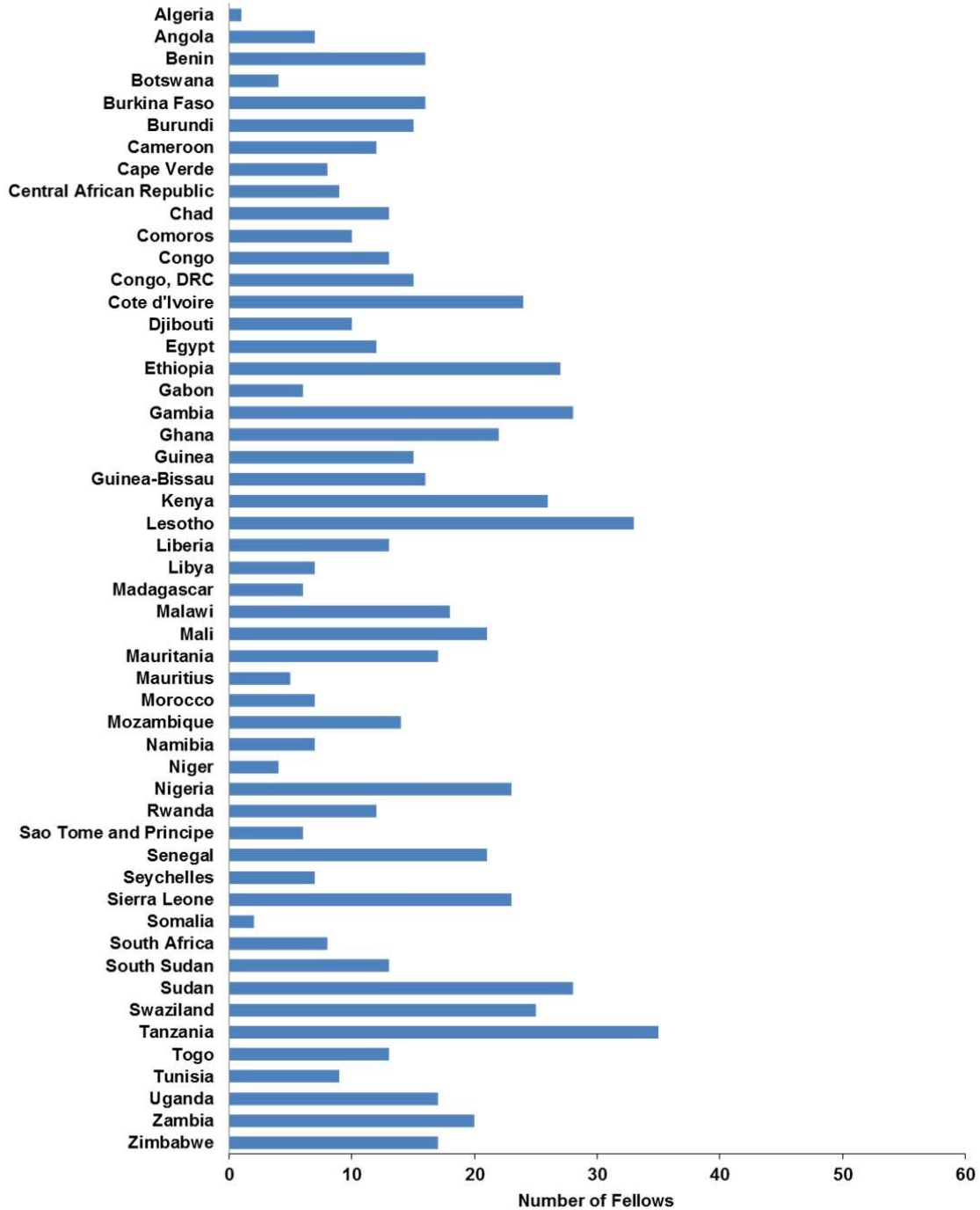
<i>Home country</i>	<i>Name of PR</i>	<i>Host country</i>	<i>Place of visit</i>	<i>Date</i>
Morocco	Abdallah	Switzerland	WMO Secretariat	07.09.2017
Uganda	LUBOYERA, Festus	Switzerland	WMO Secretariat	07.10.2016
Senegal	NDAO, Magueye Marame	Switzerland	WMO Secretariat	07.09.2016
Tajikistan	RASULZODA, Homidjon	Switzerland	WMO Secretariat	16.09.2016
Congo	KANGA, Alphonse	Switzerland	WMO Secretariat	07.09.2016
Somalia	SHURIE, Omar Haji Mohamed	Switzerland	WMO Secretariat, UK Met Office, Kenya Met Office	19.06.2016
Hungary	RADICS, Kornelia	Switzerland	WMO	09.09.2016
Kenya	KONGOTI, James	Switzerland	UK Met Office, WMO Secretariat, South African Weather Service	31.08.2015
Mauritania	CHEIKH MOHAMED ELMAMY, Mohamed Batta	Switzerland	WMO Secretariat, Algeria	14.09.2016
Philippines	MALANO, Vicente B.	Switzerland	WMO Secretariat	07.12.2014
Serbia	NIKOLIC, Jugoslav	Switzerland	Meteorologist	03.10.2014
South Sudan	AYOKER, Mojawok Ogawi Modo	Switzerland	WMO, Kenya	24.03.2015
Kazakhstan	MENDIGARIN, Aibek	Switzerland	Switzerland, Spain	19.11.2013
Ethiopia	TOLA, Fetene Teshome	Switzerland	Meteorologist	13.09.2013
Niger	TRAORE, Abdoul-Karim	Switzerland	WMO Secretariat	22.03.2013
Cote d'Ivoire	KONATE, Daouda	Switzerland	WMO Secretariat	22.03.2013
Burkina Faso	GARANE, Ali Jacques	Switzerland	WMO Secretariat	22.03.2013
Sri Lanka	SAMARASINGHE, G.B.	Switzerland	PR	03.09.2009
Ghana	KOMLA, Stephen Y.	Switzerland	WMO, UK	07.09.2013
Malawi	NKHOKWE, Jolamu L.	Switzerland	WMO, Kenya	07.09.2013
Sudan	ABDALLA, Abdalla Khyar	Switzerland	WMO Secretariat, UK Met, Egypt NMS	18.06.2013
Tanzania, United Rep. of	KIJAZI, Agnes	Switzerland	WMO Secretariat, UK & South Africa Met	14.09.2013
Sierra Leone	BOCKARI, Alpha	Switzerland	WMO, UK, Nigeria	20.09.2013
Djibouti	SAID, Osman Saad	Switzerland	WMO, Météo-France, S. Africa Met	14.09.2013
Tunisia	NMIRI, Abdel W.	Switzerland	WMO, UK, SA Met Service	12.09.2013
Benin	NAKPON, Kokou Marcellin	Switzerland	Switzerland, Morocco	28.04.2017
Benin	KASSIN, Martin	Switzerland	France, Kenya, Switzerland	22.03.2013
Congo, The Democratic Republic of the	MPUNDU ELONGA, Jean-Pierre	Switzerland	WMO Secretariat, France, Niger	14.03.2012
Serbia	DIMITRIEV, Vancho	Switzerland	WMO Headquarters	07.12.2011
Kyrgyzstan	ITIBAEV, ZaryIbek	Switzerland	Roshydromet, Météo-France & WMO HQ	08.06.2010
Cape Verde	ARAUJO DE BRITO, Ester	Switzerland	WMO, Spain, Nigeria	13.10.2010
Ghana	TANU, Michael	Switzerland	Hydrometeorological Services	03.12.2009
Rwanda	NTAGANDA SEMAFARA, John	Switzerland	WMO Secretariat, UK Met, Kenya Met	09.11.2011
Malta	GALDIES, Charles	Switzerland	Secretariat	18.02.2008
Gabon	ONDO ELLA, Martin	Switzerland	WMO, Météo-France, Senegal Met Service	16.07.2008
Belarus	GERMENCHUK, Maria	Switzerland	NMHS	11.02.2009
South Africa	MAKULENI, Linda	Switzerland	WMO Secretariat, UK, India	08.11.2007

<i>Home country</i>	<i>Name of PR</i>	<i>Host country</i>	<i>Place of visit</i>	<i>Date</i>
Serbia	KOTEV, Gjorgji	Switzerland	WMO HQ	25.01.2007
Cameroon	NGUILAMBOUHE BONGLA, Andre	Switzerland	WMO Secretariat	12.09.2012
Poland	OSTOJSKI, Mieczyslaw S.	Switzerland	Geneva	30.11.2006
Armenia	VARDANYAN, Levon	Switzerland	WMO Geneva	20.10.2006
Gabon	ELLA ASSEKO, Lambert	Switzerland	WMO Secretariat	12.10.2006
Ecuador	ANDRADE CHAVEZ, Laureano	Switzerland	WMO	03.04.2006
Senegal	KAMARA, Mamina	Switzerland	Switzerland	10.10.2014
Mozambique	BENESSENE, Moises Vicente	Switzerland	WMO Secretariat, Portugal, Tanzania	24.09.2008
Romania	POIANA, Ion	Switzerland	WMO Secretariat	07.05.2005
Guinea-Bissau	ALVARENGA, Manuel Carvalho	Switzerland	WMO Secretariat, Météo- France, NMS Senegal	27.04.2005
Lithuania	AUGULIENE, Vida	Switzerland	Switzerland	28.09.2007
Guinea-Bissau	SAMBU, Fernando Baial	Switzerland	Geneva, Madrid, Dakar	23.05.2008
Ethiopia	ASSEFA, Kidane	Switzerland	WMO, UK Met, Kenya Met	29.11.2007
Chad	MBAITOUBAM, Elie	Switzerland	Switzerland	10.10.2014
Paraguay	GONZALEZ VERA, Domingo German	Switzerland	WMO Secretariat	16.02.2008
Senegal	NDIAYE, Mactar	Switzerland	WMO Secretariat, Météo- France, Tunisia Met	18.02.2006
Liberia	GAR-GLAHN, Arthur	Switzerland	WMO, UK, NIMET	18.06.2013
Zambia	MUCHINDA, Maurice	Switzerland	WMO, Met Office and Tanzania Meteorological Agency	16.08.2005
Tunisia	RAJHI, MONCEF	Switzerland	National Institute of Meteorology	20.08.2005
Sao Tome and Principe	VAZ LIMA, João Vicente Domingos	Switzerland	WMO Secretariat, NMSs Portugal and Senegal	21.10.2009
Ethiopia	SHANKO, Dula	Switzerland	WMO Secretariat	26.07.2012
Tajikistan	SAFAROV, Mahmad	Switzerland	WMO, Russia or China	06.09.2013
Guyana	SEULALL, Bhaleka Devi	Switzerland	WMO HQ	25.10.2008
Mauritania	OULD MOHAMED LAGHDAF, Mohamed Bechir	Switzerland	WMO Secretariat	30.03.20
Central African Republic	TETEYA, Joël-Urbain	Switzerland	WMO Secretariat	03.02.2010
Gambia	TOURAY, Lamin Mai	Switzerland	WMO Secretariat, UK Met Office	07.09.2016
Guinea-Bissau	TCHEDNA, Joao Lona	Switzerland	Switzerland, Portugal and Senegal	25.01.2010
Zambia	NKOMOKI, Jacob	Switzerland	WMO, UK, Tanzania or Kenya	05.07.2010
Uganda	NKALUBO, Michael S.Z.	Switzerland	WMO Secretariat	09.11.2011
Georgia	CHITANAVA, Ramaz- Beglarovic	Switzerland	WMO HQ	01.12.2006
Croatia	CACIC, Ivan	Switzerland	World Meteorological Organization (WMO)	15.06.2005
Slovakia	RONCAK, Peter	Switzerland	WMO HQ, NMI Spain	28.06.2006
Seychelles	AMELIE, Vincent	Switzerland	WMO Secretariat	07.09.2016
Cameroon	ONDOUA, Etienne G.	Switzerland	WMO Secretariat	13.09.2006
Cameroon	SAAH, Michel Legrand	Switzerland	WMO Secretariat, UK,	01.01.2009

<i>Home country</i>	<i>Name of PR</i>	<i>Host country</i>	<i>Place of visit</i>	<i>Date</i>
			Senegal	
Comoros	POUNDJA, Mahamoud Ali Bay	Switzerland	WMO, France and Tanzania	29.09.2011
The Gambia	GOMEZ, Bernard Edward	Switzerland	WMO Secretariat, UK, Nigeria Met	02.08.2008

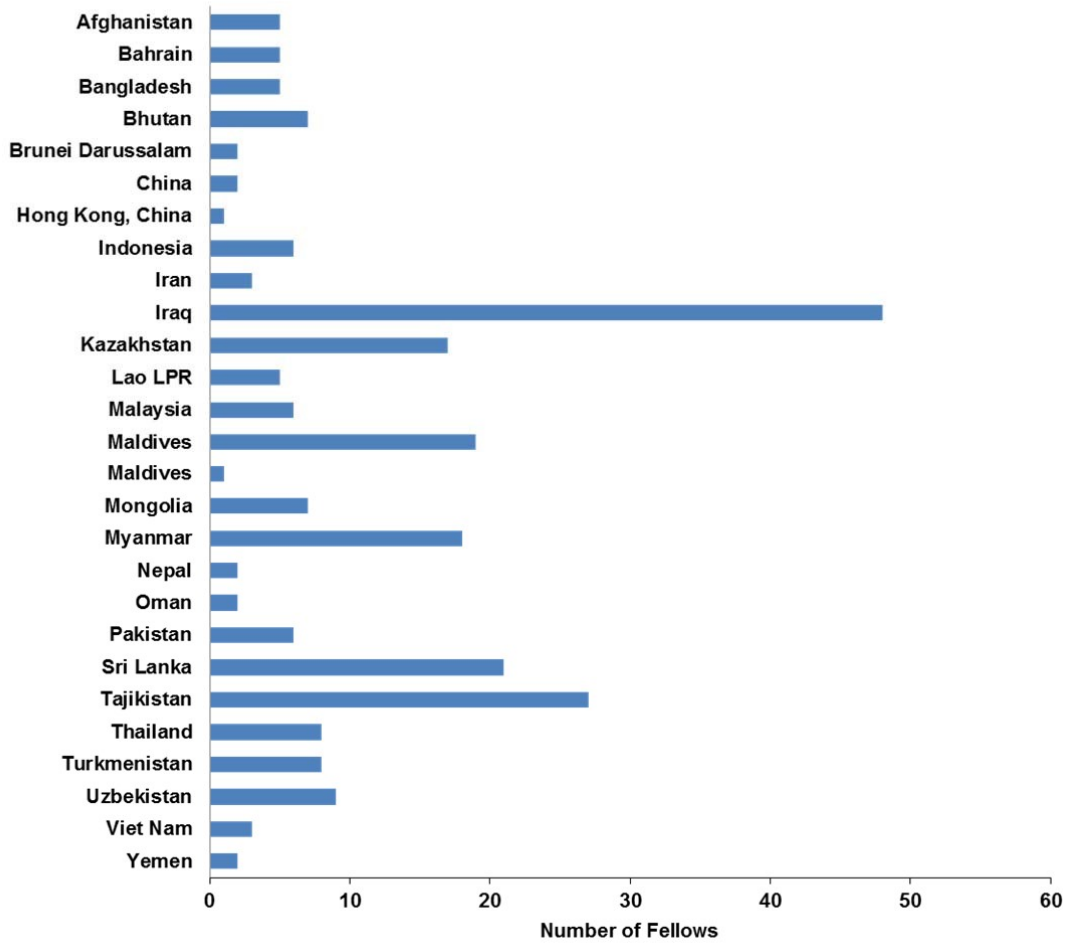
**Annex X      Number of Benefited Staff Members from all WMO Regions**

**Total Number of Benefited Staff Members - Fellowship Database RA I**

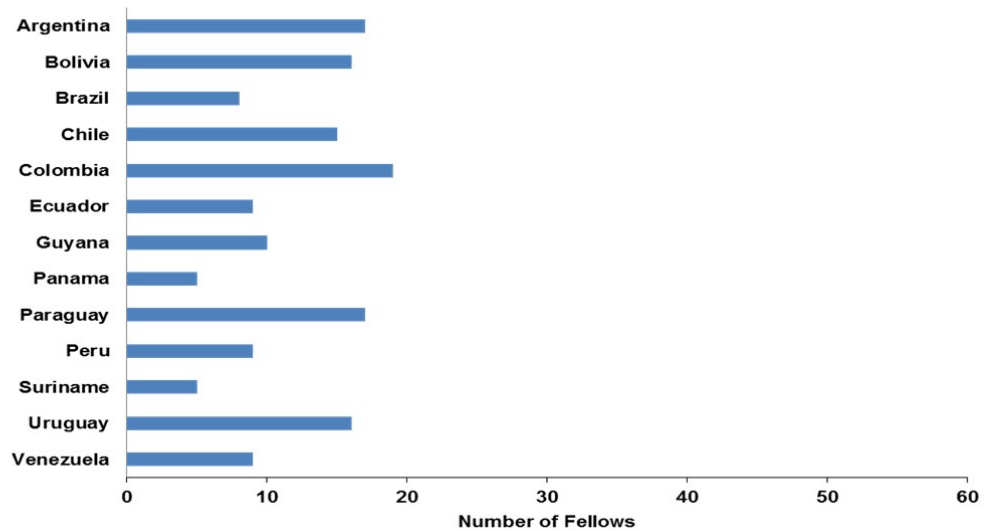


Ref.: 05148/2021-1.0 CSG/ME

**Total Number of Benefited Staff Members - Fellowship Database RA II**

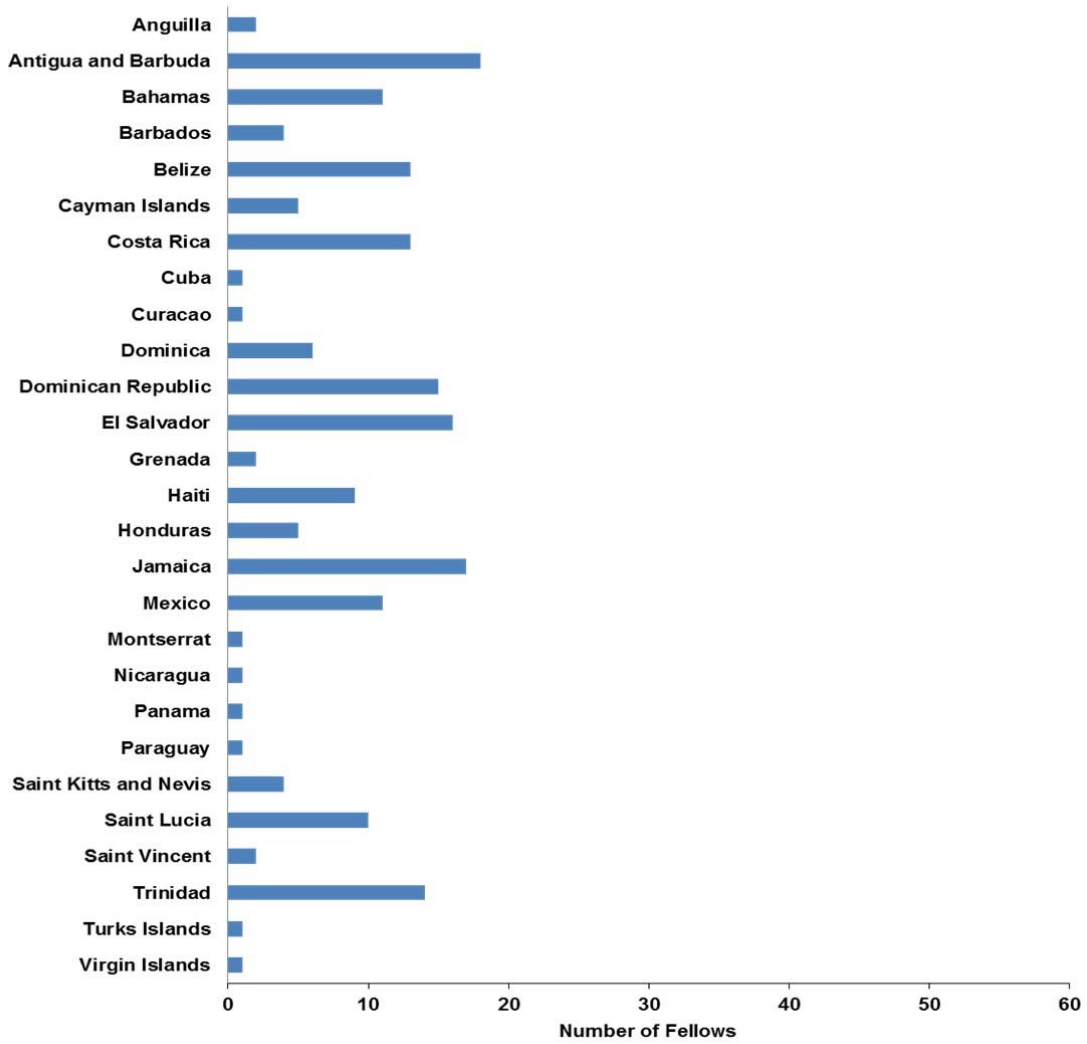


**Total Number of Benefited Staff Members - Fellowship Database RA III**

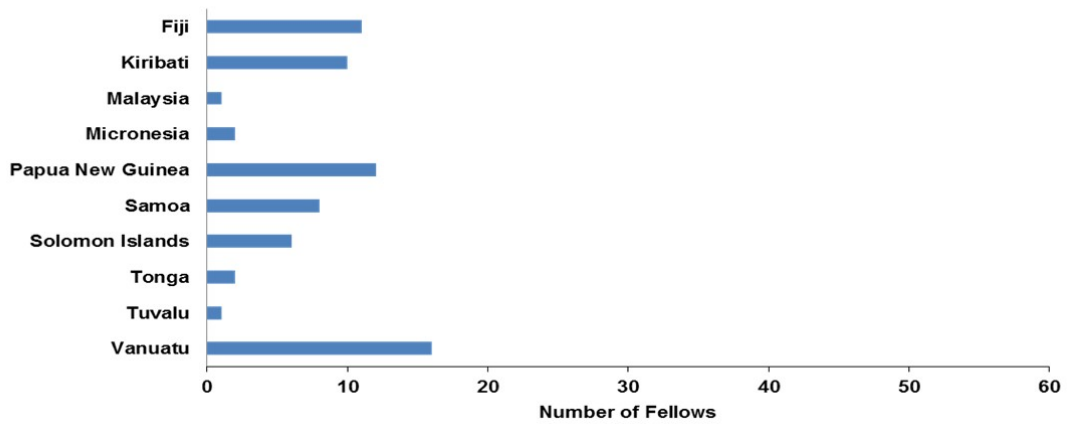


Ref.: 05148/2021-1.0 CSG/ME

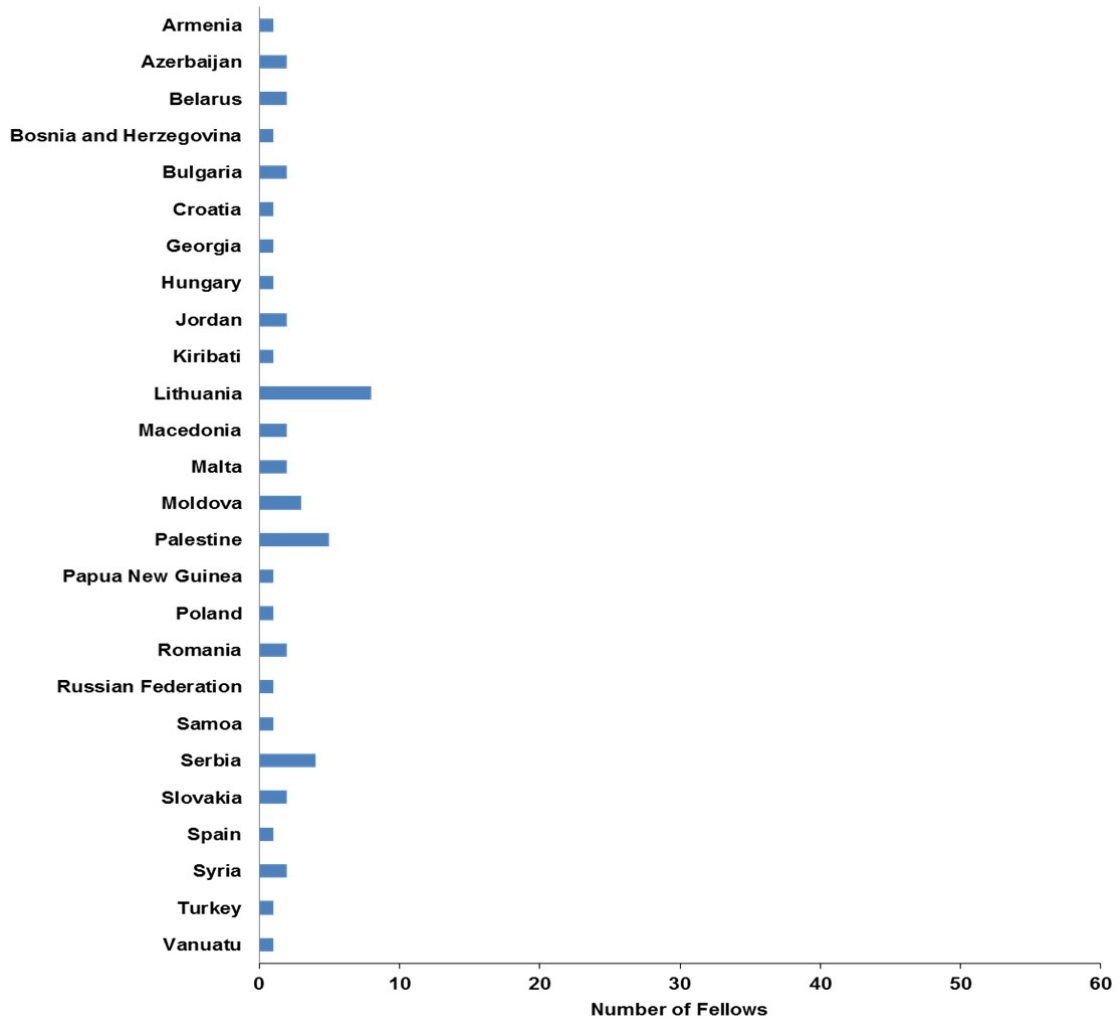
Total Number of Benefited Staff Members - Fellowship Database RA IV



Total Number of Benefited Staff Members - Fellowship Database RA V



Total Number of Benefited Staff Members - Fellowship Database RA VI



**Annex XI Responses from the Electronic Questionnaire (1) for developing countries**

**Table I**

<b>Question 6</b> Current fields of activity since returning	<b>Responses (%)</b>
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**

<b>Question 8</b> How would you rate the training provided by the RTCs and other regional institutions?	<b>Rating</b>	<b>Responses (%)</b>
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**

<b>Question 25</b> Contribution of the Fellowship Programme to development activities at national and regional levels	<b>Rating</b>	<b>Responses (%)</b>
<b>(i)</b> Increasing the number of qualified and competent staff	Poor	0
	Fair	0
	Good	29
	Very good	34
	Excellent	37
<b>(ii)</b> Addressing current and emerging demands on weather, climate and water, aviation, marine, and agricultural	Poor	0
	Fair	0
	Good	21
	Very good	63
	Excellent	16
<b>(iii)</b> Transfer of knowledge to other staff members	Poor	0
	Fair	3
	Good	29
	Very good	47
	Excellent	21
<b>(iv)</b> Promoting visibility of NMHSs	Poor	3
	Fair	5
	Good	26
	Very good	47
	Excellent	18
<b>(v)</b> Contributing to socioeconomic development	Poor	0
	Fair	5
	Good	30
	Very good	43
	Excellent	22

**Table IV**

<b>Question 26</b> Impact on an international level	<b>Impact</b>	<b>Responses (%)</b>
<b>(i)</b> Networking with relevant partners and activities	Poor	0
	Fair	3
	Good	24
	Very good	43
	Excellent	30
<b>(ii)</b> Involvement with host institution's activities	Poor	0
	Fair	0
	Good	37
	Very good	37
	Excellent	26
<b>(iii)</b> Participation in WMO bodies, expert working groups including IPCC and COP	Poor	3
	Fair	21
	Good	24
	Very good	32
	Excellent	21
<b>(iv)</b> Participation in other international cooperation structures and bodies	Poor	3
	Fair	18
	Good	29
	Very good	26
	Excellent	24
<b>(v)</b> Other	Poor	0
	Fair	15
	Good	40
	Very good	30
	Excellent	15

**Table V**

<b>Question 27</b> Relevance of the Fellowship Programme	<b>Rating</b>	<b>Responses (%)</b>
<b>A.</b> 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>B.</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
<b>C.</b> 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
<b>D.</b> The activities and outputs of the Fellowship Programme are consistent with the intended impact	Strongly disagree	0
	Disagree	0
	Neutral	11
	Agree	55
	Strongly agree	34
	N/A – not applicable	0
<b>E.</b> The WMO Fellowship Programme is delivered effectively at 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				
	<i>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.</i>	<i>How important are climate and water-related issues in the development cooperation programme of your country?</i>	<i>What would you consider major factors which could influence the achievement or non-achievement of sustainability impact of the Fellowship Programme at national, regional and global levels?</i>	<i>Please provide suggestions on resources mobilization options for capacity development on weather, climate and water issues through the WMO Fellowship Programme.</i>	<i>Please provide any other comments on how to ensure sustainability and continued relevance of the WMO Fellowship Programme.</i>
China	<p>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 capacity development of recipient countries and cooperation between China and those countries.</p> <p>It would be more beneficial if the WMO fellowship could be advertised with a wider coverage and more diversified channels.</p>	<p>Climate and water-related issues are attracting increased attention and are becoming more important in bilateral and multilateral cooperation in China. China hosts the Regional Climate Centre of RA II and holds the Forum on Regional Climate Monitoring, Assessment and Prediction for Asia (FOCR/II) 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.</p>	<p>To ensure the sustainable impact of the Fellowship Programme is to guarantee the students that have the real demands receive qualified education. <b>1.</b> 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. <b>2.</b> Supply/demand studies should be carried out on whether such talents are needed in specific countries, and if there are career opportunities in those countries. Students' motivation would increase if jobs were available in their NMHSs upon completion of</p>	<p>WMO Fellowship Programme is an effective way to develop capacity in developing countries in the long run. Human resources are one of the fundamental elements in meteorological development in developing countries. More opportunities would be explored if its benefits are demonstrated in a broad and influential way.</p>	None.

			<p>their study. <b>3.</b> Institutions offering fellowship should be qualified and under supervision. <b>4.</b> Tracking the students' future development. The effect of distinguished or honourable graduates is the strong driver to sustain this programme.</p>		
<p><b>Météo-France, France</b></p>	<p>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.</p> <p>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.</p>	<p>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.</p> <p>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 different departments of Météo-France, but also from WMO, Universities and Research Centres, and Météo-France International</p>	<p>Some factors that we could consider as major to influence the achievement or non-achievement of sustainability of the Fellowship Programme:</p> <ul style="list-style-type: none"> <li>- Supporting both trainings that will improve technical skills of staff and trainings that will strengthen organisational aspects (management, communication, project management...);</li> <li>- 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 country;</li> <li>- Promoting trainings which</li> </ul>	<p>Some solutions to deal with the uncertainties in c/, follow.</p> <ul style="list-style-type: none"> <li>- Training in the country itself</li> </ul> <p>The offer of the catalogue ENM obliges to pass through Toulouse and is therefore expensive especially air tickets. Therefore, a key is to try to develop training 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 other countries in the framework of national,</p>	<p>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.</p>

<p>It also allows to match trainings needs of different levels, i.e.:</p> <ul style="list-style-type: none"> <li>- initial training, for students that will work in the NMS after graduation and strengthen the national staff;</li> <li>- capacity building in management for technically experimented agents;</li> <li>- acquisition or improvement of operational skills for existing staff.</li> </ul> <p>With more details :</p> <p><b>1/</b> 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).</p> <p><b>2/</b> The WMO Fellowship Programme addresses also the need for the development of human capacity on planning, management, communication and other</p>	<p>contributed to the success of the event.</p> <p>A special feature for 2017, supported by a WMO initiative also trained a future trainer.</p> <p>The new 2017 "Meteorology on Africa zone" course could help to manage water related issues.</p>	<p>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.</p>	<p>regional or global program.</p> <ul style="list-style-type: none"> <li>- On line learning</li> </ul> <p>The development of this type of on line learning is considered for the future.</p> <p>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.</p>	
--	--	--	---	--

<p>administrative and support functions. Indeed, since 2013, 10 trainees from Africa/Haiti have been following for 3 months in Toulouse the " Météo and management " course, thanks to co-funding MF/WMO fellowships.</p> <p><b>3/</b> 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).</p> <p>Furthermore since 2016, the general co-funding of PCV-France (financial supports for subsistence) and WMO (airline tickets) has facilitated</p>				
--	--	--	--	--

<p>the attending of a lot of trainees from NMSs in diverse core meteorology areas as forecasting, organization of forecasting, remote detection from space, aeronautical meteorology, marine meteorology.</p> <p>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 continuing education in 2016 has doubled and reached the number of 78.</p> <p>As the needs are significant, the volume of financial support may increase, but the current mechanism may be seen as helpful and relevant.</p> <p>Possible steps to strengthen the efficiency of the programme in our view:</p> <ul style="list-style-type: none"> <li>- be sure that the training corresponds to the country's needs, and work with countries to better match</li> </ul>				
--	--	--	--	--



	<p>training expectations and proposed training;</p> <ul style="list-style-type: none"> <li>- 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;</li> <li>- address the problem of the pre-requisite skills, especially for initial training.</li> </ul> <p>New courses in preparation:</p> <p>In 2017, MF launches a new course "Meteorology on Zone Africa", for sub-Saharan NMSS.</p> <p>MF examines the interest to organize in 2018 a "Meteorology on Africa zone" course in English in place of the "Weather Forecasting module 2", in December.</p>				
<p><b>Korea</b></p>	<p>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</p>	<p>Currently, most of the programme of Korea's development cooperation programme, in terms of training courses, focuses on forecasting technology, such as Information and</p>	<p>Budget, regional balance, and relevant education and training programmes</p>	<p>Provide focused support to selected RTC ETR programmes, for example, providing air fares for long-term programmes such as master or PhD courses</p>	<p>It is important to appropriately combine the WMO fellowship programme with the programs provided by the</p>

	between the programme and the RTC-Korea should be enhanced under the umbrella of the WMO.	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.			Members
<b>Spain</b>	<p>The WMO Fellowship Programme 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.</p> <p>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 Programme has been fundamental in 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</p>	<p>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.</p> <p>Among the priority sectors of the 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.</p>	<p>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.</p>	<p>We suggest the following:</p> <ul style="list-style-type: none"> <li>• To provide training on project formulation that allows access to the different existing funding mechanisms.</li> </ul>	<p>We propose the following actions:</p> <ul style="list-style-type: none"> <li>• To maintain the appropriate priority within the WMO-EC.</li> <li>• To encourage blended training courses to reduce significantly the costs associated with student's stays.</li> </ul>

	<p>Programme 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 Programme is a fundamental element for the development of the NMHSs and request the programme to be maintained with similar conditions to the current ones and with an increase to be considered."</p> <p>At the moment, Spain intends to request the approval by WMO of a Regional Training Centre to regularize all its training actions in Spanish oriented towards Latin America, and of course in this regard the scholarship programme would be absolutely imperative.</p>				
<b>Russia</b>	<p>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,</p>	<p>RTC components in Russia offer short- and long-term education and training programs in climate and water-related issues. There</p>	<p>For RSHU the major factor is that there is no agreement between the RF Government and WMO which undoubtedly confirm the allocation of the</p>	<p>Conducting of scientific research and development for commercial companies. WMO and RTCs as its</p>	<p>Similar questionnaire needs to be sent to all past WMO fellows. They have</p>

	<p>knowledge which they receive from our professors is very appreciated in their countries. Every year someone from the WMO fellows ask 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.</p>	<p>is a growing national demand for short-term programs in climate services, which ATI currently addresses, while water issues have been covered there traditionally.</p>	<p>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. In the absence of such an agreement it will be very tough for RSHU to meet 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.</p>	<p>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.</p>	<p>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.</p>
<p><b>UK Met Office, United Kingdom</b></p>	<p>The Fellowship Programme enables students from developing countries to attend training programs in developed countries and gain valuable qualifications and cultural experiences over an extended period of time. The programme could be re-positioned to provide greater</p>	<p>Huge effort, and funding is provided by UK aid to support climate and water-related issues and the use of 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</p>	<p>The achievement or non-achievement of the fellowship, at all levels, will be influenced by the perception of value for 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</p>	<p>The IMTR – UK MOC collaboration, under the DFID WISER programme, provides an interesting template where experts from developed countries provide in-country expertise and capacity building and use the</p>	<ul style="list-style-type: none"> <li>• More effective measurement of the impacts of the training, both on the individual and on the recipient organisation. This work has begun recently.</li> </ul>

	<p>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.</p>	<p>aid package.</p>	<p>who are funded.</p>	<p>RTC model to provide much more cost effective training. This approach was taken at a regional level where the delegate's 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 travelling 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 programme as described</p>	<ul style="list-style-type: none"> <li>• Greater, and more transparent, collaboration between the NMHSs 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.</li> <li>• 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.</li> <li>• Ongoing strategy to make the best use of e-learning and other technological advances with an</li> </ul>
--	---	---------------------	------------------------	--	---

				in C.	acceptance that all teaching methods have strengths and weaknesses and identify the most appropriate method for the training.
<b>University of Reading, UK</b>	<p>The University of Reading has supported the WMO Fellowship Programme through its MSc programmes, including instigating the now five-year old MSc titled Applied Meteorology &amp; 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 from 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</p>	<p>Climate and water-related issues continue to play an important role in 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.</p>	<p>For the University, financial support remains the major factor. We attract good 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</p>	<p>Close links and partnerships with Met Office and ECNWF 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</p>	<p>Continued relevance presumably in part is 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.</p>

	<p>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.</p>		<p>continue to lead development in their own countries.</p>	<p>representatives for internationalisation and master development.</p>	
<p><b>USA</b></p>	<p>The USA provides fellowship funding and courses for participants. The USA does not use fellowships to train staff.</p>	<p>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</p>	<p>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.</p>	<p>If we had long term metrics on retention and impact of the fellowship recipients, it would help with resource mobilization to support continuing fellowships.</p>	<p>The key to ensure sustainability is to capture impact metrics and retention statistics for the program.</p>

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

Ref.: 05148/2021-1.0 CSG/ME

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



For more information, please contact:

**World Meteorological Organization**

7 bis, avenue de la Paix – P.O. Box 2300 – CH 1211 Geneva 2 – Switzerland

**Communications and Public Affairs Office**

Tel.: +41 (0) 22 730 83 14/15 – Fax: +41 (0) 22 730 80 27

Email: [cpa@wmo.int](mailto:cpa@wmo.int)

[public.wmo.int](http://public.wmo.int)