

**Documentation of the Impacts of ACCFP Fellows on Climate Change  
Adaptation and Mitigation in Africa since Inception**

**By**

**Ernest Acheampong**

Research Officer  
African Technology Policy Studies Network (ATPS)  
8<sup>th</sup> Floor, Chancery Building, Valley Road  
P.O. Box 10081-00100, Nairobi  
Kenya

**Supervisor:**

**Dr. Nicholas Ozor**

Executive Director  
African Technology Policy Studies Network (ATPS)  
8<sup>th</sup> Floor, Chancery Building, Valley Road  
P.O. Box 10081-00100, Nairobi  
Kenya

**March 2016**

## Table of Contents

1	Introduction .....	8
1.1	Rationale .....	9
2	Conceptual Framework.....	10
2.1	Sources of Impact.....	11
2.2	Impact dynamics .....	12
3	Limitations of the evaluation .....	12
4	Methodology.....	14
4.1	Data Collection Approach .....	14
4.2	Data Analysis.....	15
5	Results and Discussion .....	16
5.1	Age of fellows.....	16
5.2	Institutional representation of ACCFP fellows.....	17
5.3	Profession background and positions held by fellows.....	17
5.4	Home country of ACCFP fellows .....	18
5.5	Fellows' academic qualification .....	19
5.6	Round of ACCFP Program.....	20
5.7	Types of ACCFP fellowship.....	20
5.8	Focal areas of fellows.....	21
5.9	Major impacts of the ACCFP program on individual or professional careers.....	22
5.10	Level of Fellows' impact.....	23
5.11	Fellows impact on key development priority areas.....	24
5.12	Fellows' contribution to climate change adaptation and mitigation .....	25
5.13	Climate change conferences attended by fellows .....	26
5.14	Publications on climate change adaptation and mitigation since ACCFP fellowship .....	27
5.15	Climate awards, job promotion and other opportunities.....	28
5.16	Capacity to mentor other ACCFP Fellow since completing fellowship .....	29
5.17	Impact of the ACCFP program on career development.....	29
5.18	Performance of the ACCFP program.....	31
5.19	Emerging areas of focus in climate change adaptation and mitigation .....	31
5.20	Challenges during ACCFP fellowship.....	32
5.21	Way forward .....	32

6	Conclusions and Recommendation.....	34
6.1	Summary of Conclusions.....	34
6.2	Recommendations .....	35
7	References .....	37

## List of Figures

Figure 1:	Gender of fellows.....	16
Figure 2:	Age of fellows.....	16
Figure 3:	Institution of fellows .....	17
Figure 4:	Positions held by fellows.....	18
Figure 5:	Fellows’ distribution by country .....	19
Figure 6:	Academic qualification.....	19
Figure 7:	Rounds of ACCFP Program.....	20
Figure 8:	Types of ACCFP fellowship.....	21
Figure 9:	Areas of climate change addressed by fellowship.....	22
Figure 10:	Major impacts of the ACCFP program on individual or professional careers.....	23
Figure 11:	Level of impact.....	24
Figure 12:	Fellows Impact on Key development priority areas .....	25
Figure 13:	Fellows’ contributions to climate change efforts .....	26
Figure 14:	Climate change conferences attended .....	27
Figure 15:	Publications produced since ACCFP fellowship .....	28

## List of Tables

Table 1	Mean scores of fellows on the impact of the ACCFP fellowship on careers.....	30
Table 2	Mean scores of fellows on the performance of ACCFP fellowship .....	31

## **Executive Summary**

The African Climate Change Fellowship Program (ACCFP) is a cutting-edge fellowship opportunity that seeks to strengthen capacities of early to mid-career African professionals to advance scientific knowledge that can inform climate adaptation planning and policy in Africa. Fellows of the program represents a cadre of climate change specialists who are conducting and promoting climate change research, education and policy to support Africa's efforts in coping with climate variability and change, and reducing the vulnerability of the continent. Since the inception of the program in 2008, around 120 ACCFP Fellows have been matched with universities, research centers, and other host institutions across Africa where they have collaborated with mentors and supervisors to implement individually designed innovative projects.

This study presents an analysis of the impact of the ACCFP program as reported by the Fellows in their contribution to climate science, education and policy development for climate change adaptation and mitigation in Africa. The study was conducted through an on-line questionnaire survey and analysis of background literature, combining both objective and subjective measures of impact. The content of the questionnaire was guided by selected key indicators for impact analysis including: (1) socio-biographical backgrounds of Fellows, (2) educational backgrounds of Fellows, (3) employment and career progression, (4) Key development focus areas of Fellows, (5) Fellows' Outputs and (6) Fellows impact satisfaction. Out of about 120 Fellows who have participated in the ACCFP program, 30 Fellows responded to the online survey within a period of one month. The study received responses from Fellows from all the different types of ACCFP fellowship since its inception. The study findings revealed that the ACCFP is regarded to be a very relevant and successful fellowship program that has been a game changer for fellows who participated in the program. Below are the summary of the findings from the study:

### **Major impacts of the ACCFP program on individual or professional careers**

Around 25% of the fellows indicated that through the ACCFP program they have significantly expanded their networks with other professional colleagues, climate change organizations and institutions, thereby exposing them to collaborations and partnerships for climate change research and other related projects. About 20% of the fellows said that they have deepened knowledge on climate change through the training and mentorship from the ACCFP training workshops. More than 15% of the fellows associated their improved capacity to publish peer-reviewed journal articles and research papers with their participation in the ACCFP program. Around 10% of the fellows witnessed improvement in conducting sound and credible research following their experience with renowned research supervisors and experts in the ACCFP program. Fellows (12%) also experienced improved exposure to regional and international platforms on climate change through the mobility of the ACCFP program. Other areas of impacts included improved career development and advancement (6%), increased access to other training and funding opportunities (4%), improved capacity to influence policy through evidence-based research (2%), and improved capacity to develop bankable proposal and grants (2%).

### **Level of impact**

Following their ACCFP fellowship, majority of the fellows (32%) considered to have made the greatest contribution to climate change issues at the provincial/state/county level. Approximately 29% of fellows indicated that they have made significant impact on climate change adaptation at the national level. Around 19% of fellows said they have contributed to climate change adaptation issues at regional and global levels respectively.

### **Fellows Impact on Key development priority areas**

Response from fellows suggested a wide array of key areas where they have worked in order to contribute to the adaptation and mitigation of climate change. Approximately 27% of the fellows were working in the key development priority areas of agriculture and environmental protection respectively. Close to 15% of fellows were contributing their climate change expertise in the area of water, while more than 10% of the fellows were working on land degradation. Other key development area where fellows were working included education (9%), health (4%), energy (2%), urban development (2%), forestry (2%) and climate induce migration (2%).

### **Fellows' contribution to climate change adaptation and mitigation**

Since their experience with the ACCFP program, around 15% of the fellows indicated that they have led or contributed to the review of climate policies or formulating climate plans. Close to 13% of the fellows responded that they contributed to climate change sensitization through local and national workshops and platforms. Around 12% of the fellows indicated that they have made contributions through climate change publications and curriculum development respectively. About 9% of the fellows indicated that they contribute to climate change research and development. Around 8% of the fellows indicated they have contributed to mainstreaming and integrating climate change with other sectors.. Other contributions made by fellows in the area of climate change included knowledge development (2%), mentorship (4%), contribution to national communication on climate change (2%), contribution to Intergovernmental Panel on Climate Change (IPCC) report (2%), and representing government at climate change negotiations (3%).

### **Climate change-related conferences attended since joining the ACCFP program**

The results showed that fellows have attended multiple conferences on climate change adaptation and mitigation from the provincial level to the global level. Majority of the fellows have attended up to 10 climate-related conferences at provincial, national, regional and global levels. Fellows have attended climate related conferences between 11 to 20 times at the provincial, national and global levels, while some fellows have managed to attend over more than 30 conferences at the provincial and national levels.

### **Publications on climate change adaptation and mitigation since ACCFP fellowship**

Responses from fellows showed that approximately 40% of the fellows have successfully published peer-reviewed journal articles after participation in the ACCFP program. About 20% of the fellows have produced research papers from their work, while around 12% of the fellows have produced policy briefs

and working papers respectively. About 9% of the fellows have published books on climate change. Other publications by fellows included short science articles and newspaper publications. The fellows also indicated their rate of publication since their participation in the ACCFP program. The majority of fellows (76%) indicated that, they have witnessed an increase in the rate of publication as a direct result of their participation in ACCFP program.

### **Climate awards, job promotion and other opportunities**

About 28% of the fellows indicated that they have received awards for their contribution to research, policy, advocacy and capacity development on climate change. Some of the recognitions and awards received by fellows included the Climate Innovation Prize 2016, Green Talents Award, Tusk Awards 2014, Dr Akin Adesina Prize for Research Innovation, Sustainability Award on Social Responsibility from the University of Nigeria and Shell BP.Ir, IDRC's Africa Climate Leaders recognition and Agriculture Champion in 2011 in Kenya. The majority of the fellows (62%) indicated that the experience, knowledge and skills acquired during the ACCFP program contributed to the promotion they received at their professional career. About 50% of the fellows suggested that their exposure and participation in the ACCFP program have improved access to new opportunities based on the new skills, networks and contacts acquired from the fellowship.

### **Impact of the ACCFP program on career development**

The highest impact of the ACCFP program on their careers according to fellows' ranking was the significant improvement of their knowledge on climate change adaptation and mitigation issues (4.62). Fellows ranked their deepened knowledge in climate science (4.41) and the regional and international experience gained (4.31) since their participation in the ACCFP program. Fellows indicated that their research and analytical skills (4.10) and writing skills (4.00) have improved significantly since they participated in the ACCFP program. The fellows also indicated that the ACCFP program has exposed fellows to climate change research networks (4.14), new research environments (4.14), and strengthened their professional confidence and aspiration through mentoring (4.03) from supervisors as well as training workshops organized by the ACCFP program. Fellows indicated that the ACCFP program has broadened their scope on climate policy (3.79), increased their capacity to published widely (3.66), increased chances of securing new job opportunities and research grants (3.48) and the platform to secure other fellowship or scholarship opportunities (3.55). While significant, the least impact according to fellows was the improved capacity to influence climate policy (3.24) and curriculum change (2.79).

### **Performance of the ACCFP program**

According to fellows, the ACCFP program has significantly improved the capacity and training of young researchers (4.41). The ACCPF provided a platform for learning on climate change issues (4.38). The fellows also scored the ACCFP program very high regarding skills development (4.37), financial support to researchers (4.34) and the platform provided for networking and linkages (4.34), and exchanging ideas (4.25). Other areas where the ACCFP program has performed were the opportunities created for the publication of research outputs (4.07), awareness creation on climate change issues in Africa,

development of climate innovations (3.64), and the platform created to influence decision-making in the area of climate change at the different levels (3.89).

### **Challenges and way forward**

While the ACCFP program is lauded by fellows as a remarkable opportunity for addressing climate change capacity gap, fellows reported several challenges they faced during their fellowship period, including complication on disbursement and access to fellowship funds, coordination and supervision challenges, language barrier, capacity development and guidance for policy fellows, and lack of information and awareness. On the way forward, the fellows suggested that the ACCFP should organize a general forum or platform for all fellows to contextualize all the problems and identify possible solutions. On funding, the fellows suggested that the cost of living and other logistics should be revisited in host country institutions where living cost and logistics are exceptionally high. There was a suggestion to consider funding support and increased involvement of home institutions. Fellows suggested that a much more rigorous selection process for host institutions to ensure efficiency and proper supervision. Improving the relationship linkages between the home and host institution as well as other relevant partners and stakeholders such as government agencies, NGOs would be critical to the future of the ACCFP. Adequate preparations and prior arrangements with the host institution on the fellows' scope of work and the necessary supportive logistics were also strongly highlighted by fellows.

Overall, fellows consider the ACCFP program as a valuable program that is performing creditably to achieve some key development objectives in Africa including - developing the capacity of fellows from participating institutions, building a sustainable collaborative network of institutions to offer learning opportunities for young scientists and professionals, and developing the capacity of young scientists and professionals to advance knowledge on climate change issues to inform policy and decision making, and mainstream climate change education.

## 1 Introduction

African countries on average, exhibit lower levels of per capita resource use, and carbon dioxide emissions, but at the same time, these statistics show rapid economic growth of about 5 per cent during the past decade (United Nations Development Programme [UNDP], 2012). The continent accounts for less than 4 per cent of global GHG emissions (World Bank, 2009), yet it is the region considered most likely to be impacted first and worst by climate change (IPCC, 2012). The IPCC suggests that Africa is likely to be the most vulnerable and highly impacted to climate change by 2100. However, there are significant uncertainties around the precise nature and extent of likely future changes in climate, and consequently in relation to their likely impacts (IPCC, 2012). What remains certain is the fact that, there is going to be agricultural losses of between 2 and 7% of GDP in the different parts of the continent.

Deepening the understanding of both the likely changes in climate phenomenon and of their possible impacts will be critically essential if we are to develop appropriate responses. Research on climate change is fundamental to identifying and providing workable solutions that are cost-effective and likely to be sustainable. While climate change is principally a global level phenomenon, its impacts are ultimately felt locally. As such solutions are, in large part, best researched, developed, tested and fine-tuned locally to ensure they are relevant to policy and development planning. This situation highlights the critically important role of local researchers including their ability to influence local, national and regional policy and implementation.

African research capability in the area of climate science and climate change impacts is recognised as being very weak (Wilby, 2007). Unlike the field of agriculture with a relatively longer history of investment in research and development in Africa, climate change is a fairly new field of environmental enquiry, which is gaining roots in the local technical knowledge development. As a result, there is a significant lag in knowledge production on climate change in Africa compared to the rest of the world.

According to a report by SciDevNet, between 1981– 2009, African scientists contributed less than 2% of climate publications globally (SciDevNet, 2010). African capacity in the areas of technology and information systems for climate science is generally low, which limits the ability of African countries, institutions and communities to respond to climate threats. The lack of capacity is reflected in the limited engagement by African scientists in international and donor funded climate research work. As a result, African climate science has long remained stunted, with limited or lack of national funding, which restricted opportunity of countries, climate institutions, and scientists to gain experience and achieve credibility. The implications are numerous. First, African climate research institutions are not able to compete for international funding or research grants on the global platform. Second, there are limited opportunities for young and emerging researchers to gain experience and status in order to fully engage in internationally funded climate research, and therefore risk jeopardizing continuity building research base. Third, the all too common international research conducted on Africa by foreign experts does not benefit from the unique expertise provided by local research capacity in order to create ownership and provide adequate local contextualization.



The model of contracting researchers from the developed world to generate climate research evidence to inform local adaptation and mitigation action has been generally less effective in the long run rather than developing the capacity of local expertise or establishing collaborative research between local and international expertise (Chataway et al., 2005; Denton et al., 2011). There is also ample evidence that countries with investment in human capital development are better positioned than those with no investment to identify new opportunities and to develop and adopt new and innovative technologies (Benhabib and Spiegel, 1994). Several recent reports, including the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC AR4) and the Climate Change Adaptation in Africa (CCAA) Outcome Report entitled “New pathways to resilience” have strongly highlighted the importance of improving capacity to reduce climate related risks in Africa and developing adaptation and resilience strategies that are consistent with sustainable development.

In response to the call to develop the skills and research capacity of early to mid-career African professionals in the field of climate change adaptation and mitigation, the African Climate Change Fellowship Program (ACCFP) was launched in 2008 under the auspices of the International Development Research Center (IDRC) to support African professionals, researchers, teachers and students to undertake experiential learning, education, research and training to increase their knowledge, capabilities and experience for advancing and applying knowledge for climate change adaptation in Africa. Jointly administered by the International System for Analysis, Research and Training (START) Secretariat, the Institute for Resource Assessment (IRA) of the University of Dar es Salaam and the African Academy of Science, the goal of the ACCFP is to promote the development of endogenous capacity in Africa for advancing and applying scientific knowledge for climate change adaptation. The primary objectives of the ACCFP are to: (i) contribute to institutional strengthening by building human resource capacity in participating institutions; (ii) develop a sustainable collaborative network of institutions that can provide learning opportunities for young scientists and professionals; and (iii) train a cadre of young scientists and professionals to advance understanding of climate change risks and vulnerabilities, improve management of climate risks and advance adaptation, inform policy and decision making, and mainstream climate change education.

Since the program’s inception in 2008, two phases of ACCFP have been implemented with more than 90 ACCFP Fellows matched with universities, research centers, and other host institutions across Africa to collaborate with mentors in the implementation of individually designed projects. ACCFP Fellows have also participated in periodic program workshops and seminars that offered opportunities to interact face-to-face with each other and program staff and challenge them to step “outside the box” in considering the role and potential contributions of their individual work within broader efforts to address climate change adaptation challenges in Africa. Currently, the third phase of the ACCFP, which is running is gradually drawing to a close.

## **1.1 Rationale**

Fellowship programs provide training and capacity development to individuals in specific area of studies, important to their career and match with the capacity needs of their countries (Boeren, 2005; Rotem et al., 2010). The rationale behind the establishment and implementation of fellowship programs is to

support recipient countries to address their economic and social development issues by increasing the pool of qualified people in these countries (Strömbom, 1989; Kone, 2013). The huge investment in fellowship programs by Donors comes with great expectation for beneficiaries of such fellowships to strengthen and improve the performance of organizations and institutions beyond individual benefits from training and capacity development (Boeren et al. 2008).

Despite the huge investment, the evaluation of fellowship remains the “Achilles heel” of many institutions and organizations (Rotem et al., 2010). There are few evaluations of fellowships programs that have been undertaken by donor agencies around the world (Boeren, 2005; Rotem et al., 2010). For a very long time, external evaluations or impact assessment have rarely been conducted and existing evaluations have mainly undertaken tracer studies that focus on, for instance, completion of studies, alumni degree attainment and alumni return in own country (Boeren, 2005). While completion reports of fellowship programs highlight some of the impact and outcomes of these programs, very little information has been documented on the evaluation of the impact of fellowship programs (Boeren, 2005; Searle, et al., 2006). However, there is a growing importance and attention on the evaluation of the impact of contemporary fellowship programs by institutions due to increasing demand for transparency and accountability from donors, as well as to improve the efficiency and effectiveness of such programs (Boeren et al., 2008; Zinovieff, 2008; Kone 2013).

This study presents an analysis of the impact of the ACCFP program as reported by Fellows in their contribution to the climate science, education and policy development for climate change adaptation and mitigation in Africa. Specifically, the proposed work seeks to:

- Assess the contribution of fellows to climate science and policy at various levels
- Assess the impact of ACCFP fellowship on the career development of fellow
- Assess the strength, weakness and opportunities for improvement in the ACCFP programme

## **2 Conceptual Framework**

The study adopts an “input-throughput-output” model which attempts to relate the ACCFP program to the outputs, outcomes and impacts of the program on the Fellows and their contribution to climate science, education and policy in Africa. The framework is inspired by the evaluation framework developed by Enders and de Boer (2002). In the framework, input factors refer to the resources generated by ACCFP to carry out the program’s actions (e.g. financial, fellows etc.). The program actions refer to all activities conducted by the ACCFP program (e.g. recruitment, selection, placement etc.). Outputs of program actions refer to the direct products of the ACCFP program actions. Examples of outputs include among others the characteristics of selected fellows; placement of fellows; project reports, policy briefs and publications by Fellows. Enders and de Boer, (2002: 13) refer to outcomes as “the changes in the attitude, behaviour, functioning and performance of the service-takers”. Outcomes can be categorised into short-term (1-3 years), medium-term (4-6 years), and long-term (more than 7 years). Impact on the other hand refers to the long-term outcomes, that is “the fundamental change in organizations or communities as a consequence of the outcomes” (Enders & de Boer, 2002, p.14). This

study, while looking at the long-term outcome of the ACCFP program will also look at both the short-term and medium-term outcomes of the program.

Underlying the impact evaluation approach is the broad concept of '*additionality*', which highlights the ability to show that some significant extent to which something has happened as the result of a specific input that would not have happened then, or at least not to the same extent (European Commission, 2000). The concept of additionality cannot always be *measured* as in traditional input/output or cost/benefit approach. In many instances, impacts can only be *shown by inference* from the available indicators and variables - i.e. a case can be made based on the balance of probabilities that a specific outcome has followed from a specific input or stimulus. Given the generally qualitative nature of fellowship training program such as the ACCFP, and the wide scope of possible human and institutional impacts, inferential demonstration of impacts is the most likely.

In evaluating the impact of capacity development and training programs such as the ACCFP, it is important to step outside the boundaries of conventional impact evaluations such as science and technology impact evaluation, which have tended to focus on measuring impacts with regards to inventions, innovations, patents and commercial spin-offs resulting from basic research and/or applied research programs. In the ACCFP case, while there may be some direct impacts, other major impacts are likely to be more indirect as the core objectives of the program are oriented towards developing individual and institutional research capabilities to advance scientific knowledge that can inform climate adaptation planning and policy in Africa, rather than solely towards the output of an individual research project.

The ACCFP program like other fellowship programs presents a delicate blend of possible uses and benefits. Here, these uses and benefits originated from the development of a *general research and training capacity* rather than from a specific research outcome or technological innovation. Programs such as the ACCFP with strong capacity development component have the characteristics of 'public goods' in that in principle, a new or incremental capacity or knowledge can be transferred from its originator to other people without necessarily reducing its value.

## 2.1 Sources of Impact

The European Commission report on "a methodology for assessing the impact of the Marie Curie Fellowships" identifies two sources of potential impacts, which applies to the ACCFP program:

- ***Impacts as a result of participation in the ACCFP itself:*** As the tangible findings of Fellows research projects cannot be predicted, fellowships such as the ACCFP selects fellows with the expectation that they will achieve certain positive outputs irrespective of the eventual significance or utility of the research findings. Several of these expectations are already embedded in the ACCFP terms of reference for selected fellows. Such expectations are shared by most potential fellows, and the extent of realizing them is likely to be a contributing factor to how fellows may view the potential impact of the program.

- **Impacts related to the outputs of ACCFP projects:** The intrinsic uses and benefits associated with the participation in the ACCFP program alone do not provide enough justification for the provision of donor funding. At some point, these uses and benefits must be backed by significant research-related outputs. Given the training and capacity development dimension of the ACCFP, the potential range of outputs is large - extending from improved human and organisational research capacities and training resources to the generation of new knowledge and technological innovation. The prospects of showing direct impact may be greater with regards to the benefit-related impacts of ACCFP outputs, especially where the output involves the maintenance of network relationships that emerged from the ACCFP program.

## 2.2 Impact dynamics

The study is informed by three sets of impact dynamics from the Marie Curie Fellowships, which are also manifested in the ACCFP program.

1. **Skills-related impact dynamics** – These are principally Fellow-centred, revolving around the transfer of existing knowledge and providing research skills training essential to produce new knowledge. The main outcome is trained researchers. The individual fellow is both the primary user and the key beneficiary, and most potential impacts are likely to be link directly to the competences of the fellow. The host institution is basically a service provider for which it may or may not receive financial benefits or recover its costs.
2. **Knowledge-related impact dynamics** - These relate precisely to the production and transfer of new knowledge. The main outcomes are either representations of knowledge (documents that codify knowledge in language - including symbolic, graphical and mathematical forms) or applications by which new knowledge is embedded in goods, services and enabling technologies. In contrast to skills, the uses and benefits of knowledge can be much more evenly distributed between individuals and institutions, and so likewise can the potential impacts.
3. **Network-related impact dynamics** - These are a complex set of existing and prospective relationships between all types of fellows in the ACCFP program, as well as between participants and non-participant stakeholders. The outcomes are in the form of new, established links between individuals and institutions that may spur partnerships and collaborative projects. One of the key objectives of the ACCFP is to develop a sustainable collaborative network of institutions that can provide learning opportunities for young scientists and professionals

## 3 Limitations of the evaluation

The evaluation of the ACCFP program took place within a relatively short period from May to July 2016. A major part of findings from the survey and interviews were based on responses from ACCFP fellows, which may create positive bias and somewhat exaggerate the increase in abilities and impacts associated with the ACCFP program. Evaluating the outcomes and impacts of programs such as the ACCFP can be complex and concrete results are difficult to measure. The ACCFP training is an investment in developing human capital and this is likely to yield results after several years. In this regard, the

assessment of the attribution effect of the ACCFP program can only be done in a tentative way particularly in relation to outcomes and impacts on the organization level and the national level. Assessing the needs for and impacts of fellowship program requires adequate information on indicators which in most cases may not be available. By triangulating various quantitative and qualitative sources of data, the study sought balance in the interpretation and argumentation of the outcomes and impacts of the ACCFP program.

## 4 Methodology

### 4.1 Data Collection Approach

A semi-structured questionnaire was sent out to both current and former ACCFP fellows. The questionnaire uses a combination of multiple choice and open ended questions, allowing for free text input. Two reasons inform this approach- one, to provide valuable information from the context of Fellows' experiences, allowing them to explore responses further, and two, to provide uniformity (Horton et al, 2004). The content of the questionnaire was guided by selected key indicators for impact analysis including: (1) Fellows socio-biographical backgrounds, (2) Fellows educational backgrounds (3) employment and career progression, (4) Key development area of Fellows' focus, (5) Fellows Outputs, and (6) Fellows impact satisfaction.

- Fellows' socio-biographical backgrounds: These include variables related to fellows' gender, age, country of work, among others. These variables allow comparisons between the male and female fellows as well as comparisons between countries represented in the program. This indicator is aligned to the recommendations of literature which argue that indicators should provide data that allow wherever possible international comparability and disaggregation (Prennushi, et al., 2001; World Bank, 2004).
- Fellows' Educational background relates to the level of qualification of the fellow at the time of the ACCFP program. The use of educational variables support earlier studies on fellowship programs where such variables were used to measure the amount of knowledge and skills gained during training received by alumni (Commonwealth Scholarship Commission [CSC], 2009; NORAD, 2005; Teichler, 1991). Several scholastic studies have recommended the use of educational variable as key determinants of career progression (Heslin, 2005; Lortie-Lussier and Rinfret, 2005; Polk & Armstrong, 2001; van der Sluis & Poell 2003; Wayne et al., 1999; Whitely et al., 1991). These studies show a positive correlation between educational levels and promotion (Whitely et al., 1991; Polk & Armstrong, 2001) and between educational levels and position occupied (Lortie-Lussier & Rinfret, 2005; Polk & Armstrong, 2001).
- *Employment and Career progress entails* variables related to employment of the fellows (e.g. sector of employment of fellow after participating in the ACCFP program) and variables related to career progress of alumni (e.g. number of promotions, publications, etc after ACCFP). Many impact evaluations have highlighted the importance of collecting information on the employment and career of fellows in order to measure their outcomes and impact of the ACCFP program on their employment and career progress (CSC, 2009; NORAD, 2005)
- Key development area of Fellows' focus is related to the professional or research activities of the ACCFP fellow. This indicator seeks to assess the outcomes of ACCFP program on the fellow's area of work. The variables associated with this indicator are relevant and measurable as outcomes of ACCFP program. Other studies support the use of such an indicator for evaluating fellowship programs (Aguirre International, 2004; CIDA, 2005; CSC, 2009; NORAD, 2005).

- Fellows' Outputs entails the measure of the activities and outputs conducted by the ACCFP fellows. This indicator attempt to measure the contribution of the ACCFP program to such activities and outputs. Such activities and outputs are evident at various levels from local level to global level. The use of this indicator is supported by evaluation studies on fellowship programs (World Bank Institute, 2010)
- Fellows' impact satisfaction relates to the degree to which ACCFP fellows are satisfied with the ACCFP program. The perception of satisfaction by fellows can generate relevant information that is essential feedback for improving the ACCFP program. Fellows' satisfaction should not be limited to capacity development and training received but should include the whole process from selection to follow-up. These studies support the use of satisfaction variables in the evaluation of fellowship program (CSC, 2009; NORAD, 2005),

## **4.2 Data Analysis**

Primary data from the survey was analysed using descriptive statistics and a 5-point ranking scale. The application of this ordinal scale allows us to measure the gradations in attitudes, opinions and behaviors of respondents (Dillman et al 2009). To determine the level of impact of ACCFP fellows on to climate science and policy at various levels, fellows were tasked to rank the predefined and open statements on a scale of 1- 5 with the following rankings: No impact = 1, low extent = 2, medium impact =3, High impact = 4, Very high impact = 5. To assess the impact of ACCFP fellowship on the career development of fellow we define a 5- point ranking scale which include: Very great extent = 5, Great extent = 4, Some extent =3, Little extent = 2 and No extent = 1. Following the ranking by Fellows, the study calculated the means and standard deviation of the various rankings by the fellows. The study set of a mean cut-off mark of 2.5 below which the statement ranking was not significant.

## 5 Results and Discussion

A total of 30 ACCFP fellows responded to the online survey, representing a third of all fellows who have participated in the program. Out the total responses, almost a quarter of them were from female fellows while the remaining majority of the responses came from male fellows (figure 1).

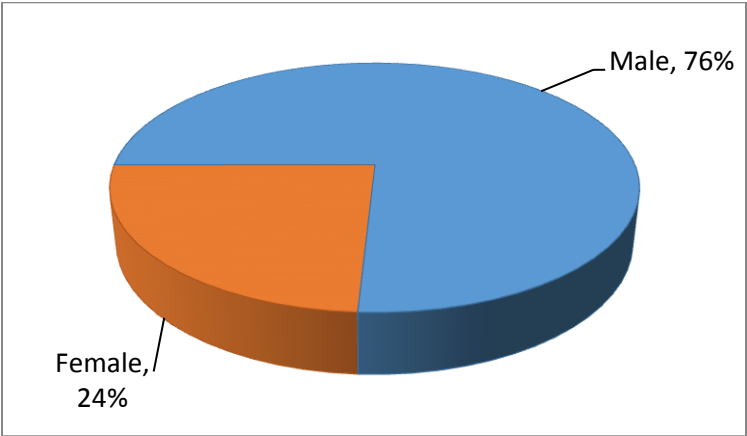


Figure 1: Gender of fellows

### 5.1 Age of fellows

The age distribution of fellows spread across the various age categories shown in figure 2. The majority of fellows (45%) who responded to the survey were within the age bracket of 31- 40 years. This was followed by fellows within the age category of 41- 50 years (30%) and the age group of 21 – 30 years, while the least represented age category was between 51-60 years.

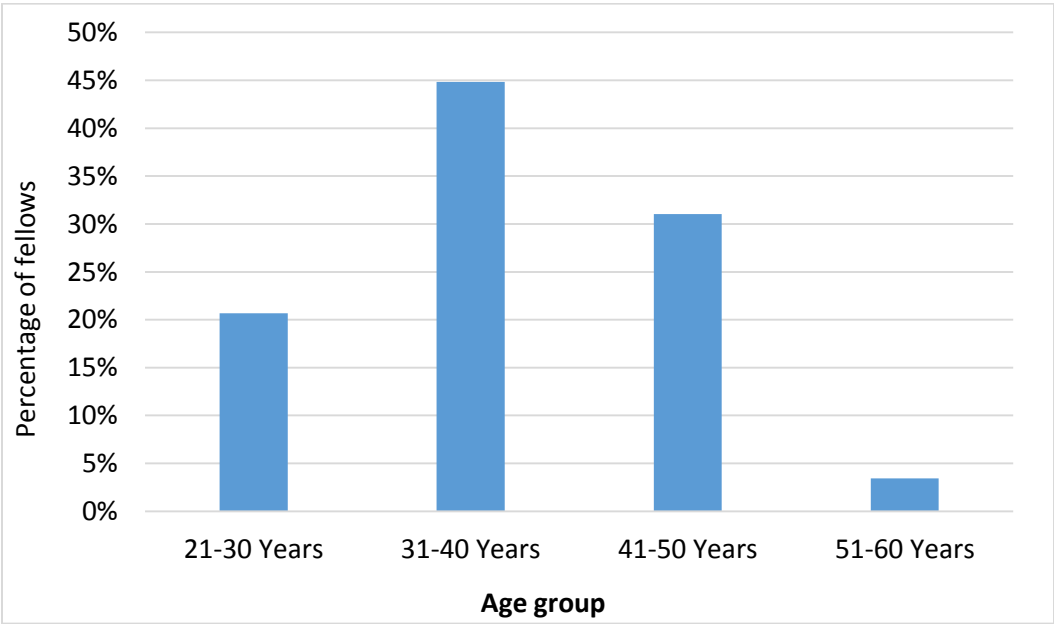


Figure 2: Age of fellows



## 5.2 Institutional representation of ACCFP fellows

The ACCFP fellows came from diverse institutions across Africa (figure 3). The majority of fellows (59%) were from universities, followed by 21% of fellows from Non-profit organization. The least representation of fellows came from research institutions and government ministries working on climate change issues.

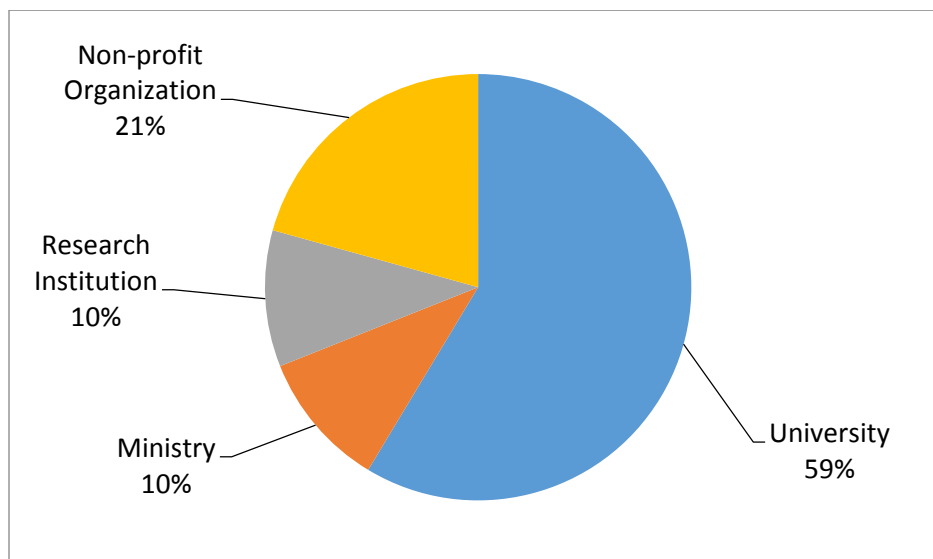


Figure 3: Institution of fellows

## 5.3 Profession background and positions held by fellows

The ACCFP fellowship brings together fellows with different professional backgrounds ranging from professors and lecturers, researchers, technical specialists, post-doctorate and PhD students conducting climate change related research. The majority of the fellows who responded to the survey were lecturers and professors (28%), with Post-Doc and PhD students at 24.5%, and Managers/ Directors at 14.5% while Researchers and Specialist (such as economist, geospatial Agronomist, policy analyst, among others) constituted 16.5% respectively.

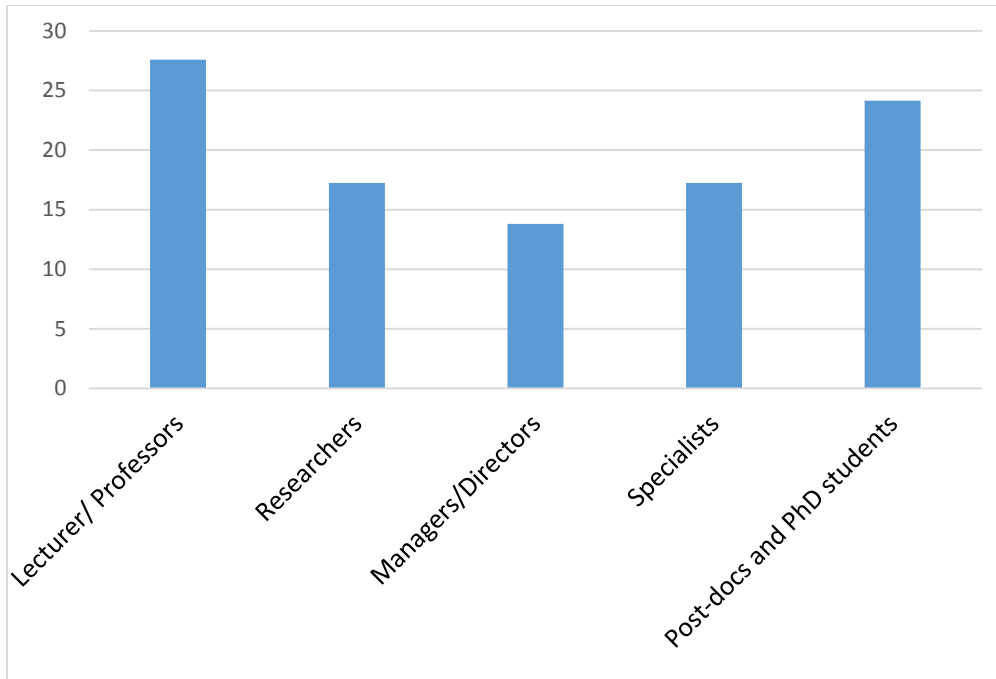


Figure 4: Positions held by fellows

#### 5.4 Home country of ACCFP fellows

Figure 5 shows the distribution of current location of fellows. From the results, most of the fellows are currently based in African countries, with the exception of few fellows who are currently based in the United Kingdom, and Germany. The highest percentage of responses came from fellows in Kenya (17%). This was followed by responses from Nigeria (13.99) and South Africa (13.9%). Other responses came from fellows who are domiciled in Zimbabwe, Togo, the Gambia, Morocco, Malawi, Democratic Republic of Congo, Benin, Cameroon and Ethiopia. The different country representations provided a rich diversity of responses. Concerning the location of fellowship, more than 50% of fellows carried out their fellowship in countries other than their home countries. This offered them the opportunity to experience a new culture as well as a working environment in their host institutions.

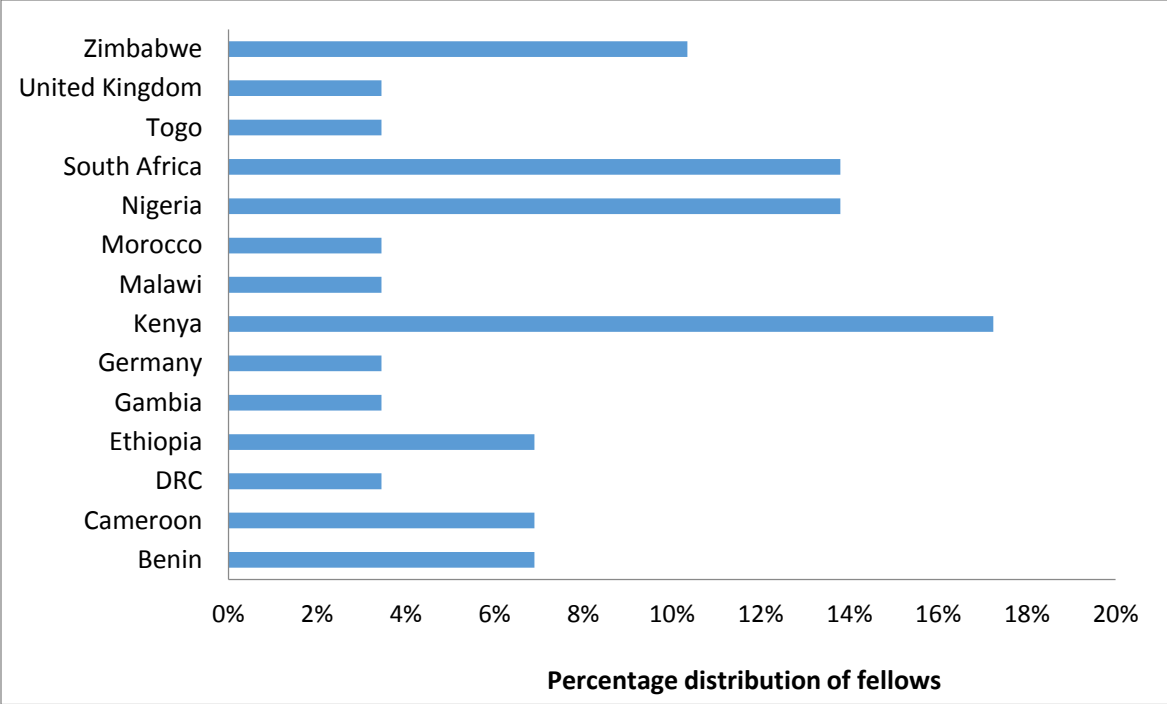


Figure 5: Fellows’ distribution by country

### 5.5 Fellows’ academic qualification

On academic qualification, the majority of fellows (48%) who responded to the survey were PhD holders, followed by 38% of fellows with Master’s Degree and 10% with only Bachelor’s Degree. A small percentage of fellows (4%) were professors (figure 6).

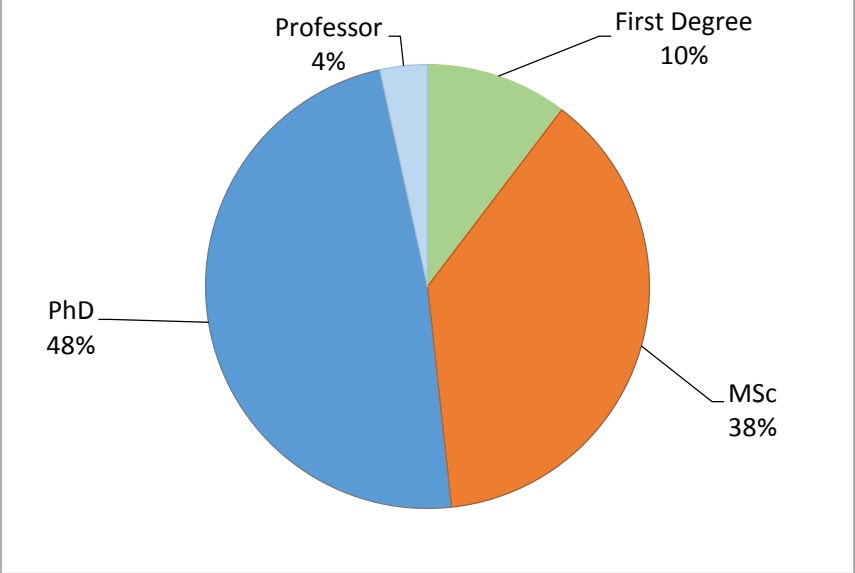


Figure 6: Academic qualification

## 5.6 Round of ACCFP Program

According to the responses from the survey, the majority of fellows (45%) came from the ACCFP round 3, followed closely by 41% of fellows from the ACCFP round 1 program, while the least percentage of response from fellows who participated in the ACCFP round 2 (Figure 7).

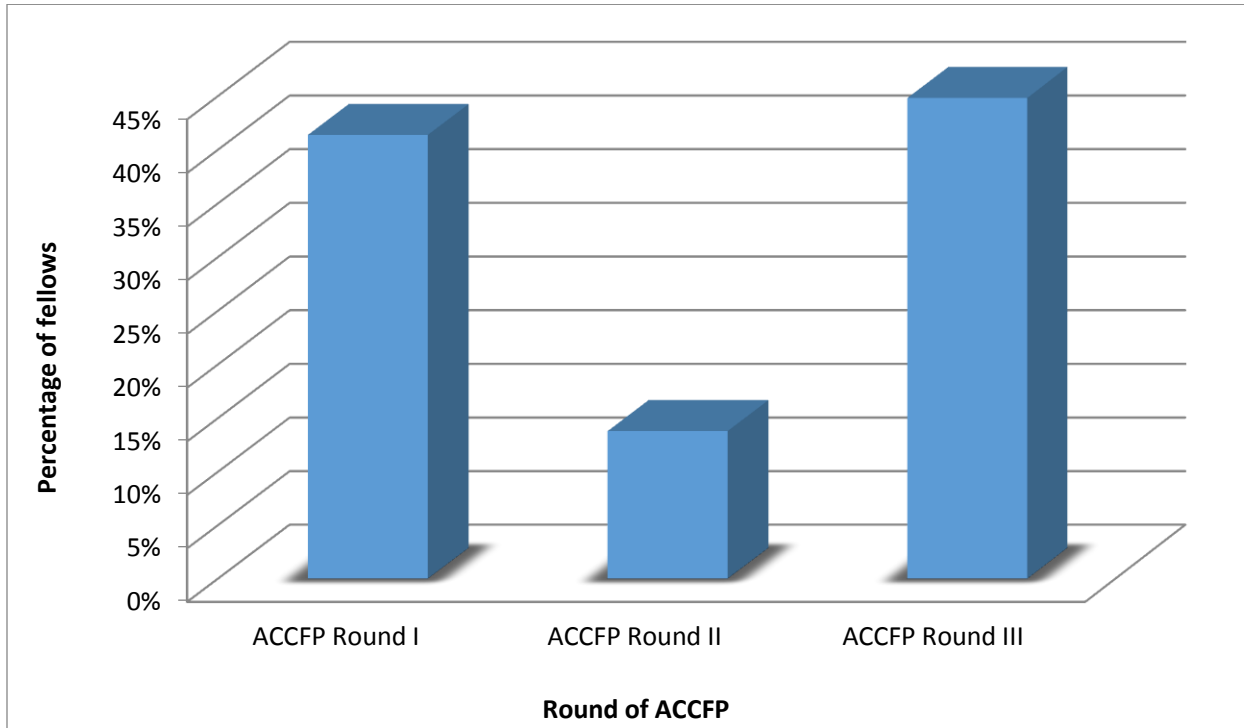


Figure 7: Rounds of ACCFP Program

## 5.7 Types of ACCFP fellowship

Since its inception, the ACCFP program has implemented 5 different types of fellowships. In this study, we received responses from fellows who participated in all the different types of ACCFP fellowship. The majority of fellows who responded to the survey were participants of the science fellowship (31%) and policy fellowship (31%). This was followed by 24% of fellows who participated in the post-doctoral research fellowships. A handful of fellows who participated in the doctoral research (7%) and teaching (7%) fellowships responded to the survey (figure 8). The wide scope of responses from the different fellowship types provides a perfect mix of different disciplines and angles from which issues of climate change adaptation and mitigation can be discussed.

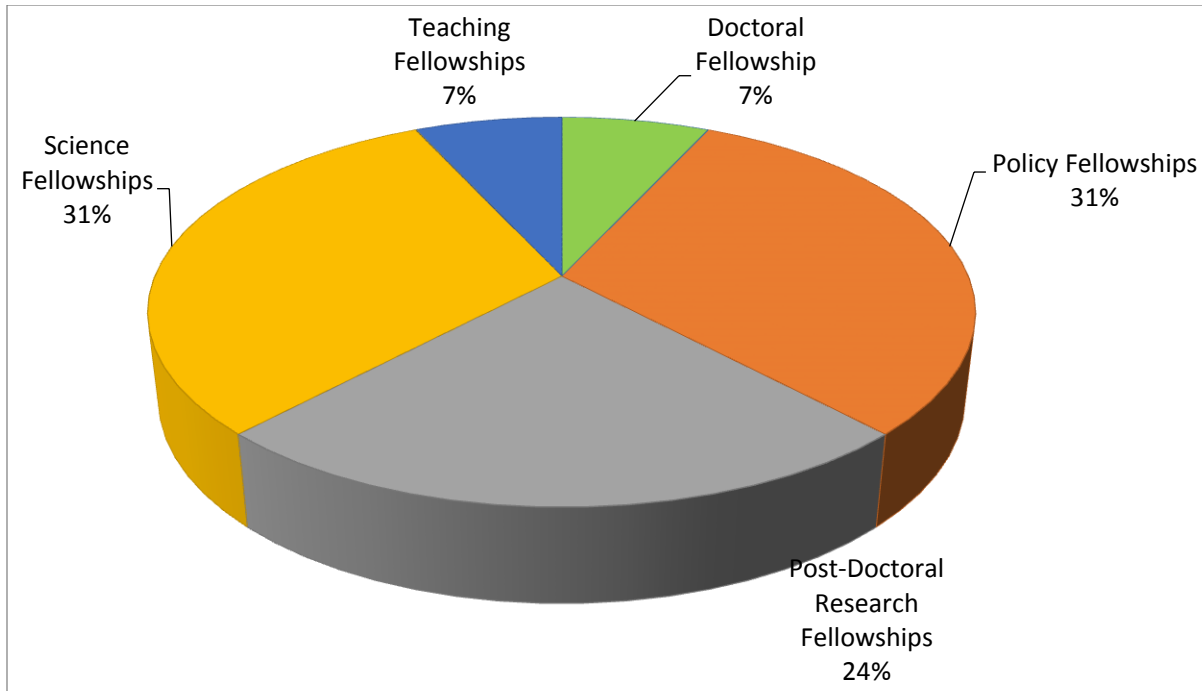
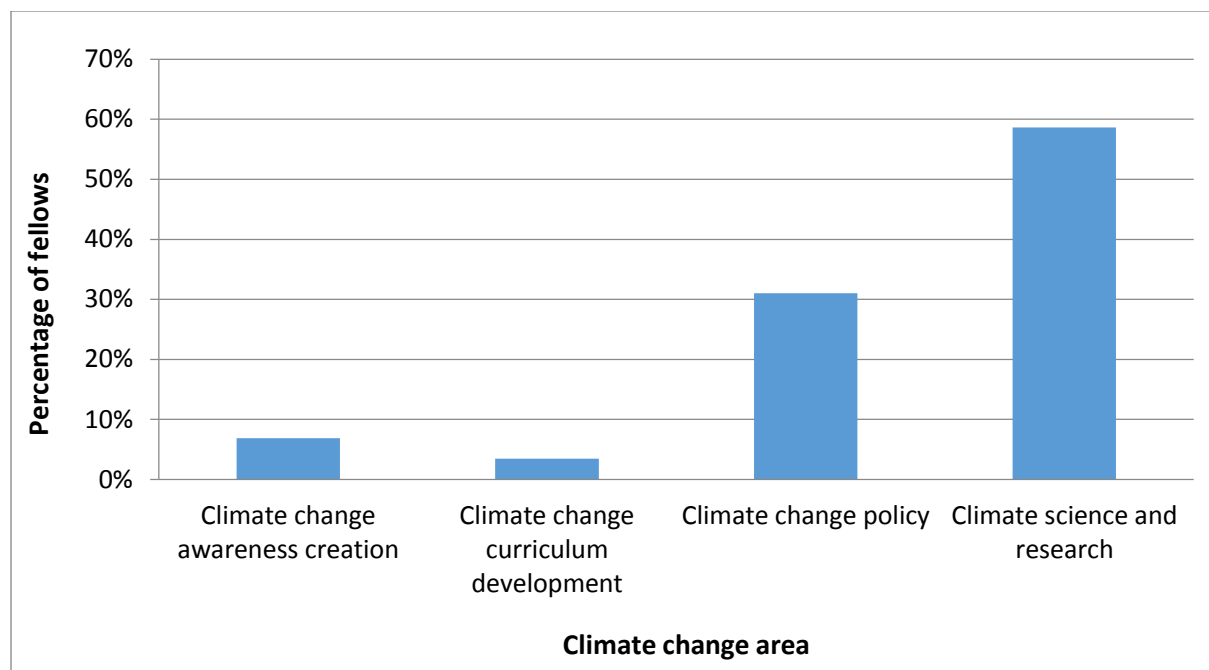


Figure 8: Types of ACCFP fellowship

## 5.8 Focal areas of fellows

In figure 9, the key focal areas of climate change that were investigated by fellows are shown. According to the survey, the majority of fellows (59%) focused on research projects in the area of climate science and research. This is followed by 30% of fellows who focused on climate change policy. Other areas of climate change that were developed by fellows included climate change awareness creation and climate change curriculum development.



**Figure 9: Areas of climate change addressed by fellowship**

## 5.9 Major impacts of the ACCFP program on individual or professional careers

In figure 10, fellows showed key areas of impact of the ACCFP fellowship program on the individual or professional career. Close to a quarter of the fellows indicated that participation in the ACCFP program has contributed significantly to the expansion of their networks with other professional colleagues, climate change organizations and institutions, thereby exposing them to collaboration and partnerships for climate change research and other related projects. Close to about 20% of the fellows were of the view that the ACCFP program deepened their knowledge on climate change having gained the opportunity to receive training and mentorship from the ACCFP training workshops. One key impact of the ACCFP on the fellows professional career was the capacity of fellows to publish scientific papers. More than 15% of the fellows indicated that they have experienced significant improvement in their capacity to publish peer-reviewed journal articles and research papers following the participation in the ACCFP program. Two other areas of significant impact of the ACCFP on the career of fellows are the capacity of fellows to conduct sound and credible research, and their exposure to national and international climate change arena. More than 10% of fellows indicated that they have seen improvement in their capacity to conduct sound and credible research following their experience with renowned research supervisors and experts. Fellows also experienced improved exposure to regional and international platforms on climate change through the mobility of the ACCFP program. By travelling from home country to host country as well as travelling to other countries for ACCFP training workshops, fellows gained immense exposure to different platforms and experiences by meeting different people from different background and exchanging knowledge and ideas on climate change.

There are other areas of impacts which fellows indicated, have contributed to the advancement of their careers. These include improved career development and advancement (6%), increased access to other training and funding opportunities (4%), improved capacity to influence policy through evidence-based research (2%), and improved capacity to develop bankable proposal and grants (2%).

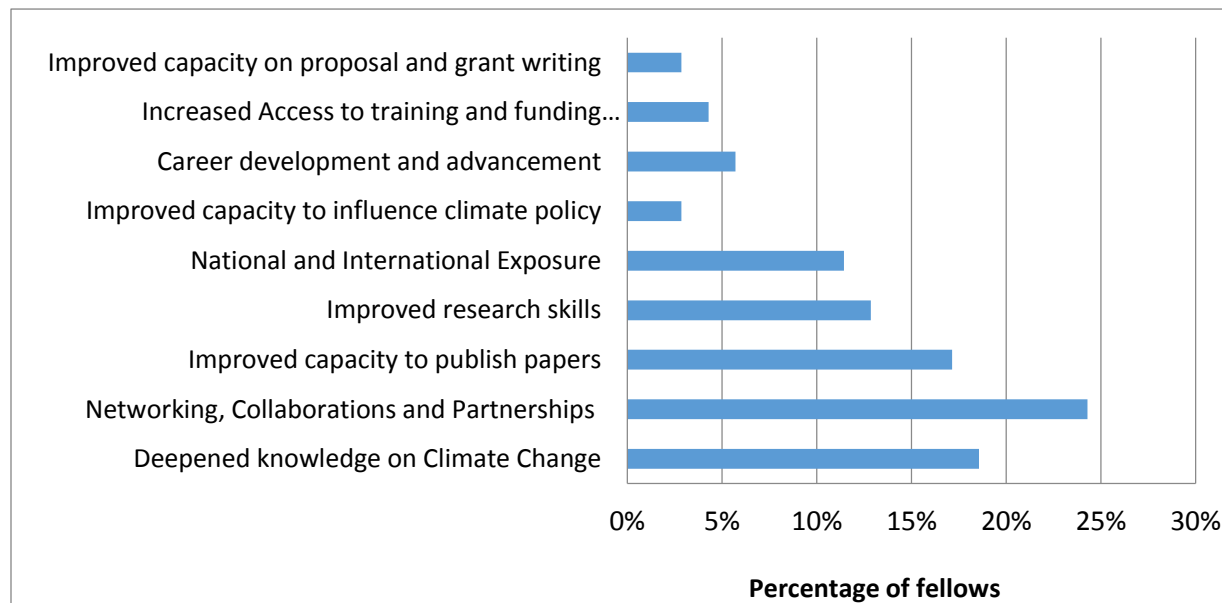


Figure 10: Major impacts of the ACCFP program on individual or professional careers

### 5.10 Level of Fellows’ impact

In figure 11, fellows of the ACCFP program indicated the levels at which they are making significant impact with regards to the work they do. Following their fellowship through the ACCFP program, the majority of the fellows (32%) considered to have made the greatest impact at the provincial or state level. This is followed closely by approximately 29% of fellows who indicated that they have made significant impact at the national level. Those who consider to have had a regional and global impact both stand at 19%. The level of impact of fellows’ work is closely associated with the type of institution and the jurisdiction of the institutions’ operation. For example, fellows who worked with universities and research institutions were most likely to make significant impact at the provincial/ state and national levels, while fellows working in international organizations contributed to regional and global research and policies on climate change. Nonetheless, the ACCFP program has developed the capacity of fellows who have contributed significantly to climate change adaptation and mitigation, education, policy, among other impacts at the different levels in society.

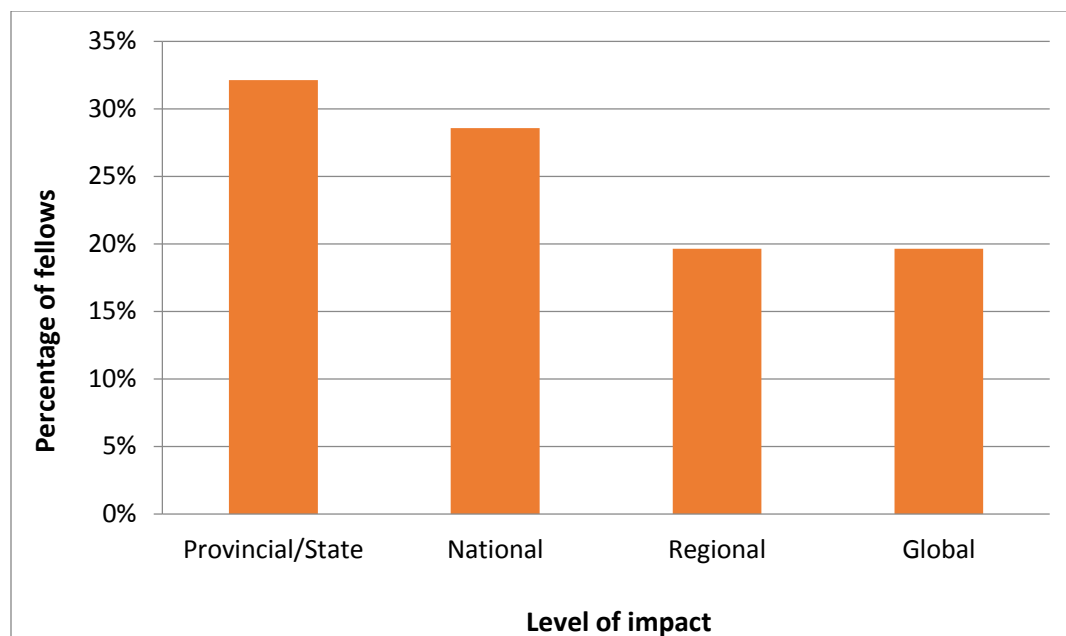


Figure 11: Level of impact

### 5.11 Fellows impact on key development priority areas

One of the critical indicators for impact in this evaluation is the key development priority areas where ACCFP fellows have made significant impact following their experience with the program. Response from fellows suggested a wide array of key areas where they have worked in order to contribute to the adaptation and mitigation of climate change (figure 12). Around 27% of fellows were working in the key development priority areas of agriculture and environmental protection respectively. Close to 15% of fellows were contributing their climate change expertise in the area of water, while more than 10% of fellows were working on land degradation. Other key development area where fellows were working included education (9%), health (4%), energy (2%), urban development (2%), forestry (2%) and climate induce migration (2%).

The agricultural sector is a major contributor to the gross domestic product (GDP) of most African countries, employing majority of the people and providing livelihoods to most of rural Africa. The changing climate and variability in weather patterns have serious consequences for agricultural production in Africa countries. The agricultural sector in Africa is most vulnerable in terms of exposure and sensitivity to climatic changes and capacity to adapt due to the lack of adequate infrastructure, lack of modern farming technologies and practices. It is therefore not surprising that a major proportion of fellows were engaged in climate research, policies, advocacy, innovations, and curriculum development in the area of agriculture with the aim to bring about mitigation and improved agricultural adaptation to climate change. Another key development area where a significant proportion of fellows are making impact is environmental protection. The negative implications of environmental degradation are manifested in the form of polluted water bodies, large refuse stockpile in cities, depleted forest



resources, disease outbreaks, etc. There is growing evidence that climate change will exacerbate the current problems confronting the environmental sector. As a major development priority in many countries, there is growing attention to environmental protection through research, technologies and policy measures to restore and protect degraded environment.

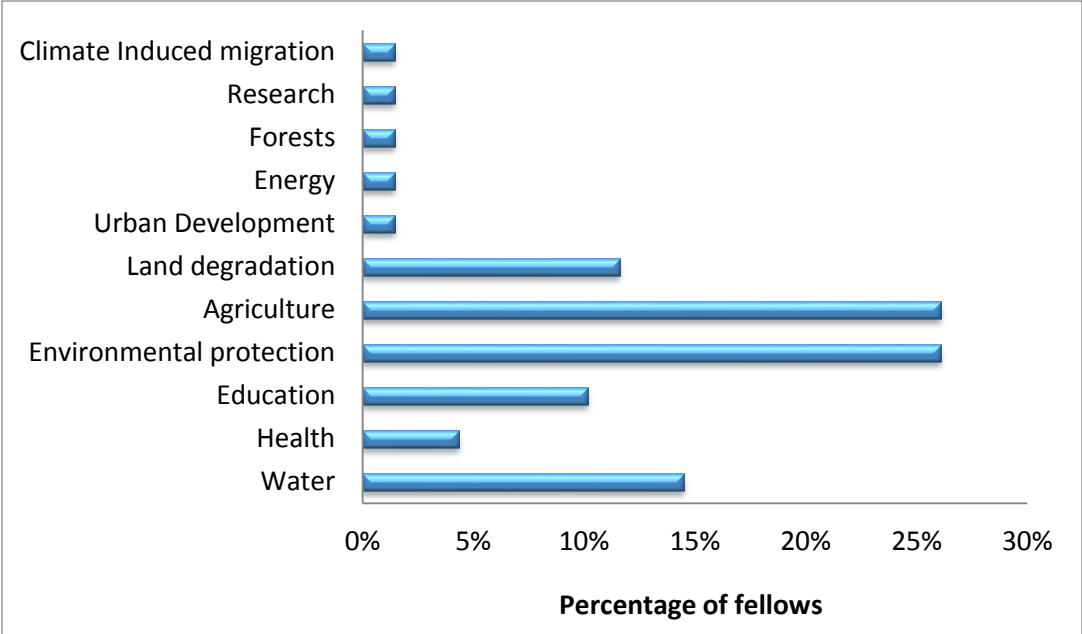


Figure 12: Fellows Impact on Key development priority areas

### 5.12 Fellows’ contribution to climate change adaptation and mitigation

Fellows were asked to outline their most significant contributions to climate change adaptation and mitigation efforts since the ACCFP fellowship experience (figure 13). Around 15% of the fellows indicated that they have led or contributed to the review of climate policies or formulating climate plans. Close to 13% of the fellows responded that they made contributions in areas of climate change sensitization through local and national workshops and platforms. Around 12% of fellows responded that they have contributed significantly to climate change publications and curriculum development respectively. Around 9% of the fellows indicated that they contribute to climate change research and development. About 8% of fellows also indicated they have made contributions to mainstreaming and integrating climate change with other sectors and capacity building on climate change respectively. Other contributions made by fellows in the area of climate change included knowledge development (2%), mentorship (4%), contribution to national communication on climate change (2%), contribution to Intergovernmental Panel on Climate Change (IPCC) report (2%), and representing government at climate change negotiations (3%).

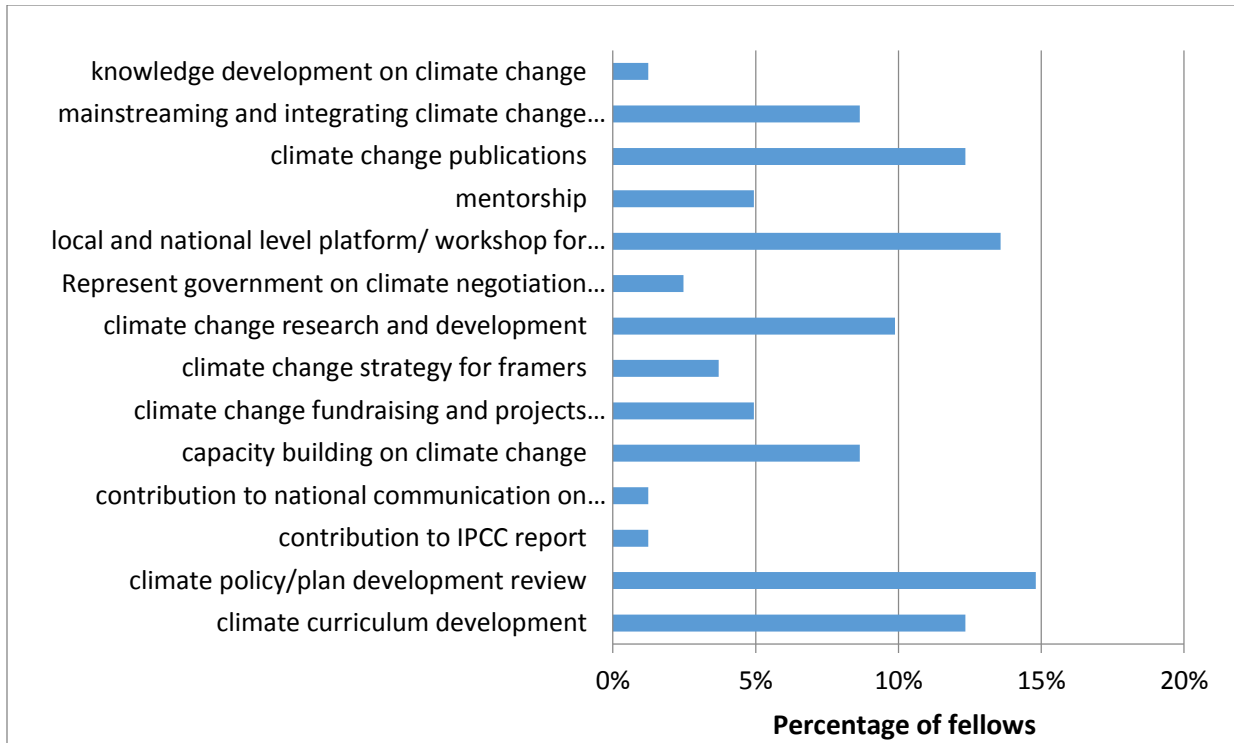


Figure 13: Fellows' contributions to climate change efforts

### 5.13 Climate change conferences attended by fellows

In figure 14, fellows were asked to indicate the number of conferences attended at various levels since their experience with the ACCFP program. The results showed that fellows have attended multiple conferences on climate change adaptation and mitigation from the provincial level to the global level. Majority of the fellows have attended up to 10 climate-related conferences at all levels from the provincial level to global level. At the provincial and national levels, some fellows have attended climate related conferences between 11 to 20 times, while some fellows have managed to attend more than 30 conferences at the provincial and national levels.

Conference is a major platform for decision making, disseminating research output and exchanging knowledge with other like-minded people. Through these conferences, key decisions have been formulated on climate change, which have implications on climate change mitigation and adaptation at the various levels of development. For example, the United Nations Conference on Climate Change (COP), a global conference on climate change brings together leaders, ministers, researchers, and many others from all countries of the world to make crucial decision and agreements on greenhouse gases emissions, global warming, among others. These decisions and agreements when ratified are expected to be implemented at the regional, national and local levels. At the continental level, the Climate Change Development in Africa Conference (CCDA) is an annual forum that brings together key stakeholders of climate change in Africa to bridge the gap between climate science and development policy in order to

foster sustainable development in Africa. The ACCFP fellows through their participation in such conferences have shared their research outputs and also contributed to the formulation of critical policy decisions and agreements on climate change.

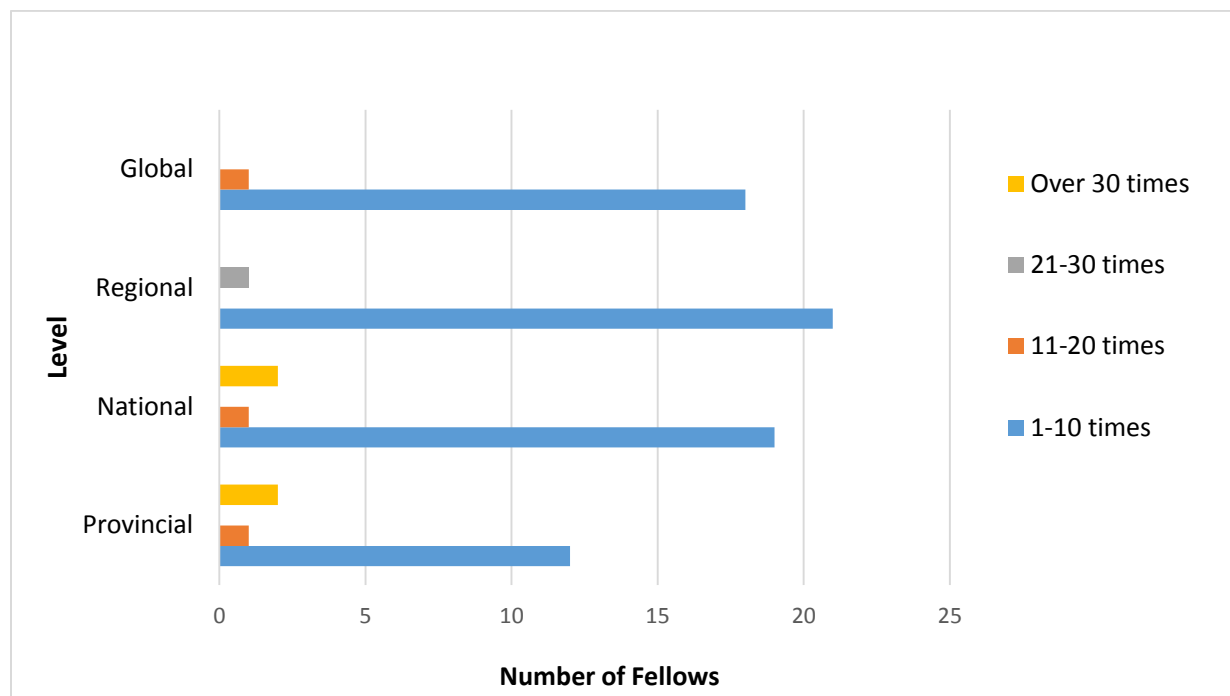
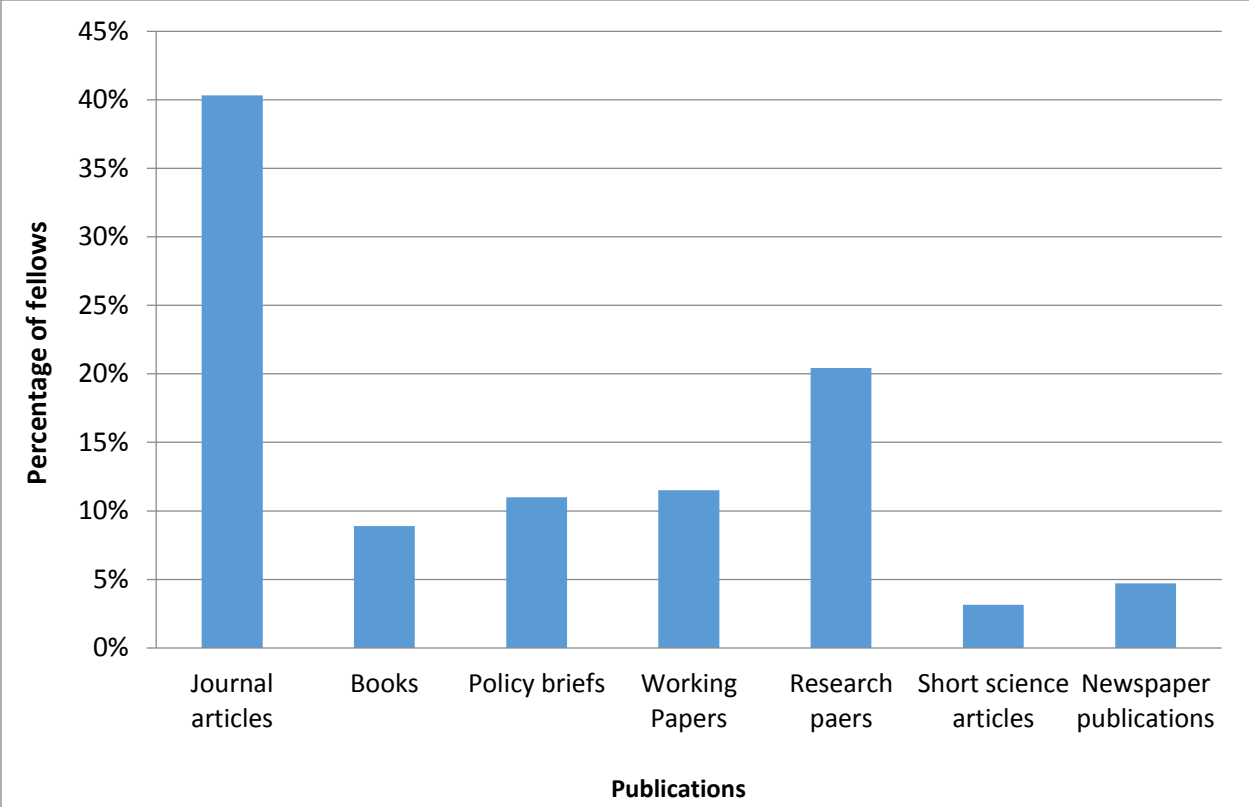


Figure 14: Climate change conferences attended

### 5.14 Publications on climate change adaptation and mitigation since ACCFP fellowship

One of the key outcomes of the ACCFP program was the improvement of the capacity of fellows to successfully publish their research outputs in the form of journal articles, books, working papers, among others. From figure 16, responses from fellows show that approximately 40% of fellows have successfully published peer-reviewed journal articles after the participation in the ACCFP program. About 20% of fellows have produced research papers from the work, while around 12% of fellows have produced policy briefs and working papers respectively. About 9% of fellows have published books on climate change. Other publications by fellows included short science articles and newspaper publications. The fellows also indicated their rate of publication since their participation in the ACCFP program. The majority of fellows (around 76%) indicated that, they have witnessed an increase in the rate of publication as a direct result of their participation in ACCFP program. According to some fellows, the experiences gained through training workshops, collaboration with host institution supervisors and other colleagues as well as write up of the fellowship outputs, submitted to the ACCFP were contributing factors to the increased rate of publications.



**Figure 15: Publications produced since ACCFP fellowship**

**5.15 Climate awards, job promotion and other opportunities**

Regarding the recognition or award for work they have done, about 28% of fellows indicated that they have received awards for their contribution to research, policy, advocacy, and capacity development on climate change. The ACCFP program according to some fellows presented an important springboard as an award program for subsequent awards and recognition of fellows work at various platforms at local, national, regional, continental and global level. Some of the recognitions and awards received by fellows include the Climate Innovation Prize 2016, Green Talents Award, Tusk Awards 2014, Dr Akin Adesina Prize for Research Innovation, Sustainability Award on Social Responsibility from the University of Nigeria and Shell BP.Ir, IDRC’s Africa Climate Leaders recognition and Agriculture Champion in 2011 in Kenya. Other fellows received travel grants to attend to the 2010 United Nations International Workshop in Turkey, the 2012 United Nations International Training Course in China, and the 2014 United Nations International Conference in Morocco.

According to fellows’ responses, the ACCFP fellowship was instrumental in the promotion they received at their respective organizations and institutions. The majority of fellows (62%) indicated that the experience, knowledge and skills acquired during the ACCFP program set them apart and made

significant difference in their work, which in many ways contributed to the promotion they received at their professional career.

Almost half of the responses from the fellows suggested that their exposure and participation in the ACCFP program have improved access to new opportunities based on the new skills, networks and contacts acquired from the fellowship. For example, some fellows based on their exceptional skills and contributions continue to support the ACCFP program as mentors, training specialist and reviewers. Several fellows have also received top regional and international job appointments and contracts for which they attributed in part to the experience gained from the ACCFP program.

Some professional accounts of ACCFP fellows:

“From November 2015 to February 2016, I occupied a new role of Country Consultant with United Nations University at the Institute for Natural Resources in Africa (UNU-INRA) in the project Impact Assessment of Development Outcomes of Private-Public Partnerships in Agriculture and Environment for Sub Saharan Africa” ACCFP Fellow Round I

Following my participation in the ACCFP program I went on to become a Post-Doctoral Research Officer at the African Technology Policy Studies Network (ATPS), a Pan-Africa organization for Science, Technology and Innovation. I was then promoted to the position of a Senior Research Officer and subsequently made the Executive Director of the ATPS. ACCFP Fellow Round I

Following my experience with the ACCFP program, I have carried on to work with multiple organizations on climate change as a Consultant for JRC (Joint Research Center, EU), Researcher at the CCAFS/CGIAR, and Consultant for the Technical Centre for Agricultural and Rural Cooperation CTA (Wageningen, The Netherlands). ACCFP Fellow Round I

## **5.16 Capacity to mentor other ACCFP Fellow since completing fellowship**

One of the important aspects of the ACCFP program is the aspect on mentoring. Based on the responses from fellows, the majority of them (70%) were of the view that they were capable of mentoring other ACCFP fellows. However, less than 15% of alumni fellows are currently mentoring other fellows. This current limitation may be attributed to the lack clear linkage and networking between the majority of the ACCFP alumni and the current cohort of ACCFP fellows.

## **5.17 Impact of the ACCFP program on career development**

Table 1 shows the mean score ranking and the standard deviation of the impact statements by fellow regarding the impact of the ACCFP program on their careers. The ranking by fellows ranged between 2.70 and 4.65, with a cut-off mark of 2.5. All the mean scores of the impact statements showed favourable rankings by fellows, however, there were significant variation in the mean scores and the

deviations from the mean scores. The highest impact of the ACCFP program on the career according to fellows was that they have significantly improved their knowledge on climate change adaptation and mitigation issues (4.62). This was followed closely by deepened knowledge in climate science (4.41) and regional and international experiences gained (4.31) since their participation in the ACCFP program. Between the mean score ranking range of 4.00 and 4.15, fellows indicated that their research, analytical skills (4.10) and writing skills (4.00) have improved significantly since they participated in the ACCFP program. The fellows also indicated that the ACCFP program has exposed fellows to climate change research networks (4.14), new research environments (4.14), and strengthened their professional confidence and aspiration through mentoring (4.03) from supervisors as well as training workshops organized by the ACCFP program.

Between the mean score ranking range of 3.20 and 3.80, fellows indicated that the ACCFP program has broadened their scope on climate policy (3.79), increased their capacity to published widely (3.66), increased chances of securing new job opportunities and research grants (3.48) and provided the platform to secure other fellowship or scholarship opportunities (3.55). While significant, the least impact according to fellows was the improved capacity to influence climate policy (3.24) and curriculum change (2.29).

Table 1 Mean scores of fellows on the impact of the ACCFP fellowship on careers

S/No.	Statement	Mean	SD
1.	Improved research and analytical skills	4.10	0.72
2.	Improved proposal writing skills	4.00	0.76
3.	Increased capacity to publish widely	3.66	0.94
4.	Increased success in research grants	3.48	1.09
5.	Increased access to new job opportunities	3.48	1.12
6.	Increased capacity to influence policy	3.24	1.02
7.	Increased capacity to influence curriculum change	2.79	1.26
8.	Deepened knowledge on climate science	4.41	0.68
9.	Broadened your scope on climate policy	3.79	1.11
10.	Improved knowledge on Climate Change Adaptation and Mitigation issues	4.62	0.56
11.	Gained regional and international experiences	4.31	0.71
12.	Exposed to climate change research networks	4.14	0.92
13.	Exposed to a new research environment	4.14	0.99
14.	Increase opportunity to secure other fellowships or scholarship	3.55	1.27
15.	Strengthened your professional confidence and aspiration through mentorship	4.03	0.73

**\*Cut-off mark 2.5**

## 5.18 Performance of the ACCFP program

In table 2, the mean score ranking and the standard deviation of the indicators by fellow regarding the performance of the ACCFP program over the years. All the indicators were ranked favourably by the fellows between the range of 3.60 and 4.45. The highest performance score for the ACCFP program according to the fellows was improved capacity and training of young researchers (4.41). This was followed by the platform for learning on climate change issues (4.38). The fellows also scored the ACCFP program very high regarding skills development (4.37), financial support to researchers (4.34) and the platform provided for networking and linkages (4.34), and exchanging ideas (4.25). Other areas where the ACCFP program have performed were the opportunities created for the publication of research outputs (4.07), awareness creation on climate change issues in Africa, development of climate innovations (3.64), and the platform created to influence decision-making in the area of climate change at the different levels (3.89). Overall response from the fellows suggests that the ACCFP program has performed very well in achieving its core objectives of - developing the capacity of fellows from participating institutions, building a sustainable collaborative network of institutions to offer learning opportunities for young scientists and professionals, and developing the capacity of young scientists and professionals to advance knowledge on climate change issues to inform policy and decision making, and mainstream climate change education.

Table 2 Mean scores of fellows on the performance of ACCFP fellowship

S/No.	Statement	Mean	SD
1.	Improved capacity and training of young researchers	4.41	0.57
2.	Financial supports to researchers	4.34	0.72
3.	Platform for networking and linkages	4.34	0.72
4.	Opportunity for publication of research outputs	4.07	0.88
5.	Skills development	4.37	0.84
6.	Platform for learning on climate change issues	4.38	0.86
7.	Platform to influence decision-making in the areas of climate change	3.89	0.96
8.	Platform for exchanging ideas	4.25	0.93
9.	Opportunity to develop climate innovations	3.64	0.73
10.	Opportunity to create awareness on climate change issues on the continent	4.07	0.98

**\*Cut-off mark 2.5**

## 5.19 Emerging areas of focus in climate change adaptation and mitigation

In response to emerging development trends for climate change adaptation and mitigation in Africa, fellows identified key emerging areas they believe can be considered to enrich the future ACCFP program.

- Climate change knowledge and information management

- Traditional knowledge on climate change and its integration into the current knowledge systems
- Climate projections and modelling
- Renewable energy and energy efficiency
- GHG measurements and evaluations
- Climate change financing in Africa
- Green growth and climate compatible development
- Climate resilience in Africa
- Science, Technology and Innovation (STI) capacity for climate change adaptation and mitigation
- Climate change negotiations and the politics of climate change
- Institutional analysis and climate change assessment

## **5.20 Challenges during ACCFP fellowship**

While the ACCFP program has been touted by fellows as a laudable effort to address climate change capacity gap, fellows reported several challenges they faced during their fellowship period.

- Access to fellowship funds – this was cited as a major concern amongst fellows. Some fellows opined that the fellowship grant was not adequate to meet the increasing cost, particularly in other countries. High cost of billing, delayed payments, exchange rate issues and reimbursement of funds were listed as some of the challenges experienced during the fellowship.
- Coordination and supervision – fellows highlight some challenges they faced in coordination and supervision between the host and home institutions. This in some cases led to some disagreements between some supervisors and fellows thereby impeding the progress of work as well as relationship between the supervisors and the fellow. This lack of coordination and clarity may have contributed to misunderstanding of the specific roles of the supervisor according to fellows.
- Language barrier- Some fellows, particularly from non-English speaking countries had a challenge in communication.
- Capacity development and guidance - some fellows, particularly those who participated in the Policy Fellowship felt that they did not have the necessary guidance at the initial stages and were unsure of the appropriate methodologies to be used.
- Lack of information and awareness - some fellows also reported of the lack of information and awareness about the ACCFP program among some key stakeholders. This resulted in coordination challenges especially between the public and private sectors. As consequence, there were problems with access to climate change documentation, particularly from government officials.

## **5.21 Way forward**

- According to fellows, while most logistical challenges were resolved during the course of the ACCFP fellowship, there were a few others that continue to hamper effective and efficient



delivery of the program. The fellows suggested that in addressing these challenges comprehensively, the ACCFP should organize a general forum or platform for all fellows to contextualize all the problems and identify possible solutions.

- To address the funding and funding disbursement problems, fellows suggested funding support and increased involvement of home institutions. In cases where the cost of living and other logistics in host country institutions are exceptionally high, an increased grant was regarded as a remedy by some fellows.
- Fellows suggested that the selection of host institutions should be thorough to ensure selected host institutions live up to their responsibilities in facilitating the fellowship smoothly. The linkages between the home and host institution should be strengthened. This should also apply to the relevant partners and stakeholders involved. There should be enhanced communication and coordination among all stakeholders involved.
- Fellows also suggested that there should be adequate preparations and prior arrangement with the host institution on the fellows' scope of work and the necessary supportive logistics. The ACCFP Secretariat should prepare an introductory letter to facilitate research. For the policy fellows, some fellow suggested the establishment of linkages between fellows and external mentors.

## **6 Conclusions and Recommendation**

### **6.1 Summary of Conclusions**

This study has analysed the impact of the ACCFP program on the Fellows in their contribution to climate science, education and policy development for climate change adaptation and mitigation in Africa since its inception in 2008. Jointly administered by the International START Secretariat (START), the Institute for Resource Assessment (IRA) of the University of Dar es Salaam and the African Academy of Science, and funded by the International Development Research Centre (IDRC), the African Climate Change Fellowship Program (ACCFP) is designed to support early to mid-career professional to undertake experiential learning, education, research and training to increase their knowledge, capabilities and experience for advancing and applying knowledge for climate change adaptation and mitigation in Africa.

Since the program's inception, three phases of ACCFP program have been implemented, matching around 120 Fellows with universities, research centers, and other host institutions across Africa to collaborate with mentors and supervisors to design and implement innovative climate change projects. The program, comprising different fellowship types has allowed for training and knowledge exchange in different African countries for periods between six months and one year, drawing Africa's finest early to mid-career minds at the graduate, post-graduate and post-doctoral level.

The ACCFP program has gained a strong reputation among African researchers and host organizations in identifying, selecting and rewarding excellence for addressing climate change adaptation and mitigation on the continent of Africa. The program has emerged as a depiction of good practice, bringing together Africa's most valuable human resources and infrastructures to build effective research capability, promote training and influence climate policy change in Africa countries.

The study found evidence of a strong impact of the ACCFP program on several areas of the Fellows individual and professional advancement as well as their contribution to research, education and policy on climate change adaptation and mitigation in Africa and beyond. Following participation in the ACCFP program, Fellows have since contributed through climate research, policy and education to a wide array of key development priority areas at different levels. These key development priority areas include agriculture, environmental protection, water resource management, land degradation, health, energy, urban development, forestry and climate induced migration.

On capacity development, the ACCFP program deepened their knowledge on climate change through the training and mentorship from the ACCFP training workshops, host and home institutions. Fellows highlighted the positive impact of the ACCFP program on their capacity to conduct sound and credible research. Another area of significant impact of the ACCFP was the expansion of Fellows' networks with other professional colleagues, climate change organizations and institutions, the exposure of Fellows to national and regional climate change platforms and opportunities to collaborate and build partnerships with key institutions and individuals for climate change research and other related projects.

On career advancement, Fellows considered the ACCFP program as being instrumental in their promotion and career advancement. Majority of Fellows considered the experience, knowledge and skills acquired during the ACCFP program set them apart and made significant difference in their work, which in many ways contributed to their job promotion and career progression. The mobility component of the ACCFP program made a significant impact on their research and career development. For some, fellows it was the first time to travel out of their countries to experience other countries, meeting different people from different backgrounds and exchanging knowledge and ideas on climate change. Fellows highlighted an important impact of the ACCFP mobility arrangement in relation to developing research capacity and complementary skills associated with a different working environment. Since their participation in the ACCFP, some Fellows have gone on to receive awards and recognition for their contribution to research, policy, advocacy, and capacity development on climate change. Fellows considered the ACCFP as an important springboard for subsequent awards and recognition.

The study provides evidence of Fellows who are actively engaged in publishing and the presentation of research papers on climate change adaptation and mitigation at conferences at provincial, national, regional and global levels. While, the precise impact of the ACCFP on publishing and publication rate may be difficult to extricate from several concurring factors, Fellows concur that the impact of the training workshops, mentoring and supervisory roles of host institutions have shaped their research skills, writing skills and presentation skills. In real terms, the ACCFP program has provided resources, opportunities and platforms that have enabled many Fellows to progress in the field of climate change adaptation and mitigation in Africa. High proportions of fellows remained in the field of climate science and policy, and have advanced their professional careers, attaining top research, consultancies and managerial jobs.

Overall, fellows consider the ACCFP program as a valuable program that is performing creditably to achieve some key development objectives in Africa including - developing the capacity of fellows from participating institutions, building a sustainable collaborative network of institutions to offer learning opportunities for young scientists and professionals, and developing the capacity of young scientists and professionals to advance knowledge on climate change issues to inform policy and decision making, and mainstream climate change education.

## **6.2 Recommendations**

Some recommendations made by fellows to improve the ACCFP program are as follows.

- To facilitate a positive and productive engagement that is mutually beneficial, the relationship and communication between the home and host institutions should be strengthened. This will result in enhanced efficiency and a smooth fellowship experience for the fellows. Apart from improved linkage between the home and host institution, the institutional capacity and compatibility with the fellows' research topics is an area that should receive some attention. In pairing up the fellows with host institutions, it is important to establish a clear linkage and

understanding of expectations that would facilitate the optimal achievement of objectives. In addition, joint publications between home and host institutions should also be encouraged.

- A significant proportion of fellows highlighted the need for an alumni network and follow-up program for past fellowship alumni. The alumni network would serve to connect past ACCFP fellows thereby facilitating exchange of ideas and provide a platform for collaborations and partnerships. With the establishment of the network, there should be an interactive virtual platform for fellows to share their latest publications on climate change adaptation and mitigation for referencing, knowledge exchange and sharing of best practices. A suggestion to set up a closed funding call for alumni to pursue outstanding research they had commenced was also put across.
- As a reform measure, the policy fellows recommended more intensive training during the fellowship coupled with an extended mentoring schedule to be able to actualize their set objectives. This ought to go hand-in-hand with improvement in stakeholder engagement to enable ACCFP program deliver better on its mandate. The reforms suggested included an expanded scope of collaborating institutions, more vigorous engagement with governments and NGOs as well as higher private sector involvement.
- The ACCFP program according to fellows should be more regular, thus it should take place regularly either annually or bi annually. This would open up the opportunity to more people interested in climate change and will result in a wider impact. An improvement in communication from the ACCFP secretariat will go a long way in ensuring smooth running of the fellowship. Addressing the communication gap would ease the logistical challenges that confront fellows during the program.
- Meetings between the home and host mentors at the inception stage of the fellowship should be encouraged in order to able to establish a rapport from the onset of the fellowship.
- The Secretariat should address the communication challenge for fellows from non-English speaking nations by putting in place translation mechanisms particularly during inception and training workshops.
- The fellows also proposed the expansion of the list of host institutions to cover countries outside Africa. This would provide international exposure and new experiences outside the African context.

## 7 References

- Aguirre International 2004. Generations of quiet progress: The development impact of U.S. Long-Term University training on Africa from 1963 to 2003. USAID bureau for economic growth and trade, Education office. Washington, D.C. Available at: [http://pdf.usaid.gov/pdf\\_docs/PNADB130.pdf](http://pdf.usaid.gov/pdf_docs/PNADB130.pdf). Accessed on 12 July 2016.
- Benhabib, J. and Spiegel, M.M., 1994. The role of human capital in economic development evidence from aggregate cross-country data. *Journal of Monetary economics*, 34(2), pp.143-173.
- Boeren, A. 2005. A Bird's eye view: Lessons from evaluations of international cooperation programmes in higher education, research and manpower development. Paper prepared for the Nuffic conference 'A Changing Landscape – making support to higher education and research in developing countries more effective', The Hague, the Netherlands, 23-25 May 2005.
- Boeren, A., Bakhuisen, K., Christian-Mak, A.M., Musch, V., & Pettersen, K. 2008. Donor policies and implementation modalities with regard to international postgraduate programmes targeting scholars from developing countries, VLIR-UOS and NUFFIC. Available at:
- CIDA 2005. Evaluation of the Canadian Francophonie Scholarship Program (CFSP), 1987- 2005: A need for reorientation. Canadian International Development Agency, Evaluation Division Performance and Knowledge Management Branch, Gatineau, Quebec, December 2005. Available at: <http://www.oecd.org/derec/canada/37778524.pdf>. Accessed on 11 July 2016.
- Chataway, J., Smith, J. and Wield, D., 2005. Science and technology partnerships and poverty alleviation in Africa. *International Journal of Technology Management & Sustainable Development*, 5(2), pp.103-123.
- Commonwealth Scholarship Commission (CSC), 2009. Evaluating commonwealth scholarships in the United Kingdom: Assessing impact in key priority areas. Commonwealth Scholarship Commission in the UK, London, UK, June 2009. Available at: <http://cscuk.dfid.gov.uk/wp-content/uploads/2011/03/evaluation-impact-key-report.pdf>. Accessed on 9 July 2016.
- Denton, F., Anderson, S. and Ayers, J., 2011. Getting African climate change research recognised. *IIED Briefing: Lessons from Adaptation in Practice*.
- Dillman D, Smyth J, Christian L 2009. Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method. 3rd Ed. Hoboken, NJ: John Wiley & Sons, Inc.
- Enders, J., and de Boer, H. 2002. *The IFP evaluation framework: Approaches and instruments for data and information gathering*. University of Twente: Center for Higher Education Policy Studies.
- European Commission 2000. A methodology for assessing the impact of the Marie Curie Fellowships Volume One: Conceptual Framework. Research Directorate-General. [https://cordis.europa.eu/pub/improving/docs/mcf\\_finrep\\_vol1.pdf](https://cordis.europa.eu/pub/improving/docs/mcf_finrep_vol1.pdf) Accessed on 12 July 2016
- IPCC, 2012. Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change.
- Heslin, P. 2005. Conceptualizing and evaluating career success. *Journal of Organizational Behavior*, 26, 113–136.
- NORAD 2005. Evaluation of the NORAD fellowship programme. Evaluation report 1/2005. Norwegian Agency for Development Cooperation, Oslo and The Hague, July, 2005. Available at: <http://www.norad.no/en/tools-and-publications/publications/publication?key=109531>

- NORAD 2009. Evaluation of the Norwegian programme for development, research and education (NUFU) and of NORAD's programme for master studies (NOMA): Evaluation report 7/2009. Norwegian Agency for Development Cooperation, Oslo, Norway, January, 2010. Available at: <http://www.norad.no/en/tools-and-publications/publications/publication?key=156957>
- Kone 2013. Measuring the Impact of the International Fellowships Program (IFP) in the Area of Education: Development of a Valid and Reliable Measurement Instrument towards fulfillment of the MSc. Thesis, Twente University – Enschede the Netherlands Faculty of Behavioural Sciences
- Lortie-Lussier, M., & Rinfret, N. 2005. Determinants of objective and subjective success of men and women. *International Review of Administrative Sciences*, 71(4), 607-624.
- Polk, O.E., & Armstrong, D.A. 2001. Higher education and law enforcement career paths: Is the road to success paved by degree? *Journal of Criminal Justice Education*, 12(1), 77-99
- Prennushi, G., Rubio, G., & Subbarao, K. (2001). Monitoring and Evaluation. Draft for comments in chapter 3, Poverty Reduction Strategy Papers Source Book. Available at: [http://siteresources.worldbank.org/INTPRS1/Resources/383606-1205334112622/4480\\_chap3.pdf](http://siteresources.worldbank.org/INTPRS1/Resources/383606-1205334112622/4480_chap3.pdf). Accessed 10 July 2016.
- Rotem, A., Zinovieff, M. A., & Goubarev, A. 2010. A framework for evaluating the impact of the United Nations fellowship programmes. *Human Resources for Health*, 8(7), 1-8. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2856526/pdf/1478-4491-8-7.pdf>. Accessed on 11 July 2016.
- SciDevNet, 2010. Africa Analysis: skills needed to draw on climate cash. Linda Norling. Available at: <http://www.scidev.net/global/climate-change/analysis-blog/africa-analysis-skills-needed-to-draw-on-climate-cash.html>. Accessed on 13 June 2016.
- Searle, N. S., Hatem, C. J., Perkowski, L., & Wilkerson, L. 2006. Why invest in an educational fellowship program? *Academic Medicine*, 18(11), 936-940. Available at: [http://journals.lww.com/academicmedicine/Fulltext/2006/11000/Why\\_Invest\\_in\\_an\\_Educational\\_Fellowship\\_Program\\_.2.aspx](http://journals.lww.com/academicmedicine/Fulltext/2006/11000/Why_Invest_in_an_Educational_Fellowship_Program_.2.aspx). Accessed on 12 July 2016.
- Strömbom, M. 1989. Evaluation of fellowships awarded to developing countries: What do the studies tell? *Higher Education*, 18(6), 707-724.
- Teichler, U. 1991. Evaluation of the EC training fellowship programme based on a fellows' questionnaire survey. *Scientometrics*, 21(3), 343-365.
- UNDP 2012. Africa human development report: Towards a food secure future. United Nations Development Program. New York
- World Bank 2004. Poverty monitoring guidance note 1: Selecting indicators. The World Bank, April 2004. [http://siteresources.worldbank.org/INTPAME/Resources/Selective-Evaluations/NoteIndicators\\_eng\\_Apr04\\_doc.pdf](http://siteresources.worldbank.org/INTPAME/Resources/Selective-Evaluations/NoteIndicators_eng_Apr04_doc.pdf)
- World Bank Institute 2010. Joint Japan/World Bank graduate scholarship program (JJ/WBGSP): Tracer study VIII. World Bank Institute, May 2007. Available at: [http://siteresources.worldbank.org/INTJJWBGSP/Resources/Tracer\\_Study\\_VIII\\_2010.pdf](http://siteresources.worldbank.org/INTJJWBGSP/Resources/Tracer_Study_VIII_2010.pdf). Accessed 12 July 2016.
- World Bank. 2009. Making Development Climate Resilient: A World Bank Strategy for Sub Saharan Africa. Sustainable Development Department. Report No. 46947-AFR, Africa Region.

- Wayne, S. J., Liden, R. C., Kraimer, M. L., & Graf, I. K. 1999. The role of human capital, motivation, and supervisor sponsorship in predicting career success. *Journal of Organizational Behavior*, 20, 577-595.
- Whitely, W., Dougherty, T. W., & Dreher, G. F. 1991. Relationship of career mentoring and socioeconomic origin to managers' and professionals' early career progress. *Academy of Management Journal*, 34(2), 331-351.
- Wilby, R., 2007. Decadal climate forecasting techniques for adaptation and development planning: a briefing document on available methods, constraints, risks and opportunities. *Department for International Development, UK*.
- Zinovieff, M. A. 2008. Review and analysis of training impact evaluation methods, and proposed measures to support a United Nations system fellowships evaluation framework. Prepared for the WHO's department of human resources for health on behalf of the UN Task Force on impact assessment of fellowships. Available at: [https://esa.un.org/techcoop/fellowships/SFOMeeting/ParticipantArea/BackgroundDocuments/6\\_REVIEW%20report%20FINAL%20.pdf](https://esa.un.org/techcoop/fellowships/SFOMeeting/ParticipantArea/BackgroundDocuments/6_REVIEW%20report%20FINAL%20.pdf). Accessed on 12 July 2016

## Appendix

### Questionnaire

#### Dear Respondent,

Thank you for accepting to complete this survey. The African Technology Policy Studies Network (ATPS) in partnership with the Institute of Resource Assessment at the University of Dar Es Salaam (IRA-UDSM) is conducting a study to assess the impacts of ACCFP Fellows on climate change adaptation and mitigation in Africa since inception. As a Fellow, you benefitted from one of the Fellowship types. You are therefore invited to complete this questionnaire which will take approximately 15 minutes. Your contribution by way of completing this survey will be very vital for the improvement of the quality and relevance of the ACCFP program.

#### SECTION A: BACKGROUND INFORMATION

1. Name of respondent:
2. Gender: Male ( ) Female ( )
3. Age: <20 Years ( ) 21- 30 years ( ) 31-40 years ( ) 41-50 years ( ) 51-60 years ( ) >61 Years ( )
4. Name of Institution/Organization:
5. Department:
6. Position/rank:
7. Area of Specialization:
8. Sector: Public/civil servant ( ) Private sector ( ) NGO ( )
9. Country:
10. Qualification: First Degree ( ) MSc ( ) PhD ( ) Professor ( ) Others ( ) specify\_\_\_\_\_
11. Telephone number:
12. E-mail:
13. Which type of ACCFP? Science Fellowships ( ) Policy Fellowships ( ) Teaching Fellowships ( )  
Post-Doctoral Research Fellowships ( )
14. Where you working in your home country? Home country ( ) Another African country ( ) Outside Africa ( )
15. What do you consider to be the major impacts of the ACCFP program on your individual or professional career?
16. In your view what are your most significant contributions to climate change adaptation and mitigation since the ACCFP fellowship?
17. Which areas are you making your contribution?
  - Climate curriculum development
  - Climate policy development



Climate science and research

Higher education in Climate change adaptation and mitigation

Others, please specify:.....

18. At what level have you made an impact since the ACCFP?

Provincial/ State level.....

National level.....

Regional level.....

Global level.....

19. Which of the key development priority areas have you made an impact following your experience with the ACCFP? Eg.

Water

Health

Environmental protection

Agriculture

Land degradation

Others, Please specify.....

20. How many climate conferences have you attended since the ACCFP?

Provincial/ State level.....

National level.....

Regional level.....

Global level.....

21. In your view, what was your experience in the research environment or training program provided by the ACCFP?

22. How many patents do you have since the ACCFP fellowship?

23. How many publications have you produced since the ACCFP fellowship?

Journal articles.....

Books.....

Policy Brief.....

24. Has your publication rate increased since the ACCFP fellowship? Yes..... No.....

25. Kindly list at least 5 of the your most important papers on climate change you published or co-authored since the ACCFP

26. How many papers have you published with ACCFP supervisor from the host institution?

27. Have you received any award or recognition of your work on climate change after the ACCFP fellowship? Yes..... No.....

28. If yes, please list the awards or any recognition you have.....

29. What climate related networks (national, region or global) have you joined since the ACCFP fellowship?

30. What is impact of such network on your career progression?

31. How has the ACCFP fellowship improved your career? Kindly rank the response using a 5-point scale with 5= Very high impact; 4= High impact; 3= Moderate impact; 2= Low impact; 1= No impact

<b>Responses</b>	<b>5 (Very high impact)</b>	<b>4 (High impact)</b>	<b>3 (Moderate impact)</b>	<b>2 (Low impact)</b>	<b>1 ( No impact)</b>
Improved your research and analytical skills					
Improved proposal writing skills					
Increased success in research grant					
Deepened my knowledge on climate science					
Broadened my scope on climate policy					
Improved knowledge in Climate Change Adaptation and Mitigation					
Gained regional and international experience					
Developed climate research networks for career progression					
Exposed to a new research environment					
Enhanced opportunity to secure other fellowships or scholarship					
Built my professional confidence and aspiration through mentorship					

32. In your view, which new or emerging areas should be considered to enrich the ACCFP fellowship?