

CURRENT SITUATION AND FUTURE CHALLENGES OF PhD STUDIES IN SUB-SAHARAN AFRICA

A publication elaborated by the Catalan Association of Public Universities (ACUP) in the framework of the programme African-Spanish Higher Education Platform, financed by the Spanish Development Cooperation Agency (AECID)

Coordination: Josep M. Vilalta, Nadja Gmelch (ACUP)

Report written by: Dr Imma Quintana and Adrià Calvet

Translation: Chantal Connaughton

Barcelona, September 2012

Table of Contents

Tables Index.....	4
Figures Index.....	4
Introduction.....	5
Chapter 1. The current situation on PhD studies in sub-Saharan Africa	7
1.1. Factors that better explain the current situation of PhD studies in the Region ..	8
1.2. Specific challenges to PhD studies in the Region	19
Chapter 2. Study on the case of universities in sub-Saharan Africa on the challenges faced by PhD studies in the Region.	31
2.1. Results of in-depth interviews.....	33
2.2 Results of Group Discussion (<i>Focus-Group</i>).....	40
Chapter 3. Cooperation programmes aimed at promoting PhD studies in African universities.....	48
3.1. Changes in recent years in international cooperation for the promotion of higher education	50
a) Raising the profile of higher education in cooperation and development strategies	52
b) Essential importance of training PhD students in Africa.....	54
a) Analysis of the main donors.....	55
b) Classification of the means of providing assistance.....	57
c) Outstanding initiatives	59
3.5. The situation of cooperation in Spain	69
a) Cooperation policies in Spain	69
b) Cooperation policies in Catalonia.....	73

3.6. Final Considerations.....	74
Chapter 4. General Recommendations to improve PhD programmes in sub-Saharan Africa.....	76
Bibliography.....	¡Error! Marcador no definido.

Tables Index

Tabla 1: Challenges in the area of university management	23
Table 2: Challenges in the area of teaching and research	27
Table 3: Challenges in the area of PhD students	29
Table 4: Relevance of PhD programmes in the Region	31
Table 5: Challenges of the PhD programmes in the Region	32
Table 6: Challenges linked to funding	33
Table 7: Relevance of research in PhD programmes in the Region.....	34
Table 8: Specific challenges of research within the framework of PhD programmes in the Region	34
Table 9: Key aspects in the management of PhD programmes	34
Table 10: Identified challenges in the area of PhD students in the Region	35
Table 11: Basic characteristics of the cooperation programmes with universities in the Region	36
Table 12: Proposals to strengthen cooperation programmes in PhD studies in the Region	37
Table 13: Funding PhD programmes: challenges and possible working instruments	39
Table 14: The administration of PhD programmes: challenges and possible working instruments	40
Table 15: Scientific research and faculty: challenges and possible working instruments	41
Table 16: University cooperation projects: challenges and possible working instruments	42
Table 17: PhD students: challenges and possible strategies	43
Table 18: International competitiveness of PhD programmes: challenges and possible strategies	45

Figures Index

1. Scientific production in South Africa and the countries of the SADC region.....	16
2. Scientific publications in South Africa and countries in the SADC region.....	17
3. Scientific production of doctors in countries in the SADC region	25
4. Total aid destined for higher education in Africa, 2002-2006	55
5. Strategic Relevance of PhD programmes in the sub-Saharan region.....	72
6. General Recommendations: priority objectives and action areas to improve PhD programmes	74
7. Specific recommendations to develop courses of action and/or cooperation to improve PhD programmes in the Region	78

Introduction

One of the priority objectives of the *African-Spanish Higher Education Platform* initiative, led by the Catalan Association of Public Universities (ACUP), has been to establish a permanent forum of cooperation, dialogue and exchange between African and European universities. Within this framework, different projects addressed at researching, debating and producing a series of reports on the situation of higher education management in sub-Saharan Africa have been carried out. The first phase of the project focused on the analysis and debate of PhD studies.

In accordance with this objective, during the course of 2012, ACUP developed different initiatives that are now are jointly presented in this report on the 'Current situation and future challenges of PhD studies in sub-Saharan Africa'.

This purpose of this paper is to present the work carried out recently by ACUP to get to know in more depth the challenges faced by PhD programmes in this Region of the African continent. The main objective of the research conducted, has been to contribute to knowledge on this reality, with the aim of facilitating qualitative information that facilitates decision processes linked to PhD studies in the Region, and cooperation between Spanish and African universities.

The report is structured in four chapters that respond to the different work processes undertaken with the purpose of delving into the posed difficulties and challenges and, on the other hand, of facilitating knowledge on the principal agents that participate in the decision-making area of cooperation programmes with African universities.

From this perspective, the introductory chapter of this report places us in a specific reality: it gives us a general vision of the current situation of PhD studies in sub-Saharan African. This chapter has been produced based on bibliographical research focussed on the most recent studies carried out by international organisations and by prestigious academics who know the reality of African universities best. This chapter's

aim is not so much to offer a summary of these studies but to identify, by using this work, the challenges universities in the Region currently face.

This focus, orientated at facilitating a vision of the difficulties and challenges that PhD programmes in the Region face, subsequently allowed the promotion of closer work with African universities that participated in this project. In this way, by identifying the challenges faced by universities in the Region in the first chapter, it later facilitated the foundation to develop specific fieldwork with a group of African universities, with the intention of sharing this general vision, and exploring the reality more in depth.

In this respect, a qualitative *in situ* study was carried out with the Region's universities, based on different techniques of analysis, to get to know the opinions of PhD programme managers regarding the challenges posed to postgraduate studies and lines of improvement. The key results of this fieldwork are presented in this second chapter of this report.

On the other hand, another piece of research promoted within this framework of cooperation, focussed on getting to know more in depth the reality of cooperation programmes aimed at the promotion of PhD studies in African universities. The third chapter covers the analysis carried out in this area, centred on the principal actors and instruments that the international cooperation donor community work with for the promotion and establishment of PhD and research programmes in African universities.

Finally, as a summary of the whole report, the fourth and final chapter presents a proposal of general recommendations guided towards identifying objectives and priority action areas to improve PhD programmes in the Region, as well as precise recommendations that suggest to all the agents and the donors possible areas of intervention to tackle the challenges posed by PhD studies in the Region. This last chapter also takes into consideration the proposals worked on within the framework of the *International Seminar on Innovative Approaches to PhD Education and Research Training in sub-Saharan Africa*, jointly organised by ACUP and the International Association of Universities (IAU), held in the Addis Ababa University in July 2012.

During this seminar, ACUP presented a summary of the studies that have been carried out and that are now presented in this final report.

Chapter 1. The current situation on PhD studies in sub-Saharan Africa

The purpose of this first introductory chapter is to present a broad outline of the current situation and future challenges faced by PhD studies in sub-Saharan Africa. Our approach to this reality, part of the general context conditioned by the situation of higher education in sub-Saharan Africa, is guided towards facilitating a global and descriptive vision of the main challenges that PhD studies in the Region have to face, with the aim of identifying possible spaces of intervention and improvement which have been contrasted in specific fieldwork and outlined in the second chapter of this book. A large part of the issues were also dealt with in debates promoted within the framework of the *International seminar on Innovative Approaches to Doctoral Education and Research Training in sub-Saharan Africa*¹.

To understand the full scope of the current situation of PhD studies in the Region, it is necessary to consider the diverse reality of the countries that make sub-Saharan Africa, as indicated by the different analyses carried out in the Region. In each case, the countries have gone through historical periods and personal experiences that explain the specifics of each context and territorial reality. Taking this reality as a starting point, and taking into consideration the heterogeneity of higher education systems in the Region, it appears necessary to identify those structural factors that, to a greater extent, are shared by different countries and can better explain the situation today of PhD studies in the Region.

¹ V. Final Report. IAU-ACUP International Seminar on Innovative Approaches to Doctoral Education and Research Training in sub-Saharan Africa. Addis Ababa University, 12 to 13 July 2012.

1.1. Factors that better explain the current situation of PhD studies in the Region

Several authors agree that higher education systems in sub-Saharan Africa are at a crossroads. On one hand, on a national level, the processes of democratisation and liberalisation of higher education institutions are placing them in a more transparent and active context. On the other hand, on a global level, the impact of globalisation processes and the knowledge society are pushing for an urgent reform of these systems. The opinion shared by the international community, and increasingly by African governments, considers that universities and PhD programmes will be competitive and will contribute towards the development of processes to overcome problems endemic to each country, if they are guided towards, and positioned in the knowledge economy, and global information and research networks.

In this scenario, the challenge of PhD studies in sub-Saharan Africa is to train professionals with the skills and knowledge for this emerging economy. This strategic objective must be materialised in public policies, defined in a complex political area in which international institutions and organisations, governments, university institutions, PhD schools, research centres, international research networks, foreign and national companies, and local actors, among other agents, participate. All these are necessary to facilitate closer collaboration in the development of public-private partnerships to support postgraduate training. All this takes into consideration that we are in a context that demands greater transparency and assessment of PhD studies, and higher education systems throughout the world.

On the other hand, it should be also noted that it wasn't until the last decade that the World Bank and the international community prioritised higher education systems and science, technology and innovation systems as leading instruments in the economic and social development of developing nations. This paradigm of intervention, that began to develop recently in the African continent, can in part explain that today the spending on innovation and development in many countries is still very little. It also explains that there are weak links between higher education, science and technology

African-Spanish Higher Education Platform

institutions, and industry in the respective countries. In describing this scenario we cannot escape the fact that, in the last few decades, many African countries have very limitedly developed a specific legislative body and there are few explicit state public policies guided towards establishing priorities for the higher education system and PhD studies in the Region.

In this way, it is important to detect those general structural factors that can best help to explain the situation of PhD studies of the countries in the Region and that have, without a doubt, an effect on the training of the faculty and quality researchers, and on the development of the choice of postgraduate studies that allows to make progress in science in the public and private sector in the Region.

On one hand, it is firstly necessary to take into account that higher education, science and technology policies were established in most of the African continent's countries in the 1970s and 1980s. These policies put an emphasis on aspects regarding the organisation of higher education systems and developed, to a lesser extent, aspects regarding planning and content of these interventions, as well as PhD studies. This public area of action has been accompanied, in the last few decades, by less investment in infrastructure for teaching and research, and explains the limitations of the working conditions and the difficulty to promote the quality of scientific production in most African countries in the last few years².

On the other hand, **historical factors** personal to each country should especially be taken into consideration. These factors explain the social, gender and racial inequalities and, in many cases, the specialisation of many countries in specific fields of scientific research. In this context, also to be considered is the fact that some of the higher education systems in sub-Saharan Africa respond to models inherited from

² This insufficient development of the Region's countries' higher education institutions and science, technology and innovation systems must be defined in a context in which, as it was pointed out, these public policies were not in the agenda of state priorities. The capabilities of the higher education systems have been undermined by history itself: years of colonisations, postcolonial leaderships and different types of collective servitude (Akin, 2009). In this historical period, that fits into the context of the economic crisis of the 1970s in postcolonial Africa, and that has been described by several authors as '*Africa's lost decades*', massive regularisation of the higher education has been witnessed and a brake on development of the continent's universities (Prewitt, 2004; Mamdani, 2007, 2008; Luhanga, 2009 y Pereira, 2007).

African-Spanish Higher Education Platform

European traditions, based of the configuration of these institutions in the former colonies (France, Belgium, Portugal and Great Britain), and the historical influences still visible that impact different models in which university institutions operate, and in which PhD studies in the Region develop (IAU, 2010) ³.

Additionally, more in-depth analysis of structural factors shows that there are generally **few strategic public policies on a national level on higher education, science, technology and innovation** guided towards establishing priorities in science and in defining innovative programmes, strategic investment, the guidance of PhD studies, and cooperation between actors and partners critical in this area of intervention to promote the training of teachers and researchers in the Region.

Likewise, to learn more in-depth about the current situation and the future challenges faced by PhD studies in the Region, it must taken into consideration how the massification processes and the growth in university systems in the continent experienced in the last few decades have come up against institutions that should manage structures and scarce resources. In this context, specific governance and management problems can be seen in the very universities, and can be explained by the weakness in leadership and the institutional organisation of the university institutions: governance difficulties in the political terrain, limited training for the development of strategic processes of university institutions, difficulty of promoting information and communication processes that generate international, national and regional partnerships.

In this analysis, it is appropriate to refer to Mouton's thesis (2011) which helps to interpret the reasons that can best explain this situation: 1) the thesis of the deinstitutionalisation of research in Africa; 2) the thesis on chance in PhD studies and 3) the thesis on the growing structuring of PhD education.

³ IAU (2010). *Changing nature of Doctoral Studies in sub-Saharan Africa. Challenges and policy development opportunities at 6 universities in sub-Saharan Africa*. International Association of Universities. The IAU underlines the need to consider the environments in which the different institutions operate as different social, economic, political, cultural, technological, geographic and linguistic factors influence the development of teaching and research in these countries.

In first place, the thesis of the **deinstitutionalisation of research** in Africa explains how the decline in scientific production of the universities of this continent on a global level is motivated by different factors (poor research infrastructure, poorly-equipped libraries and limited access to new technologies or the lack of financing for research) that generate accumulative effects and problems in the institutions. At the same time, they must face growing student enrolment in universities and the effects of the brain drain experienced in the last four decades, and the consequences of the mobility of PhD students, who when faced with the limited choice of postgraduate programmes in their countries, opt to study abroad (South Africa, USA and UK are the destinations of preference).

As a result of these factors, the deinstitutionalisation of research materialises in different realities: weak research institutions and equipment, and out-of-date laboratories: a high dependence on funding for international research (given the scarce governmental investment in innovation and development) and the increase in the production of knowledge on an individual level, be it by means of developed research, again on a personal level of research, or research closely linked to 'consultancy'.

In second place, the thesis on **chance in PhD studies** shows how postgraduate studies in the continent are a *part-time* activity for most of PhD students– the study by the Academy of Science for South Africa (ASSAf) in 2009 estimated that between 65 and 70% of PhD students worked at the same time as studying. The formative background of a large number of PhD students is considered episodic and linked or dependent on work or family commitments, all of which makes cumulative learning or a solid knowledge base difficult. Many PhD students finish their education at a later age (at an average age of above 40 years old) and this has direct impact on scientific productivity.

Finally, in third place, the thesis on the **growing structuring of PhD education** shows how the direct results of the deinstitutionalisation of research in the continent is the widening lack of connection between research and doctoral training, especially in an

environment of individualised research. The chance of PhD studies creates new requests of doctoral training and supervision. More universities increase the structure and manage postgraduate studies, and specific measures to support this training take root.

In this context, and in view of this reality, Mouton (2011) indicates as a main challenge the need to consider how to manage the growth in enrolment in masters and PhDs with an infrastructure of exhausted knowledge, and the capacity of academic supervision stretched in view of the need of guaranteeing high levels of quality. To be able to tackle this challenge, he points out, significant financial investment is required that explains, to a large extent, the increase in the number of international foundations and donor agencies that develop cooperation programmes with PhD studies that the Region's universities offer.

Delving into this last economic aspect, the Region's universities should face clear financial limitations and public resources that make the development of more strategic public policies harder, given that, as has already been pointed out, investment in science, technology and innovation is very low in sub-Saharan African countries. On the other hand, research on the impact of higher education on each country's economy is poorly developed, as is the weight of PhD research in the national system of science. African companies invest little resources in research, development and innovation. There are also very few public policies that motivate the participation of the private sector in the development of science, technology and innovation (Mohamedbhai, 2011).

In close relation to these difficulties, there is another explanatory economic factor that has a direct impact on PhD studies. As Caillaud et al (2009) emphasise, **poor financing of postgraduate education** is one of the main problems of the Region's higher education systems. According to the authors, the reduction in public spending per student has adverse impacts in terms of quality and teaching, and research training.

On the other hand, it is equally relevant to consider that in the majority of sub-Saharan African countries, **centralised policies that limit university autonomy** complicate improvement in the university system, and have an effect on the quality of teaching and research in the Region. The legal framework relative to higher education varies a lot between countries, and as has been discussed, higher education is not always on the political agenda and there is no specific legislation that allows more strategic development.

But to understand the full complexity of the situation of PhD studies in the Region it is also important to consider the endemic and strongly structural problem that has been indicated, and that the African continent suffers: the **brain drain**. The best university students graduate in European, Asian and North American universities, and very few return to their country of origin (Adams, King y Hook, 2010). As was the case a few decades ago in countries such as India and China, the continent is losing a significant number of its best scientists and specialists who emigrate to other regions in the world (AU, 2005). For decades now, the African diaspora provides trained scientists and intellectuals, in many cases in the African continent, but as they return to other countries, the benefit of this high level of training is minimal for the Region. Until recently, this reality forms an extended vision in many African decision-makers, who say that investment in higher education fuels the brain drain, and this is how they justify reduced investment in the university system (Bloom, Canning y Chan, 2005).

For the purpose of our analysis centred on the situation and challenges of PhD studies, it is noteworthy that the brain drain has had and has direct impact on the further training of university graduates. The best educational opportunities, working conditions, remuneration and best perspectives of retirement abroad explain a large part of these migratory processes (IAU, 2010; Tettey, 2010). On the other hand, this reality has had an immediate effect on the mobility of students in the last forty years and has generated a progressive brain drain in the Region.

In this analysis, it is worth emphasising that just as it was pointed out in the introduction of this section, it is only very recently that international organisations, such as the

African-Spanish Higher Education Platform

World Bank, the United Nations or UNESCO, have recognised the capacity of higher education and postgraduate studies in acting as a strategic economic resource for countries of the African continent, and have recommended the development of specific public policies in this area.

According to this new paradigm, higher education systems are facilitating instruments in achieving the Millennium Development Goals, and are perceived as sources of creation of socioeconomic transformation and long-term growth, given that they promote strategic development in science, technology and innovation. In this respect, different international actors unanimously stressed, as a strategic objective, the need of placing the economies of the sub-Saharan African counties in the knowledge economy, highly competitive, and based on scientific and technical innovation⁴.

In this context, it is worth emphasising the fact that the strategic guidelines and proposals of intervention that facilitate the reports that the World Bank has published in the last few years on higher education in the African continent⁵ have had a profound impact not only in some of the continent's countries but also in the visions, policies and practices of the donor countries as well as the agencies that coordinate international cooperation (Jan de Gast, 2005).

Finally, the recent massification processes that most universities of the countries in the Region have experienced, as indicated previously, must be taken into consideration. Whilst in 1991, 2.7 million students were undertaking university studies in the African

⁴ In this framework of higher education development in sub-Saharan African that began at the start of the century, the reports published by the World Bank show the impact that postgraduate education has on economic growth and the reduction of poverty. Higher education can create public benefits such as scientific and technological development, and the entrepreneurial capacity of a country, as well as private benefits that guarantee improved employment prospects for graduates, higher salaries, greater saving capacities, and higher levels of health and quality of life for the population.

⁵ In the report "*Knowledge for Development*" (1999), the World Bank shows the positive correlation there is between the teaching of maths, science and engineering, and the improvement of the economy, at the same time as confirms the return of private investment in higher education in the African continent is 20%, similar to the return of investment in secondary education.

On the other hand, in studies such as "*Improving Tertiary Education in sub-Saharan Africa: things that work*", World Bank (2004), the report on a Regional Training Conference, Accra (Ghana), September 24-25, 2004 and "*Constructing Knowledge Societies: New Challenges for Tertiary Education*", World Bank (2002), the role of higher education in the construction of a country's technical and professional capacities is highlighted, having a positive impact on primary and secondary education systems.

African-Spanish Higher Education Platform

continent, in 2006 the number reached 9.3 million students. In this period, the annual growth rate was 16%. The increase in universities has added pressure to the higher education system in African countries who are faced with the difficult of guaranteeing quality education. In this context of growth, the number of university students in sub-Saharan Africa has gone from 2.1 million in 1999 to 3.5 million in 2005. But despite the substantial increase in the number of enrolments in the university system, the enrolment rate in higher education in sub-Saharan Africa is one of the lowest in the world: 5% across the Region (Bloom, Canning y Chan, 2005).

Alongside the factors already indicated that help understand the situation in which doctorate studies in the Region are found, it should be additionally noted that in the last few decades the development of research has been promoted, especially by international cooperation, generating specific policies. Different countries, organisations and institutions guide strategies and investment in science, technology and innovation in sub-Saharan Africa, producing a large melting-pot of international cooperation programmes that respond to diversified interests, and establish their own management systems, with very little coordination. The priorities of international cooperation have not always coincided with the Region's interests, and the review of the policies and practices of the donors in the last decade has, above all, been motivated by the noticeable increased attention that the international community has dedicated to the development of higher education systems, science and technology in the African continent (Jan de Gast, 2005).

In this context, it should be stressed that in the last decade there are a significant number of international donors that facilitate support, and that fund programmes and projects closely linked to the growth and strengthening of training, education and research within the framework of PhD studies, a matter that is dealt with more in depth in the third chapter of this report.

On the other hand, to understand the dimension of the current situation and the challenges faced by PhD studies in the Region, it is necessary to refer to the limited development in quality and competitive research in the Region. Without a doubt, this

has an affect not only on scientific results and visibility on a global level of research developed in sub-Saharan Africa, but also in the processes of improvement of PhD studies in the Region.

In this regard, as stated by the African Development Bank Group (2008), the results and projection of research on a global level are weak if they are compared to other continents. In this context, the number of competitive research centres is very small; the ratio of scientists and engineers in R&D in the African continent is limited⁶ and about 30% of university professionals of the Region live outside Africa, with an estimate of nearly 50,000 Africans with PhDs living outside the continent.

In this scenario, science in Africa is led by three countries: Egypt (North), Nigeria (Central) and South Africa (South), who produce 80% of the total of scientific publications in the continent (Adams, King y Hook, 2010)⁷.

From 1999 to 2008, the central African region produced a small number of scientific articles (approximately 7100 per year), despite being the region with the greatest number of countries. The northern region has recorded most articles (more than 10,500 in 2008), despite being made up on only five countries, whilst production in southern countries is about that of the northern region (10,000 publications per year).⁸ These indicators point out an unequal distribution of research and innovation capacity between countries and regions throughout the African continent.

⁶ Ratio of scientists and engineers in R&D:

Africa: 35/million inhabitants

Brazil: 168 /million inhabitants

Europa: 2.457/million inhabitants

United States: 4,103/ million inhabitants

⁷ These authors classify the African continent in three regions: North, Central and South, and are made up of the following countries:

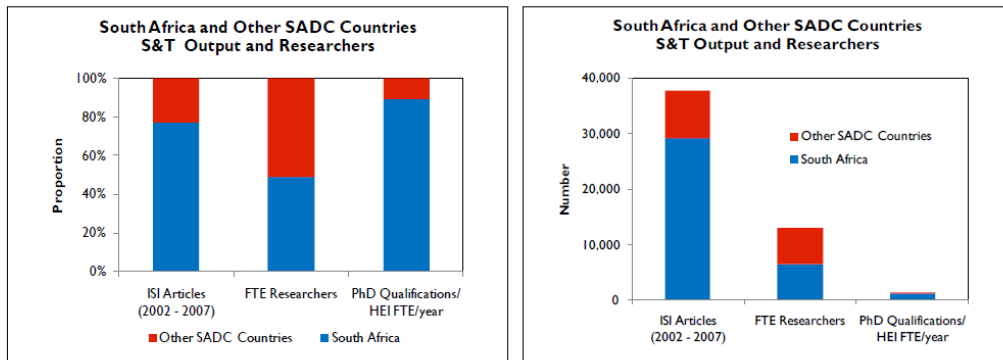
- a) North: Egypt, Tunisia, Morocco, Algeria and Sudan.
- b) Central: Nigeria, Kenya, Cameroon, Ethiopia, Uganda, Ghana, Senegal, Ivory Coast, Burkina Faso, Madagascar, Benin, Gambia, Reunion, Gabon, Mali, Niger, Republic of Congo, Togo, Eritrea, Guinea Bissau, Ruanda, Mauritania, Central African Republic, Guinea, Chad, Burundi, Sierra Leone, Liberia, Comoros, Equatorial Guinea, Cape Verde, Djibouti, Sao Tome & Principe and Somalia.
- c) South: South Africa, Tanzania, Zimbabwe, Botswana, Malawi, Zambia, Namibia, Mozambique, Mauritius, Democratic Republic of Congo, Swaziland, Seychelles, Angola and Lesotho.

⁸ The total of scientific articles published in the African continent (27,000 per year) is comparable with the half the annual production of the Netherlands (Adams, King y Hook, 2010).

African-Spanish Higher Education Platform

On the basis of a summary analysis of the results of post-doctoral research in universities in sub-Saharan African, Kotecha et al (2011) confirmed that South Africa leads this scenario in the Region, in categories that include scientific publications, the number of doctorates, student enrolment rates and the number of public universities.

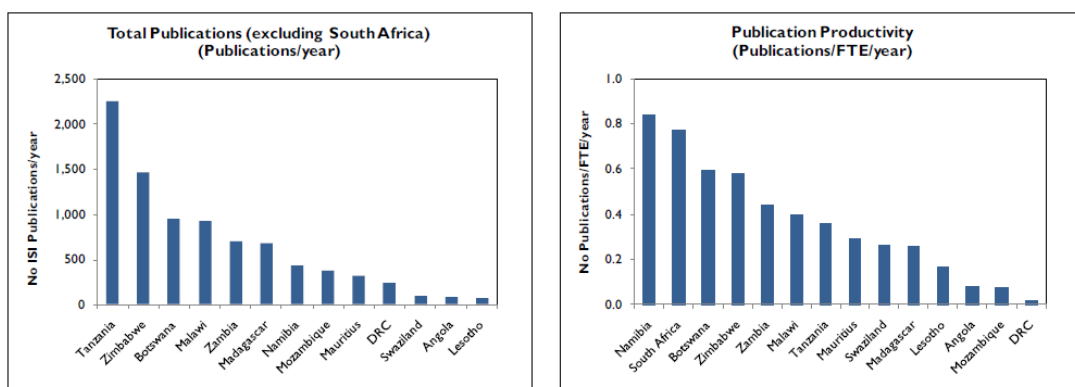
Figure 1: Scientific production in South Africa and the countries of the SADC region



Source: Kotecha et al (2011)

On the other hand, the rest of the countries in the Region show a low level of scientific production, in percentages that are below the average of developed countries.

Figure 2: Scientific publications in South Africa and countries in the SADC region



Source: Kotecha et al (2011)

(*) It must be taken into consideration that the average for developed countries is between 1.2 and 1.5 publications per year.

African-Spanish Higher Education Platform

Finally, with regards to collaboration clusters and partnerships for the production of new knowledge between universities, despite there being an intense North-South collaboration (scientific articles of several countries in the Region have a foreign co-author in more than 90% of cases), the same is not true for South-South partnerships. Some collaboration between African countries is noted but it has the tendency to be organised around four different and separate clusters: the Arab countries of the North, the former French colonies, the former British colonies – excluding South Africa and neighbouring countries – and the rest of the countries in the Region.

In this scenario, it must be taken into consideration that research carried out in universities depends, to a large extent, on international funding. As has been pointed out, this conditions individual scientific careers (“*CV building research*”) that are little connected to the priorities of universities institutions where the work is carried out, and to the PhD programmes that are offered to university students (Mouton, 2011). As Mohamedbhai (2011) points out, research becomes a personal objective that makes the creation of competitive research teams difficult.

In this context, the role and influence of international agencies and foreign governments in the deciding research agendas are very relevant as these processes generate characteristics specific to research in the African continent. As UNESCO (2008) indicates, scientific research in the African continent has its own singularity that can be summarised in the following aspects:

- a) Not well connected to the personal interests of the African countries.
- b) Has short-term calendar.
- c) Little connected to PhD programmes or existing research centres.
- d) Reinforces academic and individual research paths.
- e) Inefficient and not very effective given that it does not allow to get much out of the accumulated experience.
- f) Makes the coordination difficult between researchers, research groups and centres, and universities and makes it more difficult for spaces of greater synergy to appear.

- g) Prevents the sustainability of ongoing research processes.

1.2. Specific challenges to PhD studies in the Region

As it has been indicated in the first part of this chapter, the analysis of PhD programmes in sub-Saharan African should take the socio-political and historical reality of each country into consideration, and can refer to the limitations of a structural, political, legal and organisational nature that can be identified for optimal development of higher education in the Region. When this analysis focuses more specifically on the identification of certain challenges faced by PhD studies and the training of researchers in the Region, it is clear that the context, in which research is developed in each country, is decisive.

Taking these premises into consideration, and when faced with the difficulty of carrying out a detailed analysis of the situation of PhD studies and research in each country of the sub-Saharan region, this section aims to present a comprehensive vision of the challenges that the most recent pieces of research have faced in this field and that have been identified as priority in this field of action.

Different institutions and academics have recently elaborated specific studies geared towards detecting difficulties and spaces for improvement in PhD studies in the Region (ASSAF, 2010; IAU, 2010; Mouton, 2011)⁹. Moving forward with Mouton's thesis (2011)

⁹ ASSAF (2010). *The PhD Study. An evidence-based study on how to meet the demands for high-level skills in an emerging economy*. Academy of Science of South Africa. Report specifically focussed on detecting challenges and opportunities for the training of doctors in South Africa, with the aim of facilitating proposals to improve Phd programmes in this country.

IAU (2010). *Changing Nature of Doctoral Studies in sub-Saharan Africa (2009-2010). Challenges and Policy Development Opportunities at 6 universities in sub-Saharan Africa*. International Association of Universities. Report that aims to study the changes that higher education institutions in sub-Saharan Africa are introducing to improve Phd programmes and to strengthen the quality of research. The report focuses on the analysis of six specific cases: the University of Doula (Cameroon); the University of Ilorin (Nigeria), Kenyatta University (Nairobi, Kenia); the University of Sciences and Technologies of Benin; the Gaston Berger University of Saint-Louis (Senegal) and the National University of Ruanda.

Mouton, J. (2011). "The state of doctoral training in sub-Saharan Africa: Statistics, Analysis and Challenges". AAU Conference of Rectors, Vice-Chancellors & Presidents (COREVIP). Stellenbosch, 30 May - 3 June 2011. In this intervention, Mouton identifies specific challenges for Phd students throughout the Region.

presented earlier, the main contributions of these analyses offer an overview of the challenges that should be tackled from different decision-making spaces of the university institutions of each country (areas and/or departments, administration bodies and management of the faculties, PhD schools, administration bodies and management of the universities).

For the purpose of our analysis, we would like to make a summary of the main contributions with the three principle factors that can explain the general difficulties that affect PhD studies and the training of researchers in the Region.

- 1) Insufficient number of quality, sustainable and competitive PhD programmes on an international level, that respond to the needs of sub-Saharan African countries.
- 2) Limited number in the production of doctors in the Region and scarce development of basic research that hinders, in a vicious circle, the proper training of PhD students who will make up the new generation of academics.
- 3) Difficulty in retaining senior university academics who can run the PhD programmes, research teams, and improve the quality of scientific training, and guarantee the preparation of future generations of teachers and researchers.

With the aim of delving further into these difficulties from the perspective of identifying specific challenges that the current situation poses to PhD studies in the Region, these challenges are classified as follows:

- a) Challenges in the area of university management
- b) Challenges in the area of teaching and research
- c) Challenges in the area of PhD students.

Firstly, if we refer to the challenges identified in the area of university management, it must be considered that PhD studies and the level of academic and research

specialisation are not very present in the strategies and priorities of the university institutions when, on the other hand, these studies can only be taken in these universities. There are few strategic plans elaborated by the universities that define medium and long-term objectives for PhD studies, training for research and that identify priority research areas (UNESCO, 2008). On the other hand, PhD studies, and their organisational structures and management do not always hold strategic positions in university institutions. This makes it difficult to have an impact on research policies and priorities in each institution (IAU, 2010).

Despite PhD programmes being relatively young in sub-Saharan Africa and the fact that they are developing quickly, the university environments that favour its expansion and associated research are still not very competitive. Infrastructure for research in the universities in the Region, apart from the case of South Africa, are very weak and a good part of the equipment is out-of-date, and there are few resources to guarantee work spaces in quality conditions, such as research centres, laboratories, libraries, seminar and work spaces or access to ICT and Internet connection (IAU, 2010). With all of this, the role of libraries as research and support instruments for PhDs should be highlighted along with the recent introduction of the Open Access system, which has without a doubt, facilitated open mechanisms for the exchange of knowledge and learning.

On the other hand, it must also be taken into consideration that there are few collaboration and cooperation processes active between universities in the continent to encourage more competitive PhD programmes, the training of researchers and to facilitate greater student mobility in the Region. The majority of PhD students in sub-Saharan Africa who decide to study in the continent do so in South Africa (ASSAF, 2010).

Equally, it must be taken into consideration that there is scant internationalisation of PhD programmes in the Region (IAU, 2010). Internationalisation and cooperation with other universities have still not been strategically integrated in the development of the programmes offered. Equally considered problematic is the fact that PhD students are

not requested to do teaching and research stays abroad. The development of innovative practices and strategies on an international level for PhD studies can have a positive impact on the quality of training and developed research. It can facilitate greater integration of research results in more consolidated and global research structures. In the area of university education, beyond consolidating established partnerships with countries in the North, on the foundation of mutual interest networks and the availability of funding by donors¹⁰, it is relevant to strengthen the creation of South-South partnerships and interregional collaboration, that in the Region, is concentrated above all in scientific networks with South Africa and Kenya (Mouton et al, 2008).

To address the identification of specific challenges that concern the university management of PhD studies in sub-Saharan Africa in more depth, it must be considered that research on this reality is very recent and has responded to the interest raised by different actors. In this regard, it is also relevant to point out that all research agrees on identifying the great difficulty that exists in accessing the information and the databases of the PhD programmes of each country that allow to get to know in detail the content of PhD programmes, teaching staff (academic training, gender, average age, quality of scientific production), the profile of students (socio-demographic information, time of stay in the programme, subsequent employment) and the dropout rate, among other information.¹¹ These limitations of access to basic information

¹⁰ Priority collaboration of the universities in the Region is with countries that are scientifically more productive like the United States of America, Great Britain, Germany and other European countries. Collaboration with Canada, Sweden and the Netherlands is also very much influenced by the donor agencies.

¹¹ There is a high number of categories and indicators that can integrate a database that facilitates information, and allows more efficient management of Postgraduate studies. The research carried out and that have been consulted in the elaboration of this report has generally gathered information in the following fields:

- a) Specialisation of doctoral programme
- b) Number of enrolments per course
- c) Student profile per course based on sociodemographic indicators (disaggregated by gender, age, race, ethnicity, origin, level of family income, background of parents, place of residence, work, civil status, children, etc.)
- d) Graduation rates of doctors
- e) Average time of graduation

African-Spanish Higher Education Platform

complicate the processes addressed at detecting needs and of improving the choice of programmes on a state level and by fields of knowledge (Mouton, 2011). Equally, this lack of information has an effect on the low capacity of university institutions in creating follow-up processes and the evaluation of PhD programmes.

This lack of data, explained by various financial and management reasons, can also be attributed, as Dill (2011) indicates, to the dynamic of individual competency and to the academic rivalry that exists in universities, making difficult the centralisation of information relating to of PhD programme management and research in every university institution.

In this area, there is scarce knowledge on doctors' capacity of accessing the job market and their employability. There is also limited capacity in gathering information relative to the value that businesses, administrations or institutions give to graduates' skills and competencies, as well as the strengths and weaknesses of the training received. Certain specific studies undertaken in this field of analysis in African businesses identify PhD students' the lack of knowledge on the most current theories and debates, their little international experience and training received is too fragmented, and the poor development of professional, organisational and managerial skills as worrying (British Academy, 2009).

On the other hand, it is evident that as in most sub-Saharan African countries, academic positions are not attractive to young university students who opt for opportunities and professional careers in other economic sectors, such as industry or in companies, or in other cases choose to work outside the African continent (Tetty, 2006; Mihyo, 2007). This consideration places another problem in the analysis, which is specific to PhD programmes and the training of researchers in the Region, related to

-
- f) Profile of the academic staff (distribution by gender, age, race, ethnicity, origin, status, level of studies and qualification, origin of qualification, quality of scientific production, publication of articles and books, theses supervised, etc.)
 - g) Persons from the academic staff undertaking PhDs and Masters, and universities
 - h) Vacancies in the academic staff.

the little capacity of higher education studies in facilitating pathways to employment integration in the academic field (Baschung, 2010).

Additionally, it must be indicated that the lack of specific information on PhD studies complicates relevant knowledge for the overall system of science, technology and innovation of each country. There is also poor knowledge on the resources available to involve the diaspora's talent in higher education training programmes that encourage the participation of African academics who reside outside their countries of origin. This, as we have previously seen, is one of the urgent problems affecting the science, technology and innovation system in each country.

Delving further into this area of university management, recording and monitoring mechanisms do not exist in some universities, or are very basic. This reality has generated the need of considering new management processes addressed at facilitating accreditation/certification systems for the supervision of PhD students; the development of e-supervision systems (that allow co-management of theses abroad); or mixed supervision mechanisms that can be integrated by different management levels (local-national-regional-international) (IAU, 2010).

In this scenario, PhD programmes in sub-Saharan African present specific difficulties in organisation and management that can be explained by different reasons. In some cases, the diversity of sources of funding of PhD programmes, as an element that contributes to the existence of different inhomogeneous administrative and management structures, is highlighted (British Academy, 2009). Collaboration between institutions or the exchange of information and experience is very limited. For competition between international donors to survive, in many cases PhD programmes suffer from lack of sustainability, unpredictable funding, weak harmonisation in relation to other programmes and poor coordination. (Teferra, 2011). Information on PhD programmes is fragmented in each country, and spaces of strategic management are not created. (IAU, 2010).

On the other hand, as the studies consulted show, the lack of general and shared vision on research being developed within the framework of PhD studies in universities in each country, and throughout sub-Saharan Africa, is worrying. This situation indicates that the capacity of developing a systematic register of research agencies is urgent in order to allow more efficient decision and management processes in PhD programmes, and the training of researchers, facilitating the identification of strategic priorities in the universities and to address science, technology and innovation policies on a national level.

Table 1: Challenges in the area of university management

1. **PhD studies and training of researchers not well integrated in strategic policies and in university institutions' agenda of priorities.**
 2. **Difficulties in the specific organisation and management of PhD programmes that can be explained by different reasons linked to university management (diversity of sources of funding, different inhomogeneous administrative and management structures, limited collaboration between institutions, etc.).**
 3. **Limited collaboration and cooperation processes between universities to encourage more competitive PhD programmes, the training of researchers and greater student mobility in the Region.**
 4. **Limited internationalisation of PhD programmes in the Region.**
 5. **Difficulties in accessing information and PhD programme databases in each country that allow to get to know the content of PhD programmes in detail the, teaching staff, student profiles and the dropout rate, among others.**
 6. **Scarce knowledge on doctors' capacity of accessing the job market and their employability.**
 7. **Poor knowledge on the resources available to involve the diaspora's talent in higher education training programmes.**
-

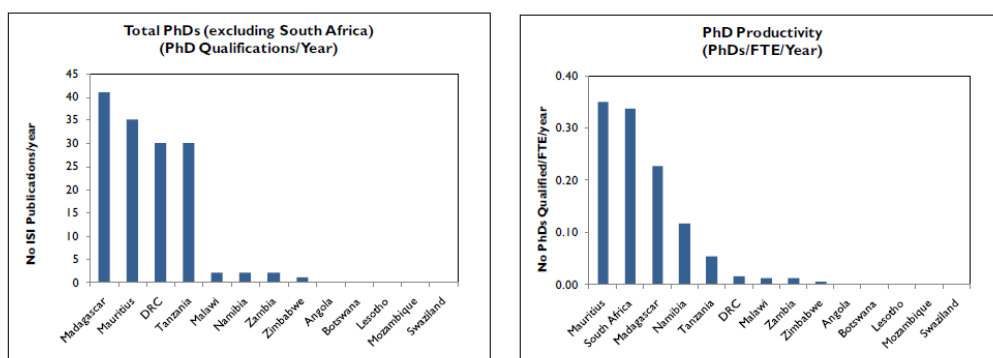
8. Lack of general and shared vision on research that is being developed within the framework of PhD studies in universities in each country and throughout sub-Saharan Africa.

Source: own table

Secondly, if we identified in our analysis the challenges posed in the area of teaching and research, it must be considered that the working conditions and salary of academics and researchers are low if they are compared with the salary and working conditions that other economic sectors offer. This contributes to the fact that universities are not very attractive and do not create opportunities for university students. (Mohamedbhai, 2011).

All these processes and practices generate little vitality and visibility in the scientific communities in sub-Saharan Africa universities and this is shown in the evaluation processes of university research, and in the data relative to the publication of articles of high academic impact, the presence of researchers in conferences or different publications, as has been presented in the previous section. On the other hand, it must be taken into consideration that throughout the Region, South Africa registers 89% of the Region's doctors, with doctors' levels of productivity being very low in most of countries in the Region.

Figure 3: Scientific production of doctors in countries in the SADC region



Source: Kotecha et al (2011)

In this scenario and in general terms, the research consulted highlights more specific challenges that are summarised below. On one hand, it is shown that a low proportion of enrolled students in PhD studies in sub-Saharan Africa and the specialisms chosen are above all linked to employment options outside the academic world. This reality, to a large extent, limits the potential of regeneration for teachers, researchers and academics in the universities in the Region. In this respect, the proportion of women doctors in sub-Saharan Africa is very low and gender inequality in the enrolment rate of PhD programmes is evident which is then repeated in the academic staff (glass roof, and vertical and horizontal inequality)¹². Women continue to represent a small fraction of academic staff and its low visibility hinders the generation of gender equality models in future academics.

On the other hand, postgraduate training is not producing a sufficient number of future academics in sub-Saharan Africa. The enrolment rates in masters and PhDs remains relatively low, with a tendency to get smaller in certain countries in the Region (Tetty, 2010).

Different factors have been identified that can explain this tendency, as is shown in this section. Koen (2007) considers, among others, insufficient funding of PhD studies and that this outlines a scenario in which students have difficulty in concentrating on work as they have to combine it with a job. For this reason, obtaining the qualifications takes longer or can mean students abandon their PhD studies.

Additionally, the studies cited agree that an issue of great importance is the low qualification of the academic staff that run and make up the PhD programmes in sub-Saharan African countries, and that this limits the quality of the choice of PhDs, the training of researchers and the growth capacity of the most competitive research. In most programmes, the number of PhD professors is very low and this has an impact, on one side, on the little capacity of promoting research and creating competitive

¹² Although in the majority of countries in sub-Saharan Africa, men register higher enrolment rates in PhD studies than women, it must be pointed out that in South African universities the values are almost on par (Tetty, 2010).

teams, and on the other hand, the capacity of academic staff of supervising their own students in their research careers, or creating research environments more favourable to the development of science, technology and innovation. (Mohamedbhai, 2011; British Academy, 2009).

Tettey (2010) considers it urgent to address this problem when he highlights the low number of doctors in the faculty of PhD programmes. He questions the general research capacity of the university system and the capacity of building the next generation of academics of sub-Saharan African universities.¹³ It is difficult, he points out, to provide quality information when there has not been a proper increase in academic staff. The analysis of the current staff on these programmes, and the vacancies seen in different cases, is a good indicator of the distance that exists between the capacity of the available human resources, and the real needs for the development of teaching and research in optimum conditions of quality and competitiveness.

On the other hand, Phillips and Pugh (2006) believe that the insufficient qualification of the faculty of PhD programmes generates specific problems in the selection processes of the people who will supervise the students and train researchers. In many cases, criteria that should be basic such as experience in research and the level of research activity are not taken into consideration, along with the field experience in supervising students and the management of PhD theses.

Also in the analysis of the issue linked to the qualification PhD programmes professors, the lack of information relative to strategies of the reincorporation of doctors that have been trained abroad has an affect on the capacity of designing and managing PhD programmes, and on the training of researchers. (British Academy, 2009).

¹³ The World Bank (2008) placed the vacancy rate of staff in universities in sub-Saharan Africa between 25 and 50%.

Table 2: Challenges in the area of teaching and research

1. Low investment and funding in postgraduate training explains the low competitiveness of universities that favour the development of research (infrastructure and equipment that are outdated, and short of resources).
2. The working and salary conditions of academics and researchers are not attractive to university graduates who look for employment in the country or abroad.
3. Research depends, to a large extent, on international funding, that strengthens the development of individual scientific careers and makes the creation of research teams difficult.
4. In general, the evaluation of scientific production in the Region shows little vitality and visibility of the research developed in sub-Saharan African universities.
5. Postgraduate training is not producing a sufficient number of future academics in sub-Saharan Africa.
6. The limited qualification of the academic staff who manage and make up PhD programmes in African countries, limits the quality of the choice of PhDs, the training of researchers and the capacity of growth of more competitive research.

Source: own table

Finally, if we refer to the challenges posed in the area of PhD students, it must be considered that just as has been indicated, the proportion of enrolled students in PhD programmes in sub-Saharan Africa is very low and specialisms chosen are, above all, linked to employment options outside the academic world. This reality limits the potential of regeneration of teachers, researchers and academics in universities in the Region. On the other hand, as has already been mentioned, gender inequality in the enrolment rate of PhD programmes is evident which is then repeated in the academic staff. It is also relevant to find out the reasons for which students decide to study a PhD. Generally these reasons are not explained with scientific reasons but in many cases, being able to access a grant or scholarship gives university graduates a means of living that allows them to have a family and dedicate a long time to their PhD studies.

In this area, deficiencies are evident in the systems of identification and selection of the most suitable candidates to undertake PhD studies in departments or faculties. This is a matter that particularly stands out given that it is precisely the PhD students that make up the foundation on which the next generation of academics and researchers should be built in the Region. The best candidates are not always chosen. In some cases, these selection systems do not exist, and in others, they are regulated by different criteria that does not provide information on the quality of the candidates. On other occasions, the low capacity of selection of PhD students is worsened by the difficulty of the university institutions in establishing student monitoring, supervision and evaluation systems. Some pieces of research identify aspects that explain the reasons behind these difficulties, as have been expressed by the people in charge of supervising PhD students: a) the time to carry out the function is limited; b) there are too many PhD students to supervise; c) a lack of vision throughout the programme supervision processes; d) the funding of research by other institutions has an impact on the quality of supervision: senior supervisors hand over their responsibilities to members of the junior team (IAU, 2010).

Additionally, the scant information that students have on the sources of funding and the grants that they can access to undertake PhD programmes is identified as another specific challenge in the Region, and is connected to the high cost of training and the difficulty in getting full time postgraduate students.

Equally, the information provided on future plans and the possibility of developing post doctorate careers in the scientific field in the country's university is scarce. As has previously been mentioned, this has an affect on the limited capacity of training researchers, and renovating and revitalising the academic community by incorporating young qualified people into the Region's universities.

As has been seen in this chapter, an analysis of the main research that has been undertaken recently by PhD studies in the Region has enabled us to identify the factor that can best explain the current situation of PhD studies in sub-Saharan Africa and the

future challenges that they pose in the Region. The following table summarises the most relevant challenges that have been presented in this introductory chapter.

Table 3: Challenges in the area of PhD students

-
1. **The proportion of students enrolled in PhD studies in sub-Saharan African is very low. Specialisms chosen are above all linked to employment options outside the academic world. The reality limits the potential of regeneration of teachers, researchers and academics in the Region's universities.**
 2. **Gender inequality in the enrolment rate of PhD programmes that after is repeated in academic staff.**
 3. **Deficiencies in the identification and selection systems for selecting the most suitable candidates to undertake PhD studies.**
 4. **University students have scant information on access to sources of funding and grants available to undertake PhD programmes.**
 5. **Limited follow-up and evaluation systems.**
-

Source: own table

Chapter 2. Study on the case of universities in sub-Saharan Africa on the challenges faced by PhD studies in the Region.

In this chapter, the results of the qualitative study that has been carried out with universities in sub-Saharan Africa that have participated in the *African-Spanish Higher Education Platform* initiative, promoted by the Catalan Association of Public Universities.¹⁴ This specific study's aim was to find out opinions and corroborate the

¹⁴ Specifically the participating universities have been the following:

- Senegal (Cheikh Anta Diop University, Dakar)
- Cameroon (University of Yaounde I, Yaounde)
- Madagascar (University of Antananarivo)
- Mozambique (Eduardo Mondlane University, Maputo)
- Angola (Agostinho Neto University, Luanda)
- Ethiopia (University of Adis Ababa)

African-Spanish Higher Education Platform

universities and people in charge of PhD programmes, the main challenges and difficulties that these studies pose in the Region, all of which have been broadly exposed in the first chapter of this report.

Note on methodology

The methodology of analysis used to carry out this qualitative research has combined analysis techniques that have allowed to further knowledge of the challenges posed to PhD studies in sub-Saharan Africa. On one hand, interviews with those in charge of the PhD studies of the participating universities were carried out, in order to find out the points of view and opinions of these professionals concerning the general situation and the challenges specific to each university. These interviews were carried out based on a comprehensive questionnaire to representatives of the every university. (Annex 1).

On the other hand, a work session in the form of a group discussion (*focus-group*) was organised with the representatives of these universities with the aim of working, in a participative and collaborative process, in greater depth on the identified challenges of PhD programmes in different areas of specific analysis. The dynamic of the group discussion addressed itself to detecting challenges with the aim of be able to associate to them possible intervention tools that could provide possible solutions. (See methodology and contents Focus Group in Annex 2).

In both cases, the information provided by these qualitative techniques has been dealt with based on emptying and analysis of contents. This approach has allowed to thematically organise the results in both the interviews and the contributions made in the *focus group*, and to present the results of the analysis carried out, which are shown here below.

-
- Niger (Abdou Moumouni University, Niamey)
 - Mali (University of Bamako)
-

Report – Current Situation and Future Challenges of PhD Studies in Sub-Saharan Africa

2.1. Results of in-depth interviews

The results of the in-depth interviews were added by thematic area in order to identify the most critical challenges and aspects that face PhD studies in sub-Saharan Africa, as has been expressed by those in charge of PhD programmes whom have participated in this study. The issues have been ordered around the following thematic areas with the aim of more easily identifying the challenges posed at different levels of action:

- 1) General matters
- 2) Funding
- 3) Research
- 4) Management of PhD programmes
- 5) PhD students
- 6) Cooperation project

With regards to the first thematic area, several universities were asked general questions regarding the relevance of their PhD programmes throughout the Region, to the connection of these programmes with strategic challenges presented by their own countries, and to the strategic partnerships woven on a national and international level to develop these programmes.

In this area, the following opinions, expressed by PhD programme managers concerning the strategic relevance that these programmes have in the Region, stand out.

Table 4: Relevance of PhD programmes in the Region

-
- ✓ **To the extent that they make up their own programme and avoid depending on foreign training programmes.**

 - ✓ **Facilitate academic differentiation and specialisation between universities.**
-

- ✓ **Contribute to the production and use of new technologies.**
- ✓ **Guarantee greater international visibility of the universities.**
- ✓ **Help to reformulate the research agenda of the country.**
- ✓ **Contribute to the training of more competent and creative future boards and leaders.**
- ✓ **Guarantee a new generation of university faculty.**
- ✓ **Contribute to avoiding the brain drain in the Region.**
- ✓ **Allow the establishment of partnerships with foreign universities in the co-supervising of theses.**
- ✓ **Facilitate the weaving of international partnerships addressed at working on strategic challenges in the Region.**
- ✓ **Assist research and the publication of articles in international scientific journals.**

Source: own table

On the other hand, PhD programme managers identify particular challenges linked to the development of higher education studies that are summarised in the table below.

Table 5: Challenges of the PhD programmes in the Region

- ✓ **Limited offer of PhD programmes.**
- ✓ **Little experience in the management of innovative and competitive PhD programmes.**
- ✓ **Faculty staff with inadequate PhD degrees.**
- ✓ **Limited interdisciplinary in higher education training programmes.**
- ✓ **Dependency of these programmes on cooperation aid that does not always agree with the strategic objectives of the recipient countries.**
- ✓ **Inadequate university infrastructure.**

Report – Current Situation and Future Challenges of PhD Studies in Sub-Saharan Africa

- ✓ **Limited resources.**
- ✓ **Uncompetitive working and salary conditions of staff and researchers.**
- ✓ **Little international mobility among students and professors.**
- ✓ **Scant cooperation between country's universities' PhD programmes.**
- ✓ **Greater collaboration between universities and businesses (industry) linked to PhD programmes must be developed.**

Source: own table

With regards to the second thematic area, the funding of PhD programmes, those in charge of universities agree on identifying the different specific challenges closely linked to the different sources of resources with which higher education studies are funded.

Table 6: Challenges linked to funding

- ✓ **The funding of PhD programmes by the actual universities is limited.**
- ✓ **Private funding of these programmes is practically inexistent and it is difficult to know its reach.**
- ✓ **The provision of state scholarships for PhD students is scarce.**
- ✓ **Funding linked to cooperation programmes is very relevant and is very much orientated by the interests of the donor.**
- ✓ **The funding of PhD programmes in Humanities or Social Sciences is very low.**

Source: own table

In the area of the connection between PhDs and research programmes, the third thematic area of analysis, PhD programme managers identified, on the one hand, the essential aspects that show the link between higher education studies and competitive and quality research. On the other hand, specific challenges were identified that should

African-Spanish Higher Education Platform

be taken into consideration in policies and programmes addressed at promoting a higher level of research in the Region.

Table 7: Relevance of research in PhD programmes in the Region

- ✓ Provides resources to research teams.
- ✓ Allows to establish priority lines of research in universities and research centres.
- ✓ Facilitates the exchange of knowledge in international networks.
- ✓ Integrate prestigious researchers and professors into universities avoiding the brain drain in the Region.
- ✓ Promote the opening of new specialised research centres.

Source: own table

Table 8: Specific challenges of research within the framework of PhD programmes in the Region

- ✓ Excessive dependency of donor interests in the lines of research funded by cooperation programmes.
- ✓ The access path to scientific and research careers for PhD students must be consolidated.
- ✓ It is necessary to strengthen more competitive research teams in the Region.

Source: own table

In fourth place, opinions concerning the management of PhD programmes that the Region's higher education managers express, show shared opinions linked to aspects that are considered key in the management of higher education.

Table 9: Key aspects in the management of PhD programmes

- ✓ The profiles of the PhD programme managers are similar among universities in the Region (university professors and researchers).
- ✓ There is a significant effort by universities to promote competitive selection processes that guarantee access to the most qualified students.
- ✓ There is the progressive systematisation of databases and indicators used in PhD programmes to learn about the evolution of higher education students and faculty.
- ✓ Universities increasingly develop student monitoring and evaluation systems (tutorials and thesis supervision).
- ✓ Universities promote internal and external faculty evaluation processes.
- ✓ The scant university-business collaboration in the design of PhD programmes persists.
- ✓ Little connection is identified between PhD programmes and the scientific production of the university.

Source: own table

If we refer to, in fifth place, more critical aspects that the Region's PhD programme managers identify in the area of higher education students, the following matters expressed in the area of this study must be taken into account.

Table 10: Identified challenges in the area of PhD students in the Region

- ✓ In many cases, PhD programmes are recent and there is not enough information to learn and appraise the career paths of the Region's Doctors.
- ✓ There is little systematisation of the basic indicators that allow to learn about PhD students' profiles.
- ✓ In general, students undertake PhDs as a means of accessing a teaching and scientific career.

- ✓ In other cases, when faced with the difficult of accessing the quality job market in the Region, students consider that a doctorate is an opportunity to acquire greater education and specialisation.
- ✓ A PhD permits access to better and more diversified roles (private, public and third sector), as well as facilitating international mobility (Europe or the United States).
- ✓ Economic assistance for PhD students is considered insufficient.

Source: own table

Finally, in sixth place, the opinion of PhD managers of the Region's universities on international cooperation programmes provides relevant information on the area and the reach of these programmes in universities in the Region.

Table 11: Basic characteristics of the cooperation programmes with universities in the Region

- ✓ The main agents of the donor community that finance cooperation projects with PhD programmes in the Region are national cooperation agencies, international organisations, private foundations, higher education institutions and companies/businesses.
- ✓ There is a diversity of speakers in the universities that define and agree on cooperation programmes linked to PhD programmes: vice rectorates for research and higher education, doctoral schools and individual researchers.
- ✓ The main tools of cooperation with PhD programmes in the Region tend to be professorships, direct assistance orientated to research (*Research Grants*), grants programmes (*Fellowship Programmes*) and bilateral agreements).
- ✓ Lines of cooperation with PhD programmes in the Region focus on, above all, the following areas: orientated basic research, applied research, thematically orientated research, the equipment of infrastructure and basic teams, and technological and digital resources.
- ✓ The majority of universities develop the monitoring and evaluation mechanisms of the cooperation programmes to learn about the impact they have on PhD programmes. Basic indicators are introduced such as:

African-Spanish Higher Education Platform

funded theses, co-supervised theses; scientific co-productions; laboratories equipped within the framework of cooperation; exchange between teachers and researchers; publications resulting from cooperation programmes; amount of funding, among others.

Source: own table

Finally, the Region's universities' PhD programme managers facilitate possible lines of future work addressed at strengthening tools of cooperation, as is detailed below.

Table 12: Proposals to strengthen cooperation programmes in PhD studies in the Region

- ✓ Development of joint cooperation programmes based on applied research with a limited number of credits abroad.
 - ✓ Cooperation programmes that strengthen the use of basic research tools.
 - ✓ Cooperation programmes that facilitate better technological training of the faculty and of students.
 - ✓ Cooperation programmes that develop mobility scholarships for PhD students and teachers/researchers.
 - ✓ Cooperation programmes addressed at creating mixed international research units that receive PhD students.
 - ✓ Cooperation programmes that facilitate classroom based training, with tutorials and thesis supervision in weaker disciplines.
 - ✓ Cooperation programmes that promote the participation of the diaspora's researchers and academics in the Region's PhD programmes, by means of funding jobs in sub-Saharan African countries and online training.
-

Source: own table

2.2 Results of Group Discussion (*Focus-Group*)

Holding a work session with the format of a group discussion (*focus-group*) with the representatives of the Region's universities has provided substantial information that enriches the analysis of the challenges that the Region's PhD programmes face. The participatory process developed in this group has allowed to work more in-depth on the analysed areas, that emerged during the interviews, obtaining qualitative data that allowed to explore in more detail not only the challenges that the PhD face, but also indicates possible working instruments that in some cases could be susceptible to international cooperation programmes, orientated at tackling the challenges in a more strategic manner.

The results obtained from this qualitative technique have been grouped in the analysis that is presented in this chapter. It is based on the six thematic areas of the PhD programmes that emerged and were worked on by the participants of the *focus group*. As can be seen, these thematic areas differ very little from those that were set out in the interviews. This has facilitated its analysis and interpretation. The thematic areas, worked on and that organise the results of the *focus group*, are as follows:

- 1) Funding of PhD programmes
- 2) Administration and management
- 3) Scientific research and faculty
- 4) University cooperation projects
- 5) PhD students
- 6) International competitiveness.

With the aim of facilitating the reading of the *focus group's* results, it has been opted to present each thematic area separately and in a similar format, differentiating in each case the challenges identified and the instruments proposed by participants.

African-Spanish Higher Education Platform

With regards to the first working area, the funding of PhD programmes, the participants in the *focus group* identified five specific challenges that require greater development of instruments and strategies for action.

- a) Develop grants programmes
- b) Promote public-private partnerships
- c) Orientate the purpose of the European-African partnerships
- d) Mobilise personal and external funds
- e) Promote and appraise research

In each case, the participants associated to each challenge possible working instruments, of different types, that in their opinion can facilitate scenarios for improvement, as the following table shows.

Table 13: Funding PhD programmes: challenges and possible working instruments

Main challenges	Possible instruments
a) Develop grants programmes	<ul style="list-style-type: none"> ✓ Monitoring and dissemination mechanisms of the opportunities among university students. ✓ Awareness-raising strategies by the governments on the need of economically providing for this programme. ✓ Awareness-raising strategies by international institutions on the need to promote help in this direction.
b) Promote public-private partnerships	<ul style="list-style-type: none"> ✓ Collaboration agreements between universities and business, or industry to fund PhD programme and supervise theses.
c) Orientate the purpose of the European-African partnerships	<ul style="list-style-type: none"> ✓ Awareness-raising strategies to adapt thematic areas with national development priorities.
d) Mobilise personal and external funds	<ul style="list-style-type: none"> ✓ Research projects funded on a national and international level. ✓ Monitoring and dissemination mechanisms of the opportunities among university students.

e) Promote and appraise research	<ul style="list-style-type: none"> ✓ Internal and external greater visibility strategies for the results of competitive research. ✓ Provide structure to the research teams and to programmes. ✓ 'Incubator' spaces for new lines of research and teams.
---	---

In second place, the participants of the *focus group* focussed their work on the area of administration and management of PhD programmes. In this space for decision-making and implementation of actions, five specific challenges were identified:

- a) Promote centralised information management systems.
- b) Establish a communal and harmonised system of regulation between PhD programmes.
- c) Develop instruments to facilitate decision-making processes.
- d) Greater training of the PhD programme management teams.
- e) Decentralisation and differentiation of the management processes linked to PhD programmes.

In accordance to the methodology of the proposed work, the participants facilitated possible working instruments associated to each challenge, orientated at promoting improved scenarios in the area of administration and management of PhD programmes.

Table 14: The administration of PhD programmes: challenges and possible working instruments

Main challenges	Possible instruments
a) Promote centralised information management systems	<ul style="list-style-type: none"> ✓ Seminars or workshops with this purpose. ✓ Exchanges of knowledge between universities. ✓ Training programmes in the and administration and management of PhD programmes.
b) Establish a communal and harmonised	<ul style="list-style-type: none"> ✓ Practices of the exchange of information between universities. ✓ Consultancy contracts to develop these processes.

African-Spanish Higher Education Platform

system of regulation between PhD programmes	✓ Seminars or workshops with this purpose.
c) Develop instruments to facilitate decision-making processes.	✓ Training linked to the formulation of research and governance policies.
d) Greater training of the PhD programme management teams	✓ On-line and classroom based courses addressed at training decision-makers and managers. ✓ Specific training in ICT content.
e) Decentralisation and differentiation of the management processes linked to PhD programmes.	✓ Internal processes in universities that facilitate decentralisation and differentiation between scientific and academic management, administration and finances.

Source: own table

In third place, the focus group focussed its work in the area of scientific research and faculty. In this area, the participants of the working group identified five specific challenges that the Region's PhD programmes faced.

- a) Improve the faculty's training
- b) Strengthening the teaching staff
- c) Improve working conditions
- d) Promote research linked to local needs
- e) Encourage international cooperation between PhD programmes.

In this area, possible instruments were suggested to advance towards structures of professional and technical staff in universities that would make them more competitive on an international level.

Table 15: Scientific research and faculty: challenges and possible working instruments

Main challenges	Possible instruments
a) Improve the faculty's training	<ul style="list-style-type: none"> ✓ Training the faculty in research by means of international cooperation programmes. ✓ Specific training on research methodologies and the management of projects to facilitate new lines of research and PhD programmes. ✓ Specific training on the design of research policies and their implementation. ✓ Programmes to support research and information infrastructure. ✓ Distance training and online libraries training programmes.
b) Strengthening the teaching staff	<ul style="list-style-type: none"> ✓ Selection process to incorporate young doctors in academic structures and guarantee a new generation.
c) Improve working conditions	<ul style="list-style-type: none"> ✓ Activities aimed at increasing salaries so that they are competitive and promote the incorporation of young professors in universities.
d) Promote research linked to local needs	<ul style="list-style-type: none"> ✓ PhD programmes that respond to local needs and develop applied technology.
e) Encourage international cooperation programmes between PhD programmes	<ul style="list-style-type: none"> ✓ Publication of scientific journals resulting from cooperation between universities in prestigious, international journals. ✓ Publications jointly prepared with other universities. ✓ Co-supervision of theses between university institutions. ✓ Research groups and TIC PhD programmes. ✓ Mobility and exchanges of professors.

Source: Own table

In fourth place, the participants of the focus group also worked on the challenges and activities to promote in the area of university cooperation projects. In this area, five main challenges were identified:

- a) Encourage the capacity and skills of PhD programme managers
- b) Identify good partners to participate in calls for research
- c) Increase international cooperation between universities

- d) Promote research funded internationally
- e) Avoid the brain drain

In each case, possible instruments orientated at strengthening cooperation strategies between universities in the Region and universities in other continents were suggested. This is considered strategic in order to improve the international competitiveness of PhD programmes in the Region.

Table 16: University cooperation projects: challenges and possible working instruments

Main challenges	Possible instruments
a) Encourage the capacity and skills of PhD programme managers	<ul style="list-style-type: none"> ✓ Specific training for academic and administrative staff orientated at improving knowledge and skills in the defining projects, management and publicity.
b) Identify good partners to participate in calls for research	<ul style="list-style-type: none"> ✓ Exchange of experiences between universities on a regional, national and international scale. ✓ Joint research proposals between universities.
c) Increase international cooperation between universities	<ul style="list-style-type: none"> ✓ Joint certification of masters and inter-university PhD programmes. ✓ Mobility of professors and research between universities.
d) Promote research funded internationally with impact in the Region	<ul style="list-style-type: none"> ✓ Research projects that involve regional impact. ✓ Production of strategic documents that contain priority research sectors.
e) Avoid the brain drain	<ul style="list-style-type: none"> ✓ Mechanisms linked to universities to attract the diaspora's talent. ✓ Diagnosis and statistics of the talent's location.

Source: own table

African-Spanish Higher Education Platform

The focus group focused on, in fifth place, analysing the situation of PhD students and the challenges posed in the area of work. In this field, five specific challenges were identified.

- a) Increase the mobility of PhD students
- b) Reduce the time dedicated to PhD studies
- c) Promote the valorisation of research results of PhD students
- d) Encourage greater motivation among PhD students
- e) Increase the quality of PhD programmes

At the same time, different instruments could be developed with the purpose of improving working conditions and the level of PhD students who are studying in the Region's universities.

Table 17: PhD students: challenges and possible strategies

Main challenges	Possible strategies
a) Increase mobility of PhD students	<ul style="list-style-type: none"> ✓ Co-manage or co-tutor theses between different areas or research centres ✓ Research visits to different areas and research centres ✓ Participation in national and international conferences and seminars
b) Reduce the time devoted to PhD study	<ul style="list-style-type: none"> ✓ Grants permitting fixed duration travel ✓ Online access to libraries to better combine work and study ✓ Online access to scientific databases and documentation
c) Raise profile of PhD student research results	<ul style="list-style-type: none"> ✓ Support for PhD students with articles that have been published or accepted for publication ✓ Support to defray the costs of producing the thesis ✓ Research portal that provides scientific information to support completion of the thesis or other research
d) Increase PhD student motivation	<ul style="list-style-type: none"> ✓ International mobility ✓ Adequate spaces for working ✓ System of grants ✓ Adapt PhD projects to match local needs

African-Spanish Higher Education Platform

	✓ Link PhD projects with research groups
e) Increase the quality of PhD programmes	<ul style="list-style-type: none"> ✓ Mobility of teaching staff according to interest area and specialization ✓ Develop use of videoconferencing in PhD programmes ✓ Online access to courses at other universities ✓ Multimedia systems allowing access to scientific articles and conferences

Source: own table

Finally, the focus group turned its attention to identifying challenges linked to the global competitiveness of the PhD programmes in the Region. Seven specific challenges were highlighted.

- a) To improve access to and develop ICT
- b) To promote success in obtaining patents to protect intellectual property
- c) To guarantee wider diffusion of research through publication
- d) To integrate and harmonize PhD programmes with the Bologna process
- e) To promote further internationalisation of PhD programmes
- f) To facilitate improved access to scientific data
- g) To guarantee the calibre of researchers and academics

In each case, the participants developed a set of proposals that suggested possible measures for fostering excellence and international competitiveness in universities in the Region.

Table 18: International competitiveness of PhD programmes: challenges and possible strategies

Main challenges	Possible strategies
a) Improve access to and develop ICT	<ul style="list-style-type: none"> ✓ Cooperation programmes to improve access to and develop ICT ✓ IT teams in university institutions ✓ Shared platform that permits access to online courses, conferences, theses and research results
b) Promote success	✓ Programmes to aid and assist researchers in the

Report – Current Situation and Future Challenges of PhD Studies in Sub-Saharan Africa

in obtaining patents to protect intellectual copyright	process of obtaining patents
c) Guarantee wider dissemination of research through publication	<ul style="list-style-type: none"> ✓ Presence in scientific journals ✓ Specific training aimed at increasing knowledge of how to get published in scientific journals ✓ Increased local and international visibility of research results
d) Integrate and harmonise PhD programmes with the Bologna process	<ul style="list-style-type: none"> ✓ Resources and training to integrate PhD programmes and awards into Bologna process) ✓ Identify themes connected to local needs that may suit international Masters and PhD programmes for implementation in African countries and on a Regional level
e) Promote further internationalisation of PhD programmes	<ul style="list-style-type: none"> ✓ Increased cooperation between institutions on a national and Regional level
f) Facilitate improved access to scientific data	<ul style="list-style-type: none"> ✓ Systems allowing access to comparative information regarding the university sector (standards, current trends and programmes) ✓ Real-time information about calls for papers and application processes ✓ Online libraries
g) Guarantee the calibre of researchers and academics	<ul style="list-style-type: none"> ✓ Improved training for teachers and researchers involved in PhD programmes

Source: own table

Chapter 3. Cooperation programmes aimed at promoting PhD studies in African universities

This chapter focuses on the main actors and bodies that operate within the international cooperation donor community to promote and establish PhD programmes and research in African universities.

African-Spanish Higher Education Platform

An initial introductory section presents an overview of how the international development and cooperation approach to universities has evolved in recent years, with an emphasis on the current role that promoting higher education has acquired in the plans and strategies of the main international bodies and cooperation agencies, and a special focus on the promotion of PhD programmes.

The second section sets out to describe the various bodies that constitute the donor community that promotes cooperation and development in order to reinforce higher education, and the principal measures they use to encourage research and the training of researchers. This section highlights certain recent initiatives that are of interest due to their focus on facilitating collaboration and reflection between various donors and higher education institutions that focus on the African Region.

A third section examines the different approaches and perspectives that the various donors adopt in planning their activities and programmes for the promotion of higher education in the sub-Saharan African Region. It becomes apparent that through studying their approaches, their programmes and their working practices, we can differentiate between those actors, on the one hand, who take a more strategic and long-term approach towards cooperating with African universities; and those, on the other, who may recognise the importance of promoting research and PhD study in African universities for the development of these countries, but who continue to approach these programmes from a *Development Assistance* perspective, adopting a less well-planned approach towards cooperation and promoting actions that are more short-term in character.

The fourth section presents a summary of some of the results and effects that are being achieved through international cooperation in terms of promoting university research and PhD study. Bearing in mind the difficulties in measuring the results of these programmes, we will analyse some of the observations that have been highlighted by international bodies that are expert in the field.

The final section in this chapter focuses specifically on Spanish cooperation and Spanish cooperation policies that are aimed at promoting research and higher education in sub-Saharan Africa. This section deals with current collaborations between African and Spanish universities, and the main measures that international cooperation deploys to strengthen higher education systems.

Note on methodology

To deal with the question of programmes aimed at promoting PhD study in African universities, research has been carried out, drawing on data that the various donors supply through their web pages and through the documents for analysis mentioned in the bibliography. In section 4) a brief questionnaire was sent to different Spanish universities with the aim of learning about their experiences and being able to comment on the results that their initiatives have achieved.

3.1. Changes in recent years in international cooperation for the promotion of higher education

International cooperation aimed at promoting higher education, analysed from the perspective of the main international cooperation agencies, has altered in form and focus throughout recent years. In spite of the fact that during recent decades many programmes promoting research and higher education in Africa have been backed by Official Development Assistance (ODA), the working relationships between the agencies and the programmes that they use have continued to evolve on the part of the donor community.

From the point of view of the format of cooperation relationships, there has been a notable shift whereby responsibility is progressively transferred to African members.¹⁵ The dialogue and sharing of work between the various bodies who form the

¹⁵“*Financing Higher Education in Africa*”, World Bank, 2010.

relationship have gradually balanced out, and it is currently the agencies from the South as much as those from the North that assume responsibilities in the different initiatives. In turn, there has also been an attempt to increase the amount of decision-making among the African agencies (whether they are universities, governmental departments or other bodies) so that they might take a more active role and define their priorities and policies in the field of higher education, in line with the new international cooperation parameters set out in the Declaration of Paris 2005.

In the same way, recent years have seen a notable increase in funds being directed towards programmes for the development of research and higher education in sub-Saharan Africa, although there are two important points to note here: firstly, the quantities vary considerably depending on the donor country, and, secondly, the funds aimed at higher education on the African continent remain inferior to the resources destined for basic education. We will turn our attention later to the programmes and different measures employed by the community of international donors.

In spite of this development in the form of cooperation between the groups concerned, and the attempt to increase the involvement of the African agents in the various programmes, there is still a notable and crucial aspect that has not changed and that counteracts the aforementioned points: the various donors continue to set their own conditions, establishing the nature and content of their relationships and collaborations with agents in the South.

From the point of view of the sector, it is possible to highlight a succession of alterations in the working environment of cooperation and development policy and university research in African centres.¹⁶ If in the 1970s and 1980s, efforts were focused significantly on agriculture and health, areas that were seen as fundamental for the development of a country, in the 1990s the donor community widened its priorities to include the study of new diseases (such as HIV/AIDS) and economic policies. In recent years, there has been talk of a third phase of sectors where resources are being

¹⁶Source: World Bank, 2000 "*Higher Education in Developing Countries. Peril and promise*"

invested: sectors that were not previously taken into consideration, such as social sciences, new technologies and other emerging disciplines such as biotechnology.

This change and widening of the working focus, to take in programmes promoting higher education, has been accompanied by more integrated approaches among international development and cooperation programmes focused on countries in the South, with efforts being channelled into those sectors that incentivize sustainable economic and social development for the recipient country, and into areas of mutual interest.

a) Raising the profile of higher education in cooperation and development strategies

In this context, the higher education sector has gradually become more relevant on the agendas of the donor community. The idea of investing in and training the new generations that will help developing countries to improve their situation is inextricably linked to supporting the improvement of national university education systems.

To give a brief historical overview, it is recognised that in the early years of the international cooperation and development system (the 1960s) resources were invested in research and higher education, since it was understood that universities played an essential role both in the development of a country (especially in the context of decolonisation and the formation of new states), and in the training of professionals to design and implement the necessary policies. The 1980s saw a shift in the development and cooperation vision, and, seeking to improve the efficiency of cooperation programmes and increase returns from investments, resources were focused instead on basic education. This tendency did not change again until the mid-1990s, when more relevance was given to higher education programmes and the sector was identified as strategically important for the development of the Region.

The stances adopted by the World Bank (WB) played a decisive role in this change of attitude towards the role of higher education. Although the WB did not previously adopt a coherent vision towards educational cooperation policy, in the late 1990s it

African-Spanish Higher Education Platform

established a more integrated approach that promoted education at all levels, highlighting research and higher education as working areas that were essential in cooperation strategies and programmes. The outlook adopted by the WB has had an impact on the approaches of the donor countries and organisations, while international cooperation initiatives that focus on universities and reinforcing higher education systems have risen higher on the agendas of the main donor agencies. It is also notable that the approaches, introduced by the WB and adopted by the international community, insist on the proper functioning of higher education systems as a fundamental condition for the economic and social development of a country.

In one of the conferences organised by NUFFIC in 2005,¹⁷ the various mechanisms that support research and higher education in developing countries were analysed from the perspective of the donor community, and attention was drawn to some of the motives that have persuaded the various bodies promoting cooperation plans and programmes (governmental organisations, international bodies, private foundations, etc.) to recognise the essential importance of higher education in the reduction of poverty and the sustainable development of a territory:

- i.* higher education plays an important role in improving and strengthening government. The system of higher education in a country is responsible for training and enabling people who may help to advance the economic growth of that country and maintain a critical mass of people within an open and democratic society.
- ii.* it is a crucial means of generating knowledge. The promotion and strengthening of the university system and, specifically, the training of PhD students, is a key element in the generation of knowledge.
- iii.* all of the programmes aimed at reducing poverty and promoting development require trained personnel that are capable of implementing public policies. Investing in higher education will help to ensure the presence of people who are equipped to implement the necessary public policies.

¹⁷ NUFFIC Conference (2005); *A Changing Landscape*. Para más información ver:
<http://www.nuffic.nl/home/news-events/past-events/landscape/Downloads>

- iv. research and higher education enable developing countries to access an enormous pool of shared knowledge that exists at a global level and that encourages the establishment of new working relationships between universities in different countries.

A document published by the *Centre for Higher Education Transformation*¹⁸ in 2007 described three possible approaches towards promoting higher education that may appear in the development policies of a country. The first considers higher education to be a luxury compared with the necessity of improving basic education in developing countries. The second places importance on promoting higher education, since as well as producing applied knowledge and well-trained professionals, it implies strategic value for a country. And the third highlights the development of higher education as one of the building blocks of development in the current era of the knowledge economy. This last approach is that which has gradually been adopted by the majority of donors, even though its importance is still not reflected at a budget level. Despite consensus about the importance of higher education for the development of a country, we will presently see that there remains a persistent lack of coordination among donor organisations and a lack of long-term vision among some of the partner agencies.

b) Essential importance of training PhD students in Africa

Following the current thinking that drives the agendas of the donor community and that establishes the promotion of higher education as an important factor in the development of countries in the South, this chapter now focuses on the training of PhD students in African universities and on the essential importance of this activity for achieving the objectives outlined on the international cooperation agenda.

¹⁸CHET (Centre for Higher Education Transformation). Peter Maassen, Romulo Pinheiro & Nico Cloete (2007); *Bilateral Country Investments and Foundations Partnership Projects to Support Higher Education Across Africa*.

As the *European University Association (EUA)*¹⁹ notes, collaboration between universities should be a shared priority, as much for the African Region as for Europe, in terms of creating capacity for social and economic development. Universities should not only produce researchers for their own projects and objectives, since this creation of knowledge has repercussions for the economies and societies of each country, and in Africa there is a requirement for the production of professionals who will be able to contribute to the development of the country.

The training of PhD students in African universities should be conceived of as a medium to long-term investment in the development of these countries, and the absence of assistance for this type of education represents a backwards step from the point of view of the growth of countries in the sub-Saharan region. From a development and cooperation perspective, the lack of investment in training PhD students also impedes fulfilment of the MDGs, many of which require personnel who are properly equipped to carry out the policies necessary for achieving those goals.

3.2. Outline of the main organisations and bodies supporting the training of PhD students in sub-Saharan Africa

a) Analysis of the main donors

According to studies by the WB,²⁰ during the years 2002-2006 the donor community invested an average of \$3.3 billion (USD) worldwide each year. Out of this sum, 18% (some \$600 million) was sent to the countries in sub-Saharan Africa. The majority of bilateral and multilateral donors contributed, to a greater or lesser degree, to financing higher education in Africa. The statistics during these years show that the biggest donor in this area was France, providing more than \$300 million annually, followed by Germany (\$95 million), Portugal, the International Development Association (the WB), Belgium, the Netherlands, the United Kingdom, Norway and the European Commission.

¹⁹ *Africa-Europe Higher Education Cooperation for Development, Meeting Regional and Global Challenges. White Paper*, European Universities Association 2010.

²⁰ World Bank (2010). "Financing HE in Africa 201".

The various parties that are found within the donor community may be classified into five groups:

- a) National development and cooperation agencies, such as SIDA (Sweden), NORAD (Norway) or DFID (United Kingdom). These are the bodies that have traditionally carried out the international cooperation policies of the donor countries. It is fitting to mention the development and cooperation agencies of emerging countries, such as India or China, given that these are important players for African universities today.²¹
- b) Specialised national public bodies that direct and implement university cooperation and development programmes, such as NUFFIC (the Netherlands), DAAD (Germany) or CUD (Belgium). This group contains public bodies that are responsible for development and cooperation programmes aimed at universities, in the overall context of international cooperation policy.
- c) International/multilateral organisations such as the World Bank, the European Union via the European Commission, or the African Union.
- d) Domestic institutions of higher education that may act individually or as members of university networks (e.g. EUA or IAU), and that also direct part of their human and economic resources into carrying out bilateral cooperation programmes with African universities.
- e) Alongside national and multilateral donors, private foundations have played a growing role in financing higher education in Africa. Since the year 2000 there has been a significant increase in their investment and involvement in African universities.

²¹One example of this relevance can be found in the meeting financed by the Chinese Ministry of Education that took place in the UNESCO headquarters in October 2011. The objective of the meeting between African and Chinese universities was to develop a plan of action that would strengthen cooperation between UNESCO, China and Africa.

One of the private initiatives that has acquired notable relevance in recent years has been *The Partnership for Higher Education in Africa (PHEA)*, a project that ended in 2010 and that for 10 years facilitated the coordination of work between seven North American foundations²² in the field of higher education in Africa. This initiative has financed projects in 49 universities in nine African countries (Egypt, Ghana, Kenya, Madagascar, Mozambique, Nigeria, South Africa, Tanzania and Uganda).²³

b) Classification of the means of providing assistance

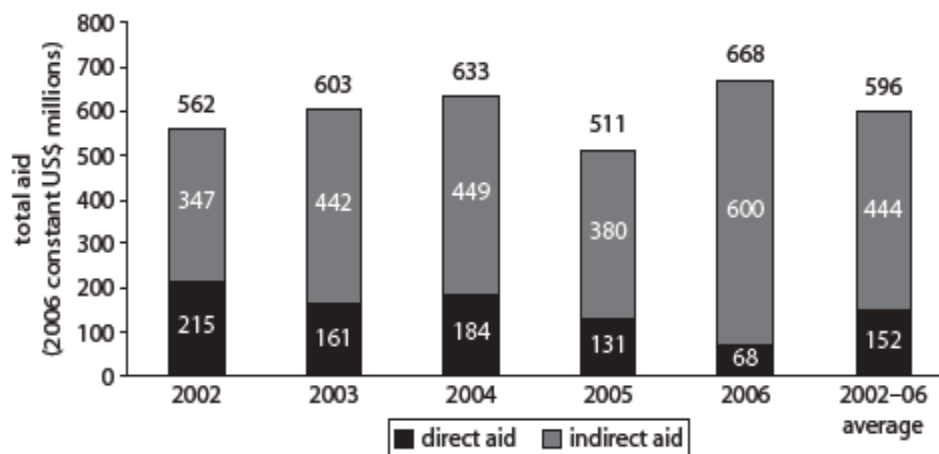
Before turning to the various means that the donor community employs in carrying out its activities in support of training PhD students, it is interesting to highlight the distinction between the *direct and indirect aid* that flows towards the sector. The World Bank points out that less than a third of the total aid that is intended for higher education in sub-Saharan Africa directly benefits the universities and research centres in the Region. Although part of the aid is administered through national budgets, and it is difficult to calculate what proportion these channel into their higher education systems, there is no doubt that the majority of the funds for higher education are used to provide training/research grants, or to compensate universities in the donor countries for the costs involved in admitting students from African universities. Among the direct aid that goes to African universities are funds that may be used for purchasing equipment, improving infrastructure or acquiring technical assistance in developing new programmes and curriculums of study. It has also been shown that some donors place a special emphasis on language programmes in order to foster the use of their language in African universities, especially in countries that were previously colonies.

²² Carnegie Corporation of New York; Ford Foundation; John D. and Catherine T. MacArthur Foundation; Rockefeller Foundation; William and Flora Hewlett Foundation; Andrew W. Mellon Foundation; and Kresge Foundation.

²³ For more information about this initiative and its results, see “*Accomplishments of the Partnership for Higher Education in Africa, 2000–2010. Report on a decade of collaborative foundation investment*”. Suzanne Grant Lewis, Jonathan Friedman and John Schoneboom, 2010

The following graph, taken from the study by the World Bank, *Financing Higher Education in Africa*, demonstrates this tendency and classifies the official aid destined for higher education in sub-Saharan Africa according to whether it goes directly to the universities (direct aid) or through other channels (indirect aid).

Figure 4. Total aid destined for higher education in Africa, 2002-2006



Source: OECD (2009)

One of the implications of the tendency towards providing indirect aid is that a notable proportion of the external aid intended for higher education in Africa ends up returning, paradoxically, to the universities in the donor countries who admit African students.

With the distinction between direct and indirect aid now made clear, we will analyse the main identifiable measures that are employed in the promotion of PhD studies. In order to do so, we will make distinguish the measures as follows:

- I. Research and training grants for individuals or teams; an example of a provider is the *Netherlands Fellowship Programme (NFP)*;
- II. Measures taken to improve university infrastructure (e.g. research centres, libraries, and equipment);
- III. Agreements with universities to strengthen the institution itself;

- IV. Collaborative research programmes between universities in the North and South, such as the *Projets Interuniversitaires Ciblés (PIC)*, run by the Commission Universitaire pour le Développement (CUD), or the *Norwegian Programme for Development, Research and Education (NUFU)*.

Programmes that provide training and research grants are one of the measures that the international community uses most frequently, and although it is difficult to determine the quantities of support that this type of aid implies for African students, it is estimated that it exceeds by a wide margin the direct aid that reaches the African universities.

With respect to the initiatives carried out by private foundations, there is a notable emphasis on the improvement of university infrastructure, with special attention paid to providing access to new technologies, organizing and training staff, and internal university structures. At the same time, there is also a long tradition of providing training and research grants. By way of example, it is fitting to highlight one of the long-running initiatives, the *International Fellowship Programme* of the Ford Foundation, that has offered funding since 2001 to help university graduates undertake PhD studies or research in universities worldwide.

c) Outstanding initiatives

This section highlights some of the initiatives that stand out due to their attempts to analyse the higher education system in African universities and promote improvements within it, while they simultaneously establish working networks between African and European university students.

✓ **ACU (Association of Commonwealth Universities)**

DOCLINKS, Increasing Understanding and Establishing Better Links between African and European Doctoral Education Candidates

African-Spanish Higher Education Platform

DOCLINKS is a two-year project whose goal is to promote a network of contacts between African and European PhD students and researchers. The project aims to reinforce mutual understanding through the creation of a unique network and virtual web that will establish contact between African and European researchers and PhD students. The *Association of Commonwealth Universities* is undertaking the DOCLINKS project with the financial support of the European Commission. The consortium participating in the project is composed of:

- The Association of Commonwealth Universities, United Kingdom (Coordinator)
- Eurodoc, The European Council of Doctoral Candidates and Junior Researchers, Belgium
- French Speaking University Agency, Belgium
- Irish African Partnership for Research Capacity Building, Ireland
- Finnish University Partnership for International Development, UniPID/University of Jyväskylä, Finland
- University of Botswana, Botswana
- African Academy of Sciences, Kenya

The specific objectives of the project are: i) to raise awareness of the importance of training PhD students in Europe and Africa through the implementation of residencies and centres intended to meet the needs of aspiring PhD students and junior researchers; ii) to create a unique communications link that provides information about opportunities for postdoctoral grants and research funding offered by European centres of higher education, that may be of interest to African PhD students; iii) to establish contacts and exchange links between groups of PhD students and junior researchers in Europe and Africa via a virtual communication platform.

✓ **EUA (European University Association)**

CODOC Project

The CODOC project was also carried out during the years 2010-2012, with the objective of studying patterns in the training of PhD students in different regions of the

world, while simultaneously creating opportunities to strengthen collaboration between European universities and their partners in sub-Saharan Africa, Asia and Latin America.

The project also seeks to increase the international visibility of the European system of training PhD students and promote the idea that collaboration in doctoral training between European universities and other regions provides mutual benefits. The universities in developing countries may use these collaborations to develop their capabilities and to access know-how, while the European universities benefit from having partners in geographic regions that are of interest from a research perspective, exchanges for students and teaching staff, and opportunities to establish joint programmes.

CODOC was launched by the EUA and the following are participants: the University of Bonn, the Observatory on EU-Latin America Relations (OBREAL), the Karolinska Institutet (KI), the Southern African Regional Universities Association (SARUA), the Inter-American Organization for Higher Education (OUI-IOHE) and the ASEAN University Network (AUN).

✓ **IAU (International Association of Universities)**

Changing the nature of PhD programmes in sub-Saharan Africa

In the context of internationalization and globalization and in light of the constant evolution of the higher education sector, the aims of this study, carried out from 2009-2011, were as follows: to identify the changes affecting PhD programmes in sub-Saharan Africa; to analyse the impact these changes have had on research programmes in six higher education institutions in sub-Saharan Africa; to analyse how the institutions have developed their working practices and how this has facilitated improvements in the running of PhD programmes; and to identify the challenges and difficulties that the institutions have faced, along with the solutions that they have implemented. This initiative received financial support from SIDA.

The 6 institutions that were selected to take part in the study were:

African-Spanish Higher Education Platform

- University of Douala, Cameroon
- University Ilorin, Nigeria
- Kenyatta University, Kenya
- University of Sciences and Technologies of Benin, Benin
- Gaston Berger University of Saint Louis, Senegal
- National University of Rwanda, Rwanda

Another of the aims of the study was to stimulate debate on the PhD programme models that have proved most effective for developing countries, or that have yet to be used, and to offer a new and dynamic network that will bring opportunities to small centres of higher education, enabling them to compare perspectives and work together to develop solutions to the challenges that they face individually.

✓ **Stellenbosch University**

African Doctoral Academy (ADA)

Stellenbosch University has created this programme under the leadership of Johann Mouton. The overall plan followed by ADA is contained within these 4 objectives:²⁴

- 1- To provide PhD students and possible applicants to PhD programmes in all fields of study with a high level of training in research skills;
- 2- To provide the necessary tools, both at an intellectual and an academic level, for would-be and current PhD students, by organizing, for example, seminars and exchanges with current PhD students who specialize in fields that may be of interest to aspiring PhD students;
- 3- To better equip the teaching staff to manage and supervise students, offering a variety of seminars on specific themes;
- 4- To host a global research programme about PhD studies in Africa. This programme will invite higher education students from all over the continent to

²⁴Different projects have been undertaken with these objectives in mind and may be consulted on the following webpage: <http://sun025.sun.ac.za/portal/page/Arts/ADA/about>.

participate, and will include training in all fields of knowledge and in how to obtain funding.

3.3. Approaches and perspectives of the actions aimed at the training of researchers and PhD students

This section intends to tackle the approaches and the different points of with which the community of donors works on for the promotion of higher education and the training of PhD students in sub-Saharan African countries. This will be carried out through the analysis of the different donors' planning documents, their actions in the field of the promotion of higher education and comparative studies that have been carried out in recent years.²⁵ An exhaustive study of all the donors will not be carried out, however, notes and guidance will be given that could be of interest for the reflection and comparison of different observed perspectives.

One of the main aspects to highlight is the position of some of the most important donors of the promotion of higher education and research from a social and economic point of view, which has been upheld in recent years. Cooperation from Scandinavian donors and private American foundations have offered assistance to African universities and research institutions since the 1950s in order to increase their institutional capacities in key sectors in the development of these countries, such as agriculture, economics, education or social science.

On the other hand, we will also observe how the promotion of higher education in developing countries is set out in accordance with the domestic *interests* of the donor countries. Some parties believe that investment in higher education in countries of the South is not only important for these countries, but also for their own universities and in relation to their international relations policies. The promotion of higher education is distinguished as an opportunity to participate in development projects for the donor countries' universities, such as maintaining and expanding their experiences, involving

²⁵ For example *Bilateral Country Investments and Foundations Partnership Projects to Support Higher Education Across Africa*; Peter Maassen, Romulo Pinheiro & Nico Cloete, CHET (Institutions for Higher Education Transformation), February 2007.

African-Spanish Higher Education Platform

them in the commitments made by their governments, and helping them in their efforts towards internationalising academic programmes. In this way, research grants are a tool with which to provide institutions of the North with the opportunity to internationalise their curriculums. By giving the opportunity to foreign students of coming to study in their institutions, they are *obliged* to offer courses and training that comply with international quality standards. In this way, the Norwegian, Belgian and German grant programmes are clear examples of these most cross-cutting approaches: the programmes are not only used for purposes strictly linked to development cooperation, but are also used to meet academic and institutional objectives, beneficial to the donor country.

In some of the donor countries there is still a lack of connection between the objective to reduce poverty and MDG compliance to promote and support higher education. In general, achieving the MDG is usually a global reference framework for all national cooperation agencies. It is possible that the difficulty lies in combining a general objective such as this, with other, more specific objectives, such as the promotion of the PhD programmes in African universities. In programmes designed to strengthen universities in developing countries, there may be a lack of vision over its relationship with the objective of reducing poverty, unless it regards projects orientated at subjects and disciplines that have a direct relationship with the reduction of poverty in the specific country.

In the last few years, a generalised element has appeared in which the approach of the international community, like the fact that universities are recognised as a party that plays an indispensable role in ensuring quality in education systems, and at the same time, makes policies of development cooperation more effective:

In Norway, the Norwegian Ministry decided that development cooperation is one of the activities higher education institutions should deal with. This implies that they have to devote time and resources to this. Norway is one of the most active countries in the promotion of higher education in developing countries. It has different specialised

structures to apply its university development cooperation policy, and is a good example of the cross-cutting that the promotion of higher education in developing countries can achieve. NORAD (*Norwegian Agency for Development Cooperation*) is the agency that, under the Ministry of Foreign Affairs, is responsible for international cooperation and the fight against poverty. The NUFU programme is financed through this agency and promotes collaboration between academic institutions in the South and Norway. The NUFU programme is managed by SIU (*Norwegian Centre for International Cooperation in Higher Education*), a Norwegian agency run by the Ministry of Education and Research that promotes international cooperation in educational material.

Along the same lines, British and American cooperation works with its universities, academic and innovation institutions to implement projects aimed at higher education. The objective is to promote partnership programmes with its own universities and those of the countries with which it wants to cooperate. In the case of USAID, there is a connecting organisation²⁶ between the agency and the university associations of the country to jointly build university development cooperation programmes.

Another important aspect that can be analysed in research development and PhD training programmes is the specialisation that some countries apply to their cooperation programmes. For example, Scandinavian countries are strongly committed to new information technologies and communication, and they transfer this know-how to their international cooperation policy and, especially, to cooperation programmes aimed at PhD student training and research, as one of the essential elements for the modernisation of universities all over the world. Another interesting example is Japanese cooperation through the JICA (Japanese International Cooperation Agency), which focuses its efforts of higher education cooperation with countries in the South on the engineering sector, in which Japan is a model to the world.

It is interesting to observe how the majority of donors, with more strategic approaches regarding actions in the field of development cooperation in the higher education

²⁶ ²⁶ ALO (*Association Liaison Office for University Cooperation in Development*).

African-Spanish Higher Education Platform

sector, have specific structures for its promotion and cooperation with universities. We have seen the example of Norway, but it can also be found in Germany with the DAAD (*Germany's Academic Exchange Service*), the body responsible for managing and administering a variety of actions in matters of international cooperation in higher education. Another example can be found in NUFFIC (*Netherlands Organisation for International Cooperation in Higher Education*), the body responsible for implementing the Dutch government's cooperation policy regarding higher education. We can also mention the case of Canada, where CIDA (*Canadian International Development Agency*) is the development cooperation governmental agency, and performs the cooperation policy. There is also the IDRC (*International Development Research Institution*), created by Parliament in the 1970s, as a public body with the specific aim of promoting cooperation programmes with developing countries in the field of science and technology.

It is necessary, however, to specify that the simple fact of having or not having a specific body is not a guarantee of a comprehensive approach towards cooperation programmes aimed at PhD student training. It is worth highlighting the Swedish case as an example of this: along with Norway, Sweden is one of the most active donors in the areas of higher education and carries out its activities through SIDA (*Swedish Agency for International Development Cooperation*), the development cooperation agency of the Ministry of Foreign Affairs responsible for implementing cooperation programmes. In this case, the the way to deal with international cooperation policy is more important than the creation of a specialised body that performs international cooperation programmes to reinforce higher education.

Another important element to take into consideration is the geographical orientations of the programmes. Some donors have very particular and defined geographical priorities, while others work cooperation programmes regarding higher education from a regional perspective. In this sense, we can see how France, Portugal or Belgium focus their activities in countries that were colonial territories and in countries whose common linguistic component helps them to work. On the other hand, we have the example of the European Commission that aims to work on higher education from a more regional

angle, promoting common work and relationships between universities of different African countries.

Last but not least, it is interesting to highlight the role that some emerging countries are playing in the sub-Saharan region of Africa in matters of PhD student training and in general, development cooperation. Specifically, China²⁷ and India show new approaches. These countries set out development cooperation in the most strategic way for the country's interests, and perhaps in these cases, a geopolitical component applied to development cooperation can be more clearly seen. Although this geopolitical perspective is not detected so clearly in the donors from the North, it may be that the vision of cooperation focussed solely on complying with MDG and the traditional concept of donor-receiver is not valid for these new parties who are more and more important in the relationship with African countries and their universities.

3.4. Results and impacts of the programmes

The different parties who carry out PhD student training programmes, aimed at higher education support generally, achieve results monitoring on a quantitative level (number of beneficiaries, earmarked quantities, number of financed projects), but it turns out to be more complex to find studies on the impact of these programmes in African realities. Upon analysing different programmes in the donor community, it is not clear to find assessments on what results being produced by the resources destined to the promotion of higher education in the Africa Region.

In 2005, Willem-Jan de Gast²⁸ noted one of the most important observations made through evaluations of PhD student study training programmes and higher education in general; the difficulty of measuring the effects and impacts of the interventions in this

²⁷ By way of an example, last October 2011 a meeting between Chinese and African university representatives was held at the UNESCO headquarters, under the title of *"2011 UNESCO-China-Africa University Leaders meeting: Prospects for Future Collaboration"* with the aim of encouraging partnership between these institutions and establish an action plan for collaboration between UNESCO, China and African countries.

²⁸ *The visions, policies and programmes of a sample of Northern donors regarding their support for higher education development in the South.* NUFFIC Conference – Willem-Jan de Gast

Region. Some studies noted that there is lack of measurement and research into the socioeconomic impacts of cooperation programmes aimed at supporting PhD programmes and universities in general. These studies should be a key element in the development and implementation of new higher education policies and strategic plans.

In his contribution, Damtew Taferra²⁹ notes that the contribution of international cooperation towards the building of abilities in the higher education of African countries is significant. Despite declarations of intentions (for example, the Paris Declaration), chronic problems such as the lack of appropriation, efficiency or predictability of aid have not been solved. The prevalence of each donor having its own agenda, the lack of programme sustainability, poor harmonisation between donors or the lack of coordination are still notable in the general vision of the system of development cooperation aimed at supporting higher education.

Upon analysing strategic documents from the different donors, the World Bank³⁰ notes how aid directed at higher education is completely fragmented, and consequently, has very limited impact in the countries it is being promoted. From 2001-2006, around 2000 projects from 28 bilateral or multilateral donors were classified by OECD. For the most part, the financial quantities were less than \$1m, and in two-thirds of the counted projects, these were less than \$100,000. Furthermore, the majority of projects were carried out on a university level or in a research institution, without having any repercussions on the country's national policy. Only some of the projects registered by OECD were approached from a more comprehensive perspective and supported the national educational strategy.

Leaving to one side the aspect of monetary contributions from the donor community to the support of higher education, there are two important factors that limit the impact of this aid:

²⁹ *Harmonization of development agencies in Higher education: the plausible and the improbable*; Damtew Taferra, International Network for Higher Education in Africa (INHEA)

³⁰ *Financing HE in Africa*; World Bank 2010

- i) Only 26% of aid for higher education is directed at African universities and research institutions. The rest is obtained through grants for study/research abroad or received through the study costs of students in donor countries' universities.

Although the support of international students also means help towards the objective of African countries supporting the capabilities of their human resources, international cooperation programmes can also cause *brain drain* rather than an exchange of knowledge between recipient countries and the countries of origin of the students. In this case the question inevitably emerges of up to what point indirect aid to higher education promotes growth and development in African countries.

- ii) Aid is highly fragmented, owing to the lack of coordination between donors. On this point, it is worth mentioning the efforts being made by the donor community with the aim of reducing this fragmentation. In October 2011, the second donor harmonisation seminar was held in Norway, aiming to bring together the different parties in the donor community relating to higher education, in order that they exchange information, and spark a debate over the different tools used to improve the impact and the results of the programmes being carried out.³¹

On the other hand, it can be seen how international aid is increasingly being aimed at the education sector in general, and is being granted as budgetary support, both general and sectorial. In these cases, the government has more flexibility for the distribution of its national education budget. However, in the current period of recession, higher education aid seems to be competing with other priorities such as the reduction of poverty, energy sources or food subsidies.

3.5. The situation of cooperation in Spain

a) Cooperation policies in Spain

Spanish cooperation includes higher education development programmes within its sectorial focus on general education. Work in the field of science, technology and innovation has been suggested as *a tool with a great potential in the fight against poverty, the satisfaction of needs and human development*. Analysing the official

³¹ To find out more about this initiative: <http://www.acup.cat/en/entrevista/ad-boeren>

planning documents of Spanish cooperation³² we can see how AECID notes, “*the main objective of Spanish cooperation in this area is to assist the process of generating scientific and technological knowledge to improve living conditions, economic growth and social equality*”. The approach set out in the Master Plan 2009-2012 links science/technology/innovation with economic growth, and therefore works from the perspective of fighting against poverty.

Support of science and innovation



From a geographic point of view, Spanish cooperation has traditionally had a high level of activity in the region of Latin America and the Mediterranean, and although in recent years involvement in the African continent has been increasing, we see how existing relationships with Latin American countries are still very relevant. This aspect is reflected in cooperation programmes aimed at universities, and the quality of the relationship between African and Spanish academic institutions.

In this sense and in a manner complementary to the Master Plan, AECID also has the Africa Plan 2009-2012³³, a strategic document that hopes to emphasise the Spanish government’s commitment to the international cooperation agenda (ODM) and improve the coherence of the policies aimed at the African continent. Within this Plan there are no specific guidelines for the support of higher education and university cooperation. It is true that it is picked up on in *Objective 2 – “Contribution to the fight against poverty in Africa”*, as one of the sectors of action in “*science, technology and innovation*”, and in which a list of actions to be carried out is laid out, although subsequently the subject of which tools would be used to achieve the objectives of the Plan has not been

³² Spanish Cooperation Director Plan 2009-2012 and Annual Plans (PACI)

³³ Africa Plan 2009-2012, AECID. Priority countries for the Spanish cooperation in sub-Saharan Africa are: Ethiopia, Mali Mozambique, Senegal, Cape Verde, Nigeria, Equatorial Guinea, Sudan, Guinea Bissau, Gambia, Angola, RD Congo, Guinea Conakry and Namibia.

established. In this way, we continue to back PCIs and grant programmes that will be analysed later on.

Within AECID's sector-wide educational focus, we find some courses of action that set out the route that the must be taken by the cooperation promoted by AECID.

Strengthening of higher education systems

- Technical and financial support for the improvement of the planning, management and quality of higher education systems, including training, curricular development, teacher mobility programmes, new ICT technologies, infrastructures, etc.
- Orientation of the MAEC-AECID Grants Programme towards the strengthening of educational, university and scientific structures, and the introduction of new distance-learning methods with ICT, opening up participation to companies and with new ways of shared financing.
- MAEC-AECID Assistantship programmes (ODA countries)
- Bilateral projects and programmes

Strengthening of further technical training and scientific research capabilities

- Technical support in the areas of further technical education and research linked with the development needs in member countries.
- The reformulation of the IberoAmerican Programme for Specialised Technical Training (PIFTE), towards an AECID General Programme
- The reorientation of the Interuniversity Cooperation and Scientific Research Programme (PCI)
- Main members: Universities (CRUE-CEURI), member country governments, local sectorial ministers, Education, Science and Innovation ministries, Public Research Bodies (IPAs), EC training institutions, Spanish public institutions and bodies, companies.

- Coordination with other institutions: CEDETT, the CYTED programme, international multilateral bodies, and international cooperation agencies for development

The main tools of Spanish cooperation are **PCIs** (interuniversity cooperation programmes) and **Grant Programmes**. The interuniversity and scientific research cooperation programme provides economic aid to carry out joint research and training programmes. The PCIs are made up of 2 categories: one aimed at integrated preparatory actions (*attendance of meetings, seminars, workshops, conferences and other activities aimed at promoting the movement and exchange of information*); and the other aimed at integrated actions towards *Scientific and Institutional Strengthening*, whose aim is to finance activities consolidating and institutionally strengthening units, departments or laboratories in the university or research institutions of a member country.

On the other hand, the MAEC-AECID grant programme is convened annually, is of a unilateral character and is aimed at foreign graduates who want to further their training with postgraduate and PhD studies in Spanish universities. Since 2009, the scope of these grants has widened and students from African countries can now benefit from them, whereas previously they focussed on Latin American and Mediterranean countries. Spanish cooperation understands this as an essential element for cultural and scientific relations with countries from the rest of the world.

After having analysed, in previous sections, the tools that are being implemented by other countries and bodies aimed at the promotion of doctorates, such as general approaches on the promotion of higher education in the development cooperation policies, we can see how, in the Spanish cooperation development system there is a gap between the role recognised in the university and higher education support planning documents. On the other hand, we see the tools available. Both the grants programme and the PCIs can be useful tools but they don't seem to respond to the importance that the Master Plan and the other Spanish cooperation strategic documents want to give to the promotion of higher education.

In this way, there is a lack of new instruments sufficiently equipped with resources and set out for the long term. They would be able to bring about results and make the clear backing of this education sector more visible. Being conscious of the current period of recession that the country is experiencing, and the limitations and restrictions on budgetary matters for the sector of international cooperation, it seems difficult that new tools be designed in the next few years.

b) Cooperation policies in Catalonia

The Master Plan 2011-2014 of the Catalan Agency for Development Cooperation (ACCD) considers universities to be an important actor that can bring an added value to development cooperation. The role of universities has been recognised since 2003, although on an instrumental level clear backing decided on by the higher education cooperation has not materialised.

In 2006, the first call for grants aimed at offering economic support to “*university agents*³⁴” was publicised. These agents develop “*awareness-raising, education, training, education and research projects in the field of development cooperation*”. This programme had a second call in 2008, when three types of grant were awarded: I) for projects to be implemented in Catalonia; II) for projects to be implemented in developing countries, with a maximum quantity of €60,000 per project, with some areas of defined and focussed sectorial action in priority countries for the Catalan cooperation, that in the sub-Saharan region of Africa would be Senegal and Mozambique; III) aid for research applied to development.

These ACCD grants are awarded for one-year periods and have not continued over time, without being able to evaluate the results obtained. There is also the *DEBEQ* grant programme, which aimed to facilitate PhD and Masters training for students from

³⁴ Including Catalan universities and other institutions specialised in development cooperation matters.

member countries that, after their studies, could help improve socioeconomic development of the area. This grants programme ended in 2009.

Thus, currently, and despite the Master Plan of Catalan cooperation highlighting the role of universities in the cooperation policy and the development of countries, there are no tools that promote higher education in the Catalan cooperation system and collaboration between universities.

3.6. Final Considerations

To conclude this chapter, and with the intention of emphasising some of the most important ideas that have come up in previous sections, it is interesting to point out the large number of initiatives found in the higher education sector on behalf of the international donor community. At the same time, a multitude of bodies, both public and private are appreciated. They actively participate in initiatives aimed at reinforcing PhD studies in African universities.

As previously highlighted, most resources that the community of donors has destined to higher education is still being paid out in bilaterally, which is aimed at one of the greatest challenges in this sector: the coordination between different parties. Even if these resources are being earmarked for the harmonisation of policy and programmes, the coordination of all the parties involved is a key element in increasing the efficiency of the initiatives.

It is also important to highlight the current difficulties of learning about the real impact of the international cooperation programmes aimed at reinforcing higher education. The need of long-term action and comprehensive approaches suggests the need for different parties, within the donor community, of decisively backing this sector with the aim of obtaining tangible results of their initiatives.

Finally, it is important to highlight how the majority of documents and reports that have been analysed were generated before the current economic situation of recession in

many of the donor countries. This may mean that some of the information mentioned about programmes may have changed.

Chapter 4. General Recommendations to improve PhD programmes in sub-Saharan Africa

This final chapter aims to present a proposal of general recommendations directed at detecting priority objectives and action areas to promote areas of improvement in the PhD programmes in sub-Saharan African countries. These recommendations come from the results of the analyses presented in the previous chapters. For example, the proposals outlined by the participants in the *International Seminar on Innovative Approaches to Doctoral Education and Research Training in sub-Saharan Africa*, which took place last July in Addis Ababa University³⁵.

Just as had been stated in previous chapters and in the conclusions of the cited seminar, the PhD programmes are strategic for sub-Saharan African countries for different reasons.

On the one hand, higher education is strategic in that, in general terms, it contributes to the creation of a critical mass of local researchers, aiding development of higher education systems in the entire African continent and promoting the development of countries in the Region.

On the other hand, without the possibility of higher education, the task of the university as an educational and research institution is incomplete. PhD programmes contribute to increasing the prestige of universities and promoting the search for funding, which helps to position this offer on a national and international level, and participate in the economy of knowledge.

Equally, PhD education is key in propelling the research capacity of the individual universities together with their country. The development of quality PhD programmes significantly contributes to improving the training of PhD students and young local researchers who, in future, will become trainers, researchers, political leaders and

³⁵ Delegates from 14 African countries participated in this seminar. They represented 19 higher education institutions and 8 university associations and higher education organisations that work in this continent.

African-Spanish Higher Education Platform

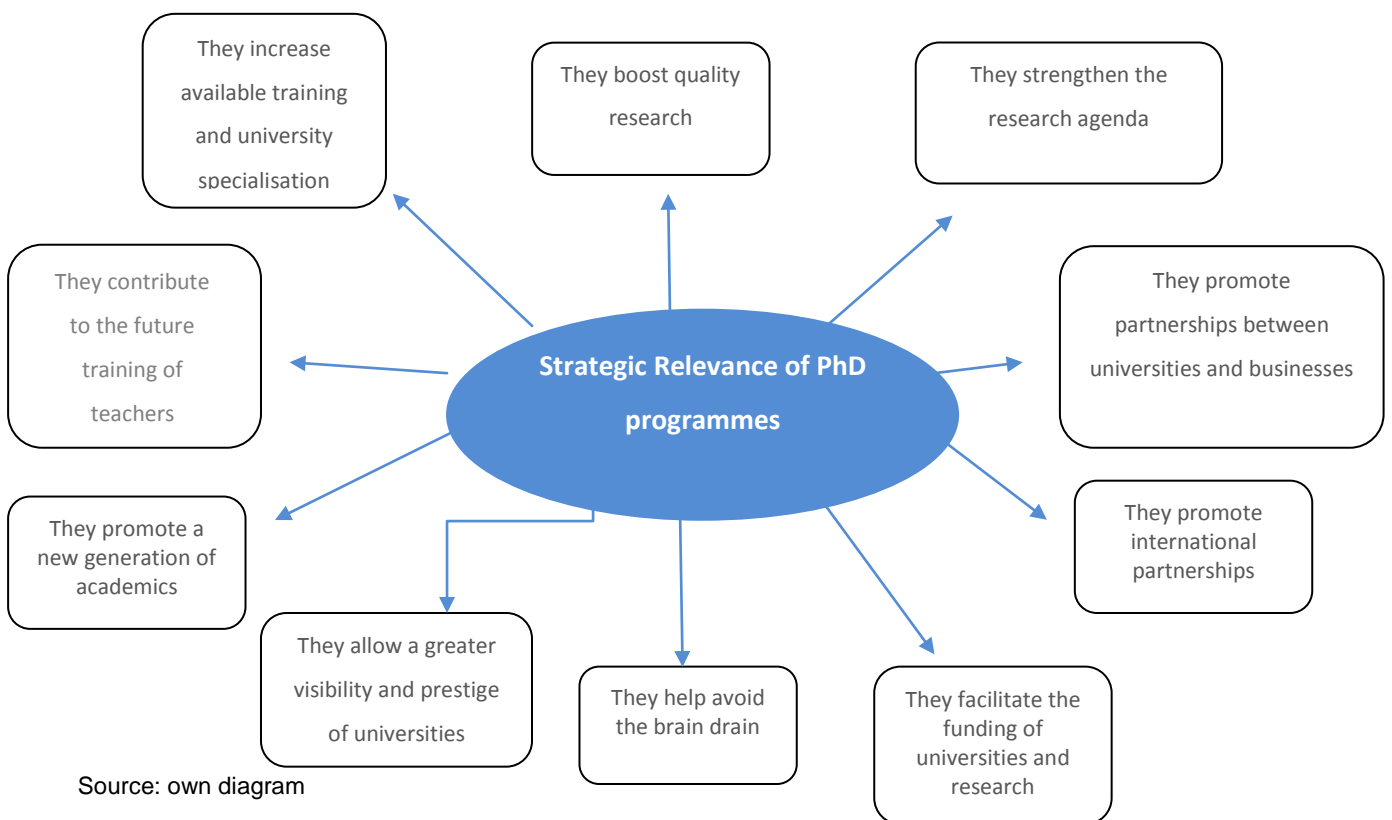
expert advisors for public and private decisions, contributing to making their countries more competitive on a regional, national and international level.

Additionally, in order to guarantee quality PhD programmes and training some strong internationalisation policies are necessary to facilitate a greater overture of knowledge that is produced in the Region on a global scale.

In this area, PhD education offers opportunities to build closer cooperation relationships between universities and companies or industries within the country, facilitating the creation of knowledge networks on a local, regional or state level.

The following diagram shows a summary of the main reasons why PhD programmes are strategic for the sub-Saharan region. This summary was produced from what experts and participants in our study have contributed.

Figure 5: Strategic Relevance of PhD programmes in the sub-Saharan region



Source: own diagram

On the other hand, as has been explained in this report, PhD studies in the Region have set out various types of challenges in different fields of action, as has been identified in our analysis. Aiming to give general recommendations to improve PhD studies in the Region to the various agents who participate in the definition, funding, management, implementation and assessment of higher education studies, possible different working areas have been suggested. It is important to take into consideration, in any case, that these proposals must be looked at within the larger development context by the countries in the Region, the political strategies and the stronger science, technology and innovation strategies.

The following diagram proposes, to the different agents, a set of prioritised objectives that have been noted by the experts and universities who have participated in this study and in recent meetings promoted on an international level to analyse, debate and propose improvements in PhD studies in the Region.

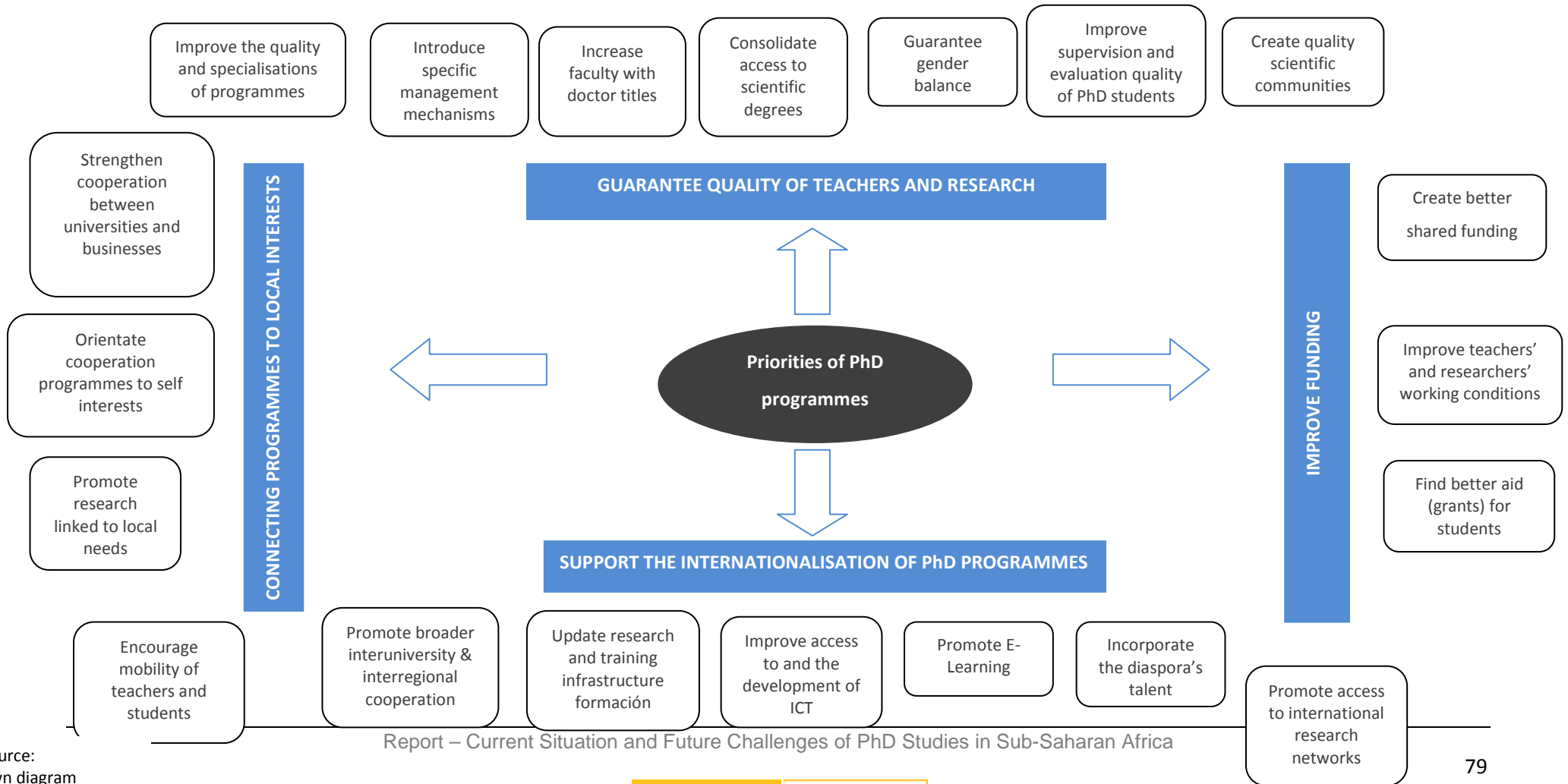
The purpose of this diagram is to provide general recommendations on the objectives and areas of action that the local parties themselves consider to be priorities and most urgent. As can be seen, these objectives and areas of action could be the object of intervention on behalf of different public and private agencies: the universities themselves, academics and researchers, local, regional political decision-makers, cooperation agencies and donors, businesses and other institutions.

The general recommendations are made up of four priorities and strategies that are closely linked to each other:

- 1) Guarantee the quality of teaching staff and research
- 2) Improve the funding of PhD programmes
- 3) Link PhD programmes to local interests
- 4) Back the internationalisation of PhD programmes

For every priority objective, more operative orientated objectives are proposed that could constitute by themselves areas of action of the different agents that participate in the decision-making processes, funding, the completion and evaluation of PhD programmes in the Region, as is shown in the following graph.

Figure 6: General Recommendations: priority objectives and action areas to improve PhD programmes



Source: own diagram

On the other hand, the study has facilitated specific knowledge that has allowed the elaboration of these general recommendations on the priority objectives and areas of action to improve PhD studies in the Region. It has also allowed the development of specific recommendations on possible tools for improvement that can be developed to achieve these priorities. These specific recommendations are aimed at proposing and providing the content of those possible programmes of action that, responding to the priority objectives and identified areas of action, can be promoted by the different agencies interested in working in this area, and can be the object of specific cooperation programmes.

In this direction, specific recommendations are proposed to develop the priority objectives and areas of action previously identified:

- 1) Improve the funding of PhD programmes
- 2) Guarantee the quality of teachers and research
- 3) Link PhD programmes to local interests
- 4) Support the internationalisation of PhD programmes

Firstly, in the area of programme development and/or cooperation to improve the funding and resources of PhD programmes, precise recommendations are proposed, aimed at strengthening:

- ✓ Development of applied research
- ✓ Teacher, researcher and PhD student mobility
- ✓ Technological training in research centres
- ✓ Basic local research units and groups
- ✓ Classroom training and E-learning

African-Spanish Higher Education Platform

- ✓ Creation of jobs in the Region's universities (professorships or centres of excellence) to attract talent
- ✓ Grant programmes for students
- ✓ "Incubating" spaces to generate new lines of research and teams

In second place, to guarantee the quality of teachers and research, specific recommendations aimed at improving the administration and management of PhD programmes have been proposed. They involve:

- ✓ Common and harmonised regulation systems of PhD programmes between universities
- ✓ Classroom or E-learning training programmes to improve capacities and abilities of those in charge of PhD programmes
- ✓ Information management systems that allow monitoring and evaluating PhD programmes results
- ✓ Processes to select competitive candidates
- ✓ Processes to supervise and assess rigorous theses
- ✓ Programmes to attract talent (mentors, teachers and supervisors)

In this same area, and with the aim of improving the quality of teachers and researchers, precise recommendations have been made that guarantee the financing and the development of specific training programmes in the following areas:

- ✓ Training in analysis and research methodologies

African-Spanish Higher Education Platform

- ✓ Definition and management of research projects
- ✓ Design and implementation of public science, technology and research policies
- ✓ Work in research networks
- ✓ Supervision of research projects
- ✓ Patent obtaining processes

On the other hand, in close relationship with the precise recommendations that have been noted, it is additionally proposed that other more specific recommendation that are linked to the development of action programmes and/or cooperation aimed at improving the conditions and the results of PhD students, such as:

- ✓ Programmes of thesis co-supervision and supervision between different scientific areas or research centres
- ✓ Grants programmes to incentivise mobility
- ✓ Libraries, information centres and digital knowledge management
- ✓ Research portals with support information for students
- ✓ Work spaces with ICT resources
- ✓ Access points for online courses in line with other universities

In third place, in the area of the linking of PhD programmes with local interests, specific recommendations have been proposed aimed at developing proposals in the following areas:

African-Spanish Higher Education Platform

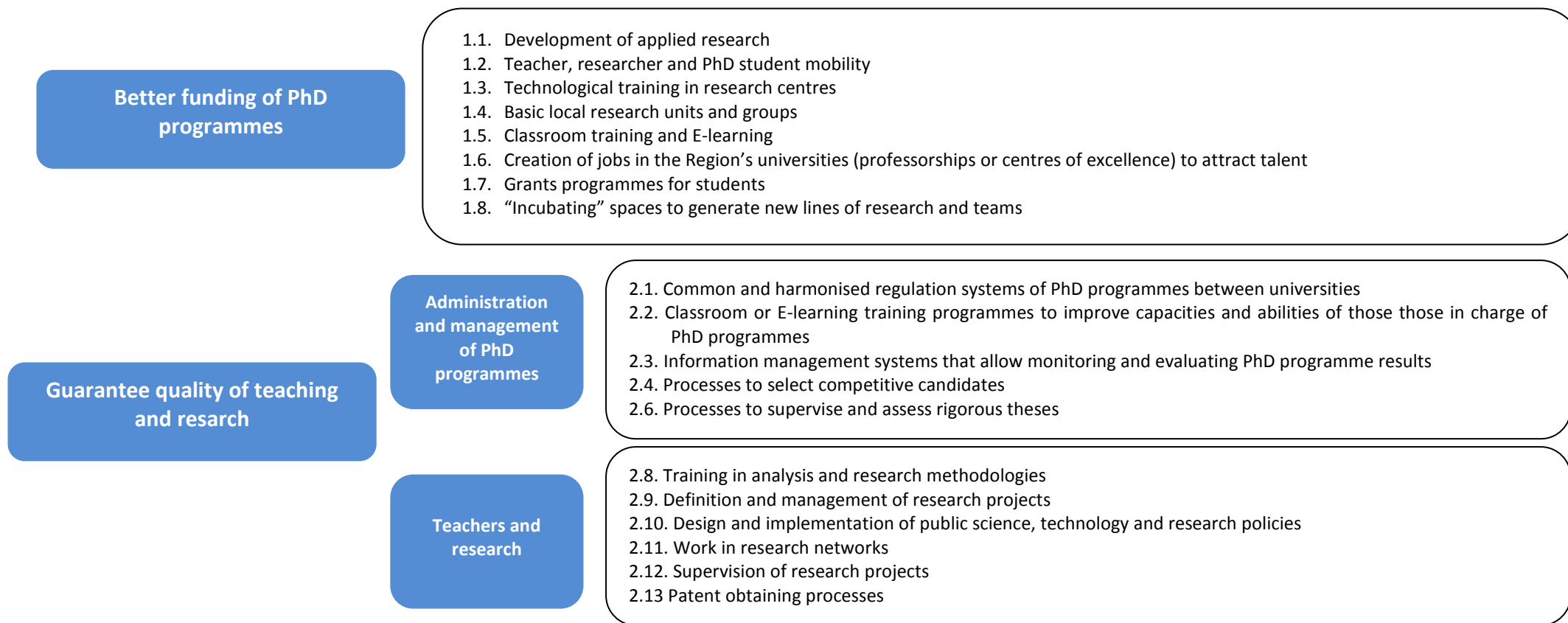
- ✓ Public-private partnerships with businesses in the Region in the production of theses or research projects
- ✓ Theses linked to strategic local necessities (industrial PhDs)
- ✓ Maps of research groups and scientific results in the Region to identify priority research sectors
- ✓ Identifying talent in the continent and abroad

Finally, in fourth place, with the aim of advancing towards greater internationalisation of PhD programmes in the Region, specific recommendations aimed at the development of action programmes and/or cooperation have been proposed in the following areas:

- ✓ The integration and harmonisation of PhD programmes in the Bologna process
- ✓ The exchange of experiences between universities on a regional, national and international level
- ✓ Combined certification of inter-university masters and PhD programmes in the Region
- ✓ Mobility of teachers and researchers between universities

The following graph brings together the all the specific recommendations that have been noted in this section, aimed at developing courses of action and/or cooperation to improve the PhD programmes in sub-Saharan Africa.

Figure 7: Specific recommendations to develop courses of action and/or cooperation to improve PhD programmes in the Region



African-Spanish Higher Education Platform

PhD students

- 2.14. Programmes of thesis co-supervision and supervision between different scientific areas or research centres
- 2.15. Grant programmes to incentivise mobility
- 2.16. Libraries, information centres and digital knowledge management
- 2.17. Research portals with support information for students
- 2.18. Work spaces with ICT resources
- 2.19. Access points for online courses in line with other universities

Linking PhD programmes with local interests

- 3.1. Public-private partnerships with businesses in the Region in the production of theses or research projects
- 3.2. Theses linked to strategic local necessities (industrial PhDs)
- 3.3. Maps of research groups and scientific results in the Region to identify priority research sectors
- 3.4. Identifying talent in the continent and abroad

Backing the internationalisation of PhD programmes

- 4.1 The integration and harmonisation of PhD programmes in the DML system
- 4.2 The integration and harmonisation of PhD programmes in the Bologna process
- 4.3 The exchange of experiences between universities on a regional, national and international level
- 4.4 Combined certification of inter-university masters and PhD programmes in the Region
- 4.5 Mobility of teachers and researchers between universities

Fuente: Elaboración propia

Bibliography

ACUP (2011). *Pla de Cooperació Universitària per al Desenvolupament 2011/2015*.

Adams, J., King, C. i Hook, D. (2010). *Africa Global Research Report*. Evidence, Ltd. and Thompson Reuters, Leeds.

Ad Boeren (2005). *Mechanisms to support higher education and research in developing countries. The perspective of donors and programme administrators*.

African Development Bank Group (2008). *Strategy for Higher Education, Science and Technology*. Operations, Policies and Compliance Department (ORCP) and Human Development Department (OSHD). African Development Bank Group.

African Union (2005). *Africa's Science and Technology Consolidated Plan of Action*, African Union.

African Union Commission (13th October 2009). *Ceremony for launch of the High Level Panel Management Unit for the Pan-African University*.

African Union (2011). *Presentation of Pan African University*. Department of Human Resources, Science and Technology, African Union.

Akin, T. (2009). "Beyond Reforms: the Politics of Higher Education Transformation in Africa". *African Studies Review*, 53 (1): 21-40.

ASSAF (2010). *The PhD Study. An evidence-base study on how to meet the demands for high-level skills in an emerging economy*. ASSAF (Academy of Science of South Africa). Consensus Report, September, 2010.

Association of African Universities, 12th General Conference,(2009). *Abuja Declaration on Sustainable Development in Africa: The Role of Higher Education*.

Baschung, L. (2010). "Changes in the management of Doctoral Education", *European Journal of Education*, 45 (1): 138-152.

Bloom, D., Canning, D. I Chan, K. (2005). *Higher Education and Development in Africa*. Harvard University, Research commissioned by World Bank.

British Academy (2009). *The Nairobi Report. Frameworks for Africa-UK Research Collaboration in the Social Sciences and Humanities*. British Academy and The Association of Commonwealth Universities, London.

Brock-Utne, B. (2006). "Formulating Higher Education Policies in Africa - the Pressure from External Forces and the Neoliberal Agenda", Institute for Educational Research, University of Oslo, Norway.

Caillaud, F.; Experton, W.; Fevre, C.; Foko, B.; Gioan, P.A.; Johnstone, B.; Marcucci, P.; Righetti, P.; Saint, W. y Salmi, J. (2009). *Financing Tertiary Education in Africa*. Task Force pour l'Enseignement Supérieur en Afrique, UNESCO.

CHET (2007) *Bilateral Country Investments and Foundations Partnership Projects to Support Higher Education Across Africa*. Peter Maassen, Romulo Pinheiro & Nico Cloete

CHEC (2011). *Review Report on Ford Foundation's Programme: Next Generation of Academics*. Cape Higher Education Consortium.

EUA (2010). *Access to success: Fostering trust and Exchange between Europe and Africa*. Project Compendium. European University Association, Brussels (Belgium),

EUA (2010). *Africa-Europe Higher education cooperation for development: meeting regional and global challenges. White Paper.*

Gallagher, R. (2008) "Africa needs basic science," *Scientist*, 22 (7): 13-21.

Hassan, M.H.A. y Schaffer, D. (2006) "Building scientific capacity in sub-Saharan Africa: From despair to hope", *Discovery and Innovation*, 18 (4): 279-87.

IAU (2010). *Changing Nature of Doctoral Studies in sub-Saharan Africa (2009-2010). Challenges and Policy Development Opportunities at 6 universities in sub-Saharan Africa.* International Association of Universities.

IAUP (2010). *Academic Chairs for Africa. A new approach to capacity building creating a Platform for Excellence in the Knowledge Society. A twenty first century model.* International Association of University Presidents.

Jan de Gast, W. (2005). "The visions, policies and programmes of a sample of Northern donors regarding their support for higher education development in the South". Paper for the Nuffic Conference "A Changing Landscape-making support to higher education and research in developing countries more effective".

Kotecha, P. (2008). *Revitalising Higher Education in the SADC Region. Chapter 1 of —Towards a Common Future: Higher Education in the SADC Region.* SARUA Study Series, SARUA (Johannesburg).

Kotecha, P. (2011). "Enhancing Regional Development through Higher Education. A Southern African University Research and Development Fund". Southern African Regional Universities Association (SARUA), Johannesburg.

Kotecha, P. Walwyn, D. Pinto, C. (2011). *Deepening Research Capacity and Collaboration across Universities in SADC: a Southern African Universities Regional Research and Development Fund*. Southern African Regional Universities Association (SARUA), Johannesburg.

Herve, T. (2010). "In Search of Sources other than Governmental in the Financing of Higher Education in sub-Saharan Africa: A Word of Caution Beyond the Gains", JHEA/RESA Vol. 8(1):73–98.

Luhanga, M. L. (2009). *The Courage for Change: Re-Engineering the University of Dar Es Salaam*. Dar Es Salaam: Dar Es Salaam University Press.

Mamdani, X. (2007). *Scholars in the Marketplace: The Dilemmas of Neoliberal Reforms at Makerere University 1989-2005*. Fountain Publisher, Kampala.

Mamdani, X. (2008). "Higher Education, the State and the Marketplace", JHEA/RESA Vol. 6 (1): 1-10.

Ministerio de Asuntos Exteriores y Cooperación (2009). *Plan Director de la cooperación española 2009-2012*.

Mohamedbhai, G. (2011). *Strengthening the research component of the space of Higher Education in Africa*. AAU Conference of Rectors, Vice-Chancellors & Presidents (COREVIP). Stellenboech, 30 May-3 June 2011.

Mouton, J. (2011). *The State of Doctoral Training in sub-saharian Africa: Statistics, Analysis and Challenges*. AAU Conference of Rectors, Vice-Chancellors & Presidents (COREVIP). Stellenboech, 30 May-3 June 2011.

Mouton, J.; Boshoff, N.; De Waal, L.; Esau, S.; Imbayarwo, B.; Ritter, M. y Van Niekerk, D. (2008). *The State of Public Science in the SADC Region*. Chapter 4.

- OECD (2009). *African Economic Outlook*. OECD y African Development Bank Group, París.
- Pereira, C. (2007). *Gender in the Making of the Nigerian University System*. James Currey, Oxford.
- Prewitt, K. (2004). "The Higher Education, Society and Government: Changing Dynamics." *JHEA/RESA* 2 (1): 35–56.
- SARUA (2011). *Deepening Research Capacity and Collaboration across Universities in SADC: a Southern African Universities Regional Research and Development Fund-SARUA*.
- Tella, A. (2008) Reformation, revitalization, and re-orientation in higher education: Which way Africa? A policy recommendation. In J. Babalola, I. Popoola, A. Onuka, S. Onij, W., Olatokun, & R. Agbonlahor (Eds) *Towards quality in African higher education* (pp. 358-365). Higher Education Research & Policy Network, Ibadan, Nigeria.
- Teferra, D. (2011). "Partnerships in Africa in the New Era of Internationalization" *International Higher Education*, 65.
- Tettey, W. (2010). *Challenges of developing and retaining the next generation of academics: deficits in academic staff capacity in African Universities*. Partnership for Higher Education in Africa. University of Calgary, Alberta (CA).
- The Lancet (2009) "Strengthening research capacity in Africa", *Lancet*, 374 (9683): 1, 2009.
- UNESCO (2007). *Science in Africa. Unesco's contribution to Africa's Plan for Science and Technology to 2010*. UNESCO, París.

UNESCO (2008). *Draft Regional Report on sub-Saharan Africa. Study on National Research Systems*. UNESCO, Paris.

UNESCO (2009). *Financing Tertiary Education in Africa*. Task Force pour l'Enseignement Supérieur en Afrique, UNESCO, Paris.

World Bank (1988). *Education in sub-Saharan Africa: Policies for Adjustment, Revitalization and Expansion*, World Bank, Washington, D.C.

World Bank (1999). *Knowledge for Development*. World Bank, Washington, D.C.

World Bank. (2000). *Higher education in developing countries: Peril and promise*: World Bank Global Joint Task Force, Washington, DC.

World Bank. (2002). *Constructing knowledge societies: New challenges for tertiary education*. World Bank, Washington, D.C.

World Bank (2004). *Improving Tertiary Education in sub-Saharan Africa. Things that work*. World Bank, Washington, D.C.

World Bank (2008). *Accelerating Catch-Up: Tertiary Education for Growth in sub-Saharan Africa*. World Bank, Washington, D.C.

World Bank (2010). *Financing Higher Education in Africa*. The International Bank for Reconstruction and Development, Washington, D.C.

WorldFish Center & International Development Research Centre (2009). *Compendium of Funding Opportunities for Research, Education, and Development Projects in Africa*.

List of acronyms

- ACU – Association of Commonwealth Universities
ACUP – Catalan Association of Public Universities (Associació Catalana d'Universitats Públiques)
ODA – Oficial Development Aid
CUD – Commission Universitaire pour le développement
DFID – United Kingdom Department for International Development
EUA – European University Association
IAU – International Association of Universities
NORAD – Norwegian Agency for Development Cooperation
MDG – Millennium Development Goals
SIDA – Swedish Agency for International Development Cooperation
USAID – United States Agency for International Development

Websites visited.

Donour agencies (by country)

- Australian Agency for International Development - AUSAID www.usaid.gov.au
- Directorate-General for Development Cooperation - DGDC
www.diplomatie.belgium.be/en/policy/development_cooperation/
- Canadian International Development Agency - CIDA www.acdi-cida.gc.ca
- International Development Research Centre - www.idrc.ca
- Department of International Development Cooperation - DANIDA
www.um.dk/en/danida-en/
- French Ministry of Co-operation and Development – FMCD
- Agence Française de Développement - www.afd.fr/home
- Gesellschaft für International Zusammenarbeit – GIZ - www.giz.de

African-Spanish Higher Education Platform

- German Academic Exchange Service – DAAD - www.daad.de
- Irish Department of Foreign Affairs and Trade - www.irishaid.gov.ie
- Japan International Co-operation Agency - JICA - www.jica.go.jp
- New Zealand's International Aid & Development Agency - NZAID - www.aid.govt.nz
- Norwegian Agency for Development Co-operation – NORAD - www.norad.no
- SIU – Norwegian Center for International Co-operation in Higher Education - www.siu.no
- Instituto Português de Apoio au Desenvolvimento – IPAD - www.ipad.mne.gov.pt
- Agencia española de cooperación internacional al desarrollo – AECID - www.aecid.es
- Agència catalana de cooperació al desenvolupament www.20.gencat.cat/portal/site/cooperaciocatalana
- Swedish International Development Cooperation Agency - SIDA - www.sida.es
- The Netherlands, Ministry of Foreign Affairs - www.minbuza.nl/en/home
- NUFFIC-Netherlands Organization for international cooperation on Higher Education - www.nuffic.nl/home
- Department for International Development - DFID - www.dfid.gov.uk
- USA United States Agency for International Development - USAID - www.usaid.gov

International organizations

- African Union - www.au.int
- African Development Bank Group - www.afdb.org

African-Spanish Higher Education Platform

- Association for the development of education in Africa - www.adeanet.org
- European Commission, Development and Co-operation EUROPAID - www.ec.europa.eu/europeaid/index
- FAO - Food and Agricultural Organization for the United Nations - www.fao.org
- UNESCO – Division of Education - www.unesco.org
- World Bank - www.worldbank.org

Higher education institutions

- Association of African Universities - www.aau.org
- Association of Commonwealth Universities - www.acu.ac.uk
- International Network for Higher Education in Africa, Center for International Higher Education (Boston College) - www.bc.edu/content/bc/research/cihe
- European University Association - www.eua.be
- International Association of Universities - www.iau-aiu.net
- Universities Ireland - www.universitiesireland.ie

Private foundations

- Bill and Melinda Gates Foundation - www.gatesfoundation.org
- Carnegie Corporation of New York - www.carnegie.org
- Ford Foundation - www.fordfoundation.org
- Hewlett Foundation - www.hewlett.org
- International Foundation for Science - www.ifs.se
- Kellogg Foundation - www.wkkf.org
- MacArthur Foundation - www.macfound.org
- Mellon Foundation - www.mellon.org
- Rockefeller Foundation - www.rockefellerfoundation.org
- Volkswagen Foundation - www.volkswagenstiftung.de

ANNEXE 1:

SCRIPT FOR THE INTERVIEW WITH THOSE RESPONSIBLE FOR THE DOCTORAL PROGRAMMES FOR THE AFRICAN SUB-SAHARAN UNIVERSITIES

INTRODUCTION

1) Purpose of the interview:

The interview is part of the empirical study that the ACUP is developing within the context of the “African-Spanish Higher Education Management Platform” project which has the following main objectives:

- 1) To verify with the universities the main challenges and difficulties that are faced by the management of the doctoral programmes in the Sub-Saharan region.
 - 2) To get to know the main results of the cooperation projects under way linked to the management of the doctoral programmes in each university.
 - 3) To identify and determine new models and activities for university cooperation focused on the management of the doctoral programmes.
- 3) The interview will last for 45 minutes.

INTERVIEW SCRIPT

QUESTIONS OF A GENERAL NATURE

- 1) Could you identify and give three reasons why the doctoral programmes are relevant for your university?
- 2) If you could measure the competitiveness of the offer of doctoral programmes in the Sub-Saharan region, could you indicate what position your university’s doctoral programmes occupy?
 - a) With regard to the offer of doctoral studies in your country, identify and explain three strengths and three weaknesses.

- b) With regard to the offer of doctoral studies in the sub-Saharan region, identify and explain three strengths and three weaknesses.
- 3) Could you identify different doctoral models in the university offers in your country? What would their main characteristics be in each case?
- 4) Starting with the doctoral models identified in the previous question, in which model do you think that your university's doctoral studies would fit in?
- 5) Which doctoral studies have the greatest demand in your university? Please give your reasons.
- 6) Do you consider that your university's offer of doctoral programmes is linked to the strategic challenges set out in your country?
- a) In the economic and productive area (local industry and business needs)
b) In the social area (needs of the population)
c) In the research, development and innovation area (knowledge economy)
d) In the public area (training of decision-makers and public managers)
- 7) Could you indicate which strategic alliances your university's doctoral programmes establish with other national and international agents?
- a) Other universities in the country
b) Businesses and industries in the country
c) Universities in the Sub-Saharan region
d) Businesses and industries in the Sub-Saharan region
e) Presence in international scientific networks
f) Offer of international doctorate

QUESTIONS REGARDING FUNDING

- 8) Could you indicate what the main sources of funding for your university's doctoral programmes are and their relevance?
- a) University's own funding
b) Public funding (administrations)
c) Private funding (companies)
d) International cooperation

QUESTIONS REGARDING SCIENTIFIC RESEARCH

- 9) To what degree do the doctoral programmes contribute to the development of basic scientific research in your university?
- a) They are the main form of access for young doctors to academic research in the university
 - b) They allow competitive research teams to be consolidated
 - c) They facilitate resources to university research teams
 - d) They incorporate prestigious academics (promoting talent from the region)
 - e) They set up priority lines of research
 - f) They facilitate knowledge exchange through scientific networks
 - g) They facilitate economic resources for research through cooperation programmes
 - h) They promote the creation of research centres

QUESTIONS REGARDING THE MANAGEMENT OF THE DOCTORAL PROGRAMMES

- 10) What type of direction and administration structures manage your university's doctoral programmes?
- a) Vice chancellorship of research and third cycle
 - b) Doctoral school
 - c) Academic department
 - d) Faculty secretary's office
- 11) What professional profiles do those responsible for managing your university's doctoral programmes have?
- a) Public managers (specific training in the public administration area)
 - b) Private managers (specific training in the business-MBA area)
 - c) Academics and researchers
 - d) Lecturers
 - e) Administrative staff
- 12) Could you indicate the main management instruments of your university's doctoral programmes?
- a) Competitive selection processes (students/teaching staff)

- b) Updated databases of students/teaching staff
 - c) Follow-up and assessment on the students (tutorship and thesis direction)
 - d) Follow-up and assessment on the teaching staff (thesis direction, scientific publications, participation in congresses, presence in the scientific networks, awards, participation in scientific journals, etc.).
- 13) Does the management of your university's doctoral programmes have a system of management indicators that allows it to be aware of the state of:
- a) The student selection processes (profiles/gender equality)
 - b) The evolution and results of the students (historic series)
 - c) The teaching staff selection processes (profiles/gender equality and categories)
 - d) The mechanisms for re-incorporating doctors from foreign universities
 - e) The research carried out by the teaching staff (ratio of publications)
 - f) The tutoring, supervision and thesis direction processes
 - g) The competitive research teams (presence of doctors)
 - h) The resources available for the research teams (funding, physical resources)
 - i) The collaboration with other research centres/doctoral programmes
 - j) The collaboration with companies
 - k) The research lines
 - l) The link between the university's scientific production and the doctoral programmes
 - m) The international cooperation projects
 - n) The presence in international research networks

QUESTIONS REGARDING DOCTORAL STUDENTS

- 14) Could you indicate the evolution of registrations in your university's doctoral studies over the last five years?
- 15) Could you describe the average profile of your university's doctoral student? (Origin, race, gender, age, degree and university of origin, level of income)
- 16) Could you indicate three reasons why students choose to study a doctorate at your university?
- 17) What is the average duration of the doctoral studies at your university?
- 18) Could you indicate the dropout rate from the doctoral studies at your university?

- 19) Could you identify which are the three doctoral specialities most requested by students? Please give your reasons.
- 20) Does the university receive economic help for doctoral students?
- 21) Could you indicate the main labour integration routes for doctors from your university?
- 22) What proportion of doctors from your university follow academic and scientific careers in the country/region?
- 23) What proportion of doctors from your university go to work abroad?

QUESTIONS REGARDING COOPERATION PROJECTS

- 24) Could you indicate which are the main agents/institutions that make up the community of donors and that finance cooperation projects with your university's doctoral programmes?
- a) National cooperation agencies
 - b) International organisations
 - c) Private foundations
 - d) Higher education institutions
 - e) Companies
 - f) Other actors
- 25) Could you indicate which interlocutors from your university design and set up the cooperation projects linked to the doctoral programmes?
- a) Vice chancellorship of research and third cycle
 - b) Doctoral school
 - c) Academic departments
 - d) Researchers at a personal level
- 26) Could you indicate, in order of importance, the main cooperation instruments used to reinforce the doctoral programmes in your university?

- a) Fellowship programmes
 - b) Research grants
 - c) Twinning arrangements
 - d) Chairs
 - e) Others
- 27) Could you indicate in which areas of action the international cooperation projects with your university's doctoral programmes are focused? Indicate five preferential areas.
- a) Basic guided research
 - b) Applied research
 - c) Guided theses
 - d) Resources for consolidating research teams
 - e) Resources for consolidating doctoral programmes (linked to companies)
 - f) Resources for providing doctoral students with basic equipment (libraries, laboratories, classrooms)
 - g) Technological and digital resources
 - h) University infrastructures (buildings, mobility)
- 28) In the area of assessing the results and impacts of the international cooperation projects on your university's doctoral programmes, do they have specific evaluation mechanisms to get to know the impact of this cooperation on the areas identified? If so, please indicate the main results.
- 29) Using propositional logic, could you suggest new cooperation instruments to strengthen your university's doctoral programmes?