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### Doctoral degrees for capacity development:

Results from a survey  
among African BiGS-DR alumni

  
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# Doctoral degrees for capacity development:

## Results from a survey among African BiGS-DR alumni

Benjamin Schraven, Irit Eguavoen and Günther Manske

Abstract	2
Introduction	3
The Alumni Survey	4
The Doctoral Training Period: Personal Networks, Experiences in Germany and Financial Remittances to Africa	6
Employment Career: Professional Networks And Home Ties	7
From Knowledge To Action	9
Conclusions	13
References	14

## Abstract

Based on the experiences of 65 African alumni of the Bonn Interdisciplinary Graduate School for Development Studies, this paper elaborates how successfully capacity development can be organized via academic migration. The results of the alumni survey clearly indicate that a home-tie-oriented training offers a solid base for supporting capacity development processes if it is organized in the form of a doctoral program. Such a program framework supports the establishment or maintenance of necessary social networks with former and present colleagues, African employers, as well as with other professionals or research institutions. The common practice of African employers to send staff and students to Bonn for the doctoral training as well as other home-tie components help to guarantee an attractive career perspective for the graduates in their home countries. The survey results also show that many African alumni have the chance to contribute their knowledge, expertise and experience to political and societal processes in their home countries even though this takes place on an institutional level rather than on an individual level. This development-relevant involvement in consultancy and decision-making processes can mainly be explained by the selection of doctoral candidates from African institutions with good linkages and a consultancy status that can communicate their research results and have impacts at the national level.

### Keywords:

Africa, Germany, capacity development, educational migration, training program

## Introduction

For several decades, the out-migration of highly skilled professionals to other countries, the so-called brain drain, has been a topic of international economic and social research. After the end of the Second World War, the debate increasingly focused on the emigration of scientists and skilled workers from the African, Asian and Latin-American countries to Europe and North America (Salt 1997; Lucas 1988). One aspect which contributed to the brain drain was the fact that many talented students migrated to universities of the industrialized countries in search of better study and research conditions, as well as to pursue highly prestigious foreign degrees. Once being in these countries, there was little incentive to return home because the job markets there could not compete, for example, with the income opportunities or research infrastructure in the industrialized countries. Thus, many graduates stayed in the country where they had received their academic education even though not all of them were able to find adequate employment there. Their personal skill development risked turning into a brain loss for their country, which was in danger of losing talented people and academic expertise. There was a number of scientific recommendations and political approaches of how to respond to such a situation or even of how to support a brain-gain-related development for the developing world by the remigration of highly skilled professionals to their countries of origin (Bhagwati and Dellafar 1973; Bhagwati 1976b; Hamada 1977). In the 1970s, for instance, a debate emerged concerning the introduction of a so-called brain-drain tax. In the 1980s and 1990s, many international development cooperation agencies initiated special programs to promote the remigration of highly skilled migrants by financially supporting the individuals as well as by providing consultative support for employers in the countries of origin.

During the 1990s, a profound paradigm change in development cooperation took place. Until then, the strategy of development was mainly based on a transfer of technical know-how mainly through experts from industrialized countries who were sent to developing countries to train and teach the local population and to supervise development projects. In the past fifteen years, development agencies have understood that development-relevant knowledge should be conceptualized as more than just expert knowledge, and that the successful development of capacity and professional expertise in the developing countries is a very complex process. Presently, capacity development is generally being perceived as a universal process in the development arena, by which the capabilities of individuals and organizations such as research institutions, as well as societies, are strengthened in order to achieve development goals. Of course, these three levels (individual, organizational/institutional and societal) are strongly interwoven and interdependent. This current approach of capacity development is not solely grounded on the return of professionals to their countries of origin; the approach also intends that these specialists creatively and purposely contribute to certain development targets at the institutional as well as at the individual level. The approach thus also deepens the concept of brain gain (see also UNDP 2009).

The education and training of young scientists from developing countries for professional research- and development-related activities in their home countries is essential. A contribution towards a significant strengthening of the quantity and quality of tertiary education opportunities could be achieved if the return of these professionals to their old academic environments were successfully promoted. The improvement of tertiary institutions is widely seen as a crucial condition for development, especially in many African countries (Sawyer 2004). Basically, the remigration of young academics to their home seminaries creates a great potential for development processes (Opschoor 2006; Vincent-Lancrin 2005). But in practice, many returnees encounter enormous difficulties when they attempt to translate their gained knowledge and expertise adequately to concrete research activities or to contribute their expertise in professional areas, such as policy advice or development projects. These difficulties are mainly related to lack of funds and material resources of the local research institutes (Martin 2005; Sawyer 2004), as well as to the fact that many research institutes have no good linkages to influential civil groups or political decision makers. Under unfavourable conditions, the alleged brain gain of these returned academics thus easily turns into a brain waste, meaning that the gained knowledge and skills have no impact and may slowly get lost. It can be assumed that the willingness of many young scientists to return to their home countries is rather low. Accordingly, it is estimated that the African continent has lost about 20,000 scientists and other highly skilled professionals every year since 1990 (IOM 2005).

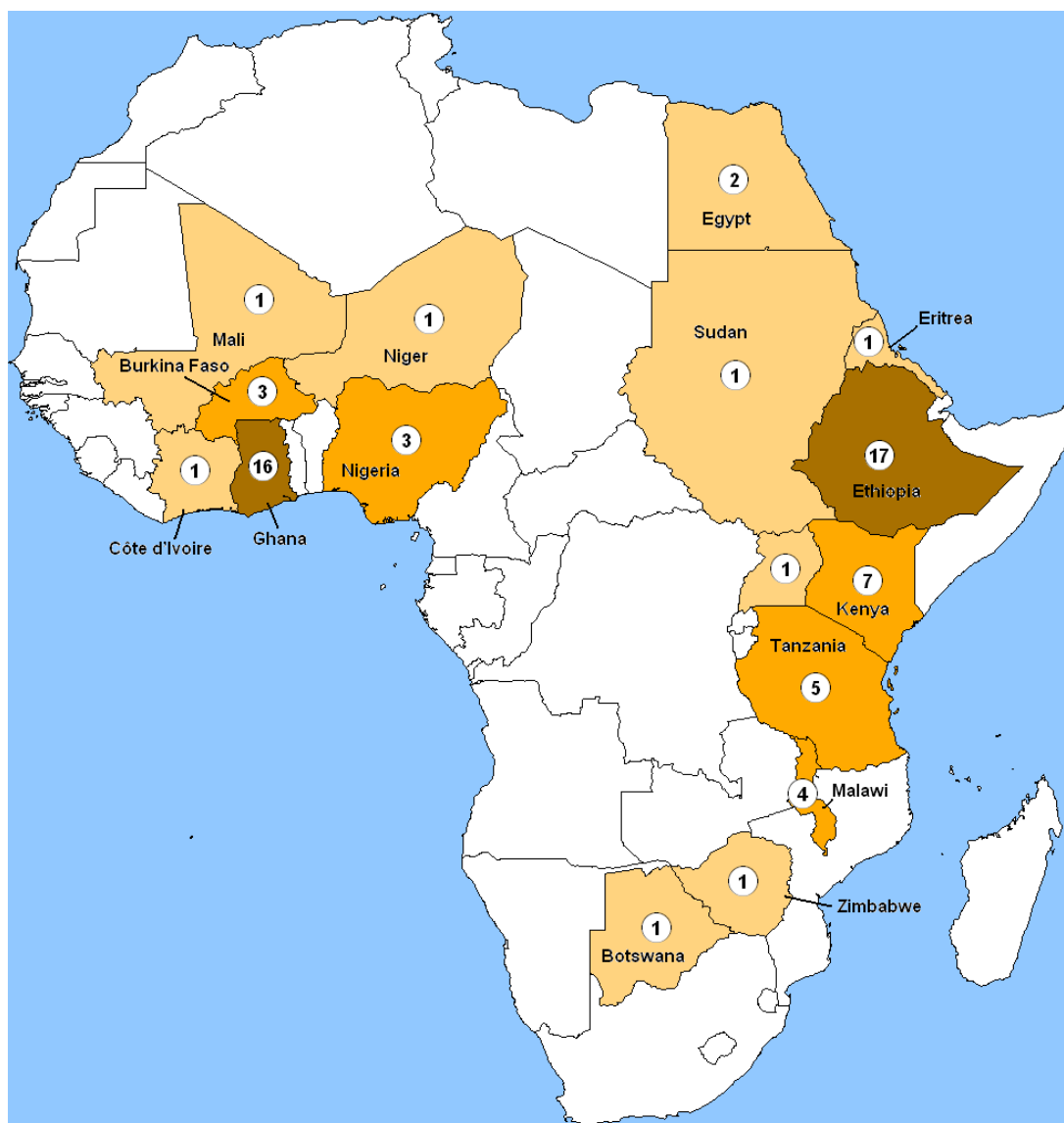
For the past ten years, the Center for Development Research (ZEF) has been training doctoral students, mainly from developing countries. The major goal of the interdisciplinary training is that the graduates return to professional environments in their home countries, where they may shape or influence processes of capacity development. The majority of the graduates of ZEF's Bonn Interdisciplinary Graduate School for Development Studies (BiGS-DR) are young academics from African countries. Based on the results of a survey, which focused on the experiences of the African alumni before, during and after their time at ZEF, this paper wishes to answer the following questions: How can capacity development and development-relevant knowledge transfer be organized via academic migration? What lessons can be learnt for the general design of programs offering advanced training of African academics? Do remigrated graduates get the chance to implement their gained knowledge and skills adequately in order to influence decision making or development processes?

## The alumni survey

Data from all 65 African alumni was extracted from the database of BiGS-DR, which contains basic information like country of origin, length of doctoral studies, etc. This data was processed for the statistical analysis of the survey. Furthermore, an online-questionnaire was created and sent to all African graduates to generate additional information. The return rate was 92 % (60 out of 65 alumni), which makes the results very robust with regard to their representativeness. Depending on the kind of question, multiple choice answer options, categorical answers, Likert-scales or qualitative-narrative answer options were offered. Additionally, a focus group discussion with eight African alumni was conducted. For the following presentation of the results, the most important and most interesting results of the alumni survey were selected.

In September 2009, the 65 graduates from African countries constituted the majority (32 %) of the 206 alumni of BiGS-DR. In contrast to many other doctoral students coming to Germany for B.A., M.A. or doctoral studies, most of the African BiGS-DR students face a situation characterized by a professional destination route, namely the creation of specialized capacity for the development of their home countries. This is also due to the fact that most of the accepted African doctoral candidates are sent by research institutes or public agencies in order to deepen their personal skills and expertise with the aim of making use of these skills in their former professional environments, e.g., in agricultural extension offices. Generally, the Anglophone countries are over-represented; only 6 alumni come from Francophone countries. More than 50 % of the doctoral students come either from Ghana (n=16) or Ethiopia (n=17) (Figure 1). The high number of candidates from these two countries and the fact that Anglophone countries are over-represented in this group is related to the large research projects at ZEF, in particular, the GLOWA Volta project focusing on the physical and socio-economic changes in the hydrological cycle in the West-African Volta Basin, and the CoCE project focusing on the conservation and use of wild coffee in Ethiopia. These two projects have attracted a large number of doctoral students from Ghana and Ethiopia as well as from surrounding countries. Over time, Ethiopia and Ghana have become focus countries of ZEF work on the African continent because, based on the cooperation with ZEF alumni from these countries, other smaller projects and follow-up projects have been initiated; the alumni also help with the selection of new doctoral candidates from their home countries. Generally, the setting-up of regional research foci has two sides, although this is not unusual for development research institutes. On the one hand, there are synergetic effects as country-specific expertise at ZEF grows and the contacts to research partners in these focus countries are strengthened by long-term social networks. On the other hand, this country focus can also lead to bias and path dependency. Thus, many African regions are less covered by ZEF research and professional networks (see also Figure 1). This becomes very obvious when looking at the countries of origin of the applicants to the doctoral program. Most of the applications are submitted by candidates living in countries where the large research projects took place (inside and outside Africa). These applicants are also better informed about the research agenda of ZEF and the required academic qualification. English is the lingua franca of all ZEF research projects. This is why the GLOWA Volta project, for example, attracted more students from Nigeria whereas the number of students from the Francophone riparian countries of the Volta Basin was comparatively low: one student from Côte d'Ivoire and three from Burkina Faso.

Figure 1: Home countries of the African BiGS-DR alumni by number of doctoral graduates from these countries



n=65

The dominant scientific sector of the African BiGS-DR alumni is natural sciences; more than 50 % of the alumni (n=35) have a natural sciences background. Only 7 alumni (11 %) graduated in a social science discipline, whereas the remaining 23 students (35 %) did a doctorate in the field of economics, often in agricultural economics. The share of female graduates among all African alumni is rather low (n=7; 11 %) and below the average of all ZEF alumni, which is 32 %. Nevertheless, the female share among the African students who are still working on their doctoral theses has increased significantly in the past years. Most striking among the African alumni is the comparatively short time period they need to finish their dissertation, i.e., 3.3 years on average. Their age at graduation (35 years) is only minimally higher than the overall average within the program (34.1 years). Many African students have had years of job experience before their doctorate training began. This results in the observed effect that in most of the cases, close ties between the doctoral candidates and their home countries persist during the doctoral training period. These home ties and their crucial effects with regard to brain gain, knowledge transfer and capacity building will be explained in the following section.

## The doctoral training period: personal networks, experiences in Germany and financial remittances to Africa

Generally, the doctoral training of BiGS-DR is characterized by a mixture of individual and group components. After a two-month German language course, the intense training modules start in October. After a one-month interdisciplinary course, which all students from the new batch attend together, the doctoral students participate in a two-month disciplinary course and work on their individual research proposals. In spring (March/April), they leave for their field research stays. After that, they return to ZEF to complete their theses. For most of the students, the required funds (such as living cost and field research budget) are guaranteed for a time period of three years. On average, the duration of the African students' doctorates is three years and four months, which is a little shorter than the overall program average, which is three years and six months. Within this time period, the average duration of field research in the research country was one year, which means that almost 30 % of the doctoral training phase was spent in the research country. For a large majority of the African alumni (85 %), the research country was their country of origin. Only 15 % conducted their field work in another African country.

When asked about their memories, the former doctoral students usually differentiated between the time before the field research and the period after that when the dissertations are written. While the training courses are perceived as very time- and labour-intensive, the analysis, writing-up and finalization phase tends to be perceived as also being dominated by personal challenges. This includes academic challenges as well as restrictions on the students' private life.

Since nearly all doctoral students have already had several years of job experience prior to their doctorate training, and due to the fact that in many African academic systems, a university degree may be obtained at a somewhat older age (as compared to European academia), the period of doctoral training coincides with the period of founding a family. Many African alumni were already married or already had children when arriving at ZEF: 27 were married (22 of them with children), a further 6 students got married during the doctoral training, and 10 had their first child or additional children during that time. The marital status of about 70 % of the students remained stable over time. Only about 10 % stated that their spouses and children were able to stay with them in Germany during the entire program phase, while 25 % were accompanied by their spouses and children for part of the time. Therefore, it is not surprising that more than 50 % stated that the periods of separation from family and friends as well as the social life in Germany were huge challenges during the whole doctoral program. The accommodation in Germany (25 %) as well as the schooling of the children in Bonn (12 %) was generally characterized as being much less problematic.

The problems related to social life in Germany are surely due to the fact that the German language remained a hindrance during the stays in Bonn. About 75 % of the alumni stated that even the communication in German during everyday situations, such as shopping or going by train, was a big challenge. Since the working language at ZEF is English and the attendance of the German language course is only mandatory in the beginning of the program, the German language skills of many doctoral students remained marginal. The initial course is generally described as being helpful but insufficient for successful communication in everyday situations. Additionally, many doctoral students spend most of the day in the offices – a number of them even on holidays or weekends to cope with a high work load, to escape their student dormitory, or to deal with loneliness. The leisure time is predominantly spent with international colleagues from the program and fellow countrymen, which means that many African doctoral students have only few contacts with Germans outside ZEF. German society, therefore, remains foreign for many African students. One could say that mentally, they do not really arrive in Germany but tend to experience a kind of parallel society of academic migrants (also including German colleagues showing the same pattern of high international mobility). But it is important to stress that through working in an intercultural professional setting and establishing contacts and friendships with colleagues from other African countries as well as with students from Asia, Europe or Latin America, the overall intercultural competence of the doctoral students is strengthened during the program. To support this learning effect, an intense and mandatory intercultural training seminar is included in the course schedule. But, although the African graduates had lived in Germany and worked in a German research

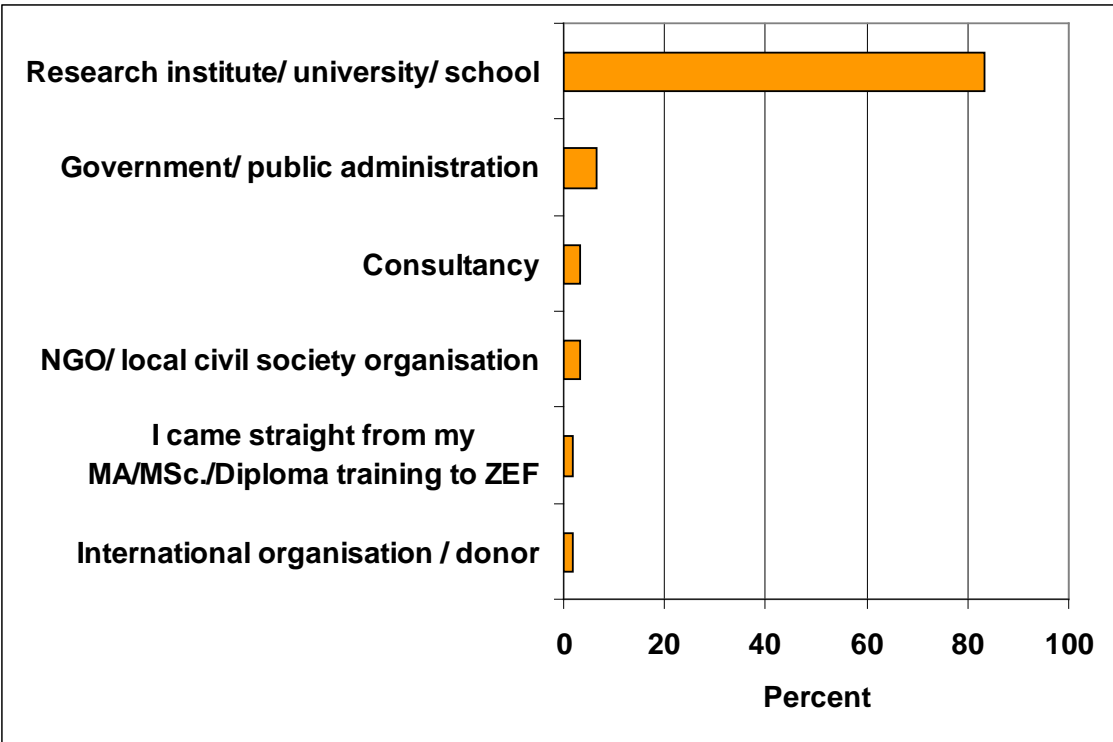
institute for more than two years, they had not really established a relationship with Germany. About 22 % of the students mentioned problems with the German culture during the doctoral training phase.

At the same time, the private home bonds of the program participants were maintained and strengthened by regular communication via phone and internet, visits during the field research as well as by the fact that the majority of African alumni has at least once sent money to family or friends back home while staying in Bonn. About 18 % of the interviewed alumni even sent financial remittances on a monthly basis. The amounts of money varied between 30 Euro and 1,000 Euro. But since money is too sensitive a topic to be dealt with in an e-mail survey, an answer was optional. Thus, the results do not reflect the full dimension of the remittances. However, given a monthly standard stipend of about 1,000 Euro, it can be assumed that the financial burden of remittances was high for many alumni.

## Employment career: professional networks and home ties

The underlying assumption of the ZEF training concept is that the alumni use their gained knowledge and expertise for their work in their home countries to contribute to development targets. A high number of alumni (70 %) were temporarily released from their former work in order to participate in the doctoral training, to conduct field research and to pursue their doctoral degree. These arrangements were mainly based on leave agreements. Several alumni had already signed employment contracts for the time after their doctoral graduation. The dominant occupational field where the alumni were employed before they started their doctoral training was academia - more than 80 % had worked in the academic sector (see Figure 2).

Figure 2: Occupational fields of African BiGS-DR alumni before doctoral training

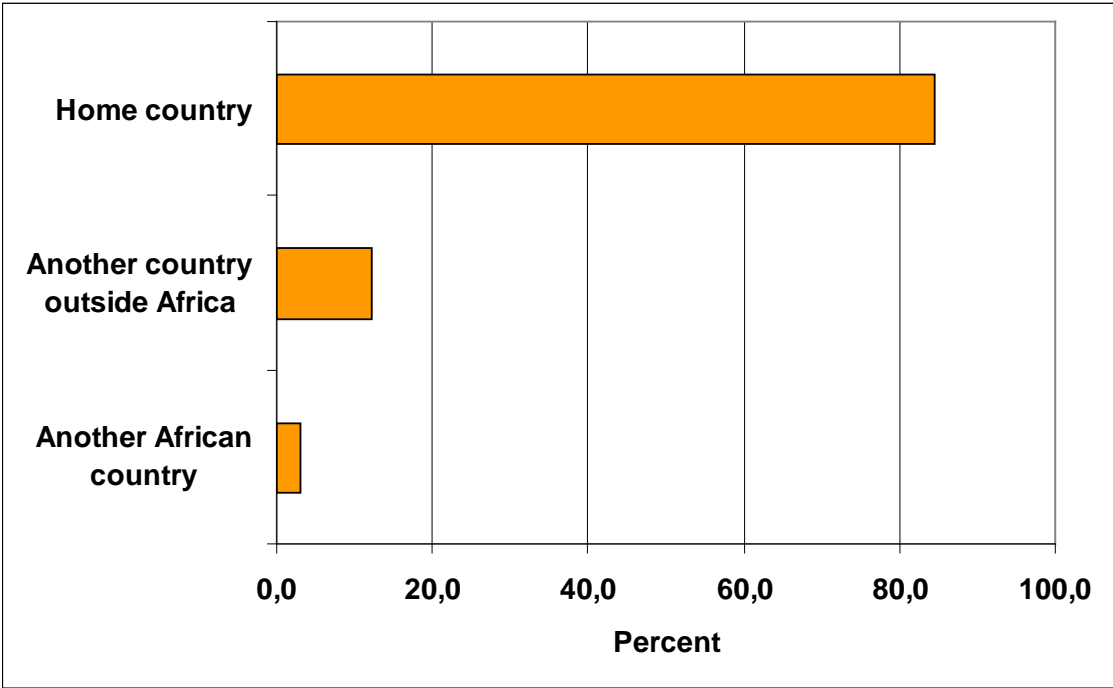


n=65

The creation of a secure employment situation after the doctoral graduation is a very important home-tie component, which acts as an incentive to return and thus contributes to a knowledge transfer and brain gain to the African countries. But there are further training components that contribute to the closeness between alumni, the home countries and the professional environment. First of all, a large majority of the African alumni have undertaken their field research in their home country (see above).

They correspondingly had selected a research topic that was related to their country and of relevance to its development. In addition, more than 30 % of the alumni stated that they cooperated with their former employer during their doctoral training phase. The diverse forms of cooperation range from the provision of office space during the field research to an active involvement of the doctoral candidates in teaching activities at their institutions or a participation of the former employers in the funding of the doctoral students (partly in the form of continued salaries). Due to the contractual and other forms of ties to former employers, the return rate after graduation to these employers is very high (70 %, n=42). Among the 18 alumni (30 %) who did not return to their former institutions, at least 7 found an employment more or less immediately after graduation with one of the partner institutions of their doctoral training phase. Thus, the average time the graduates need to find a job was marginal. This can be also related to the fact that hardly anyone saw a problem in maintaining contacts with the professional social networks in the home countries during the training period due to frequent and affordable communication via telephone, e-mail or social networking sites (Facebook, MySpace, Skype) as well as due to the long stays in the home country during field research.

Figure 3: Current countries of residence of African BiGS-DR alumni



n=65

Currently, the large majority (85 %; n=55) of African ZEF alumni are residing in their home countries, while 12 % (n=8) live in OECD countries, including one alumni in Japan. The remaining 3 % (n=2) are residing in another African country (see Figure 3). Thus, if measured in pure return rates, these numbers indicate a positive brain-gain performance of ZEF's African alumni.

## From knowledge to action

The high remigration rate is an important but at the same time only a formal criterion for concluding whether a programme such as BiGS-DR supports a brain-gain or rather a brain-drain development (Konseiga 2009). More important in the capacity development context is to find out how and in which working areas highly skilled professionals can transfer and contribute their knowledge to political and societal processes in their home countries.

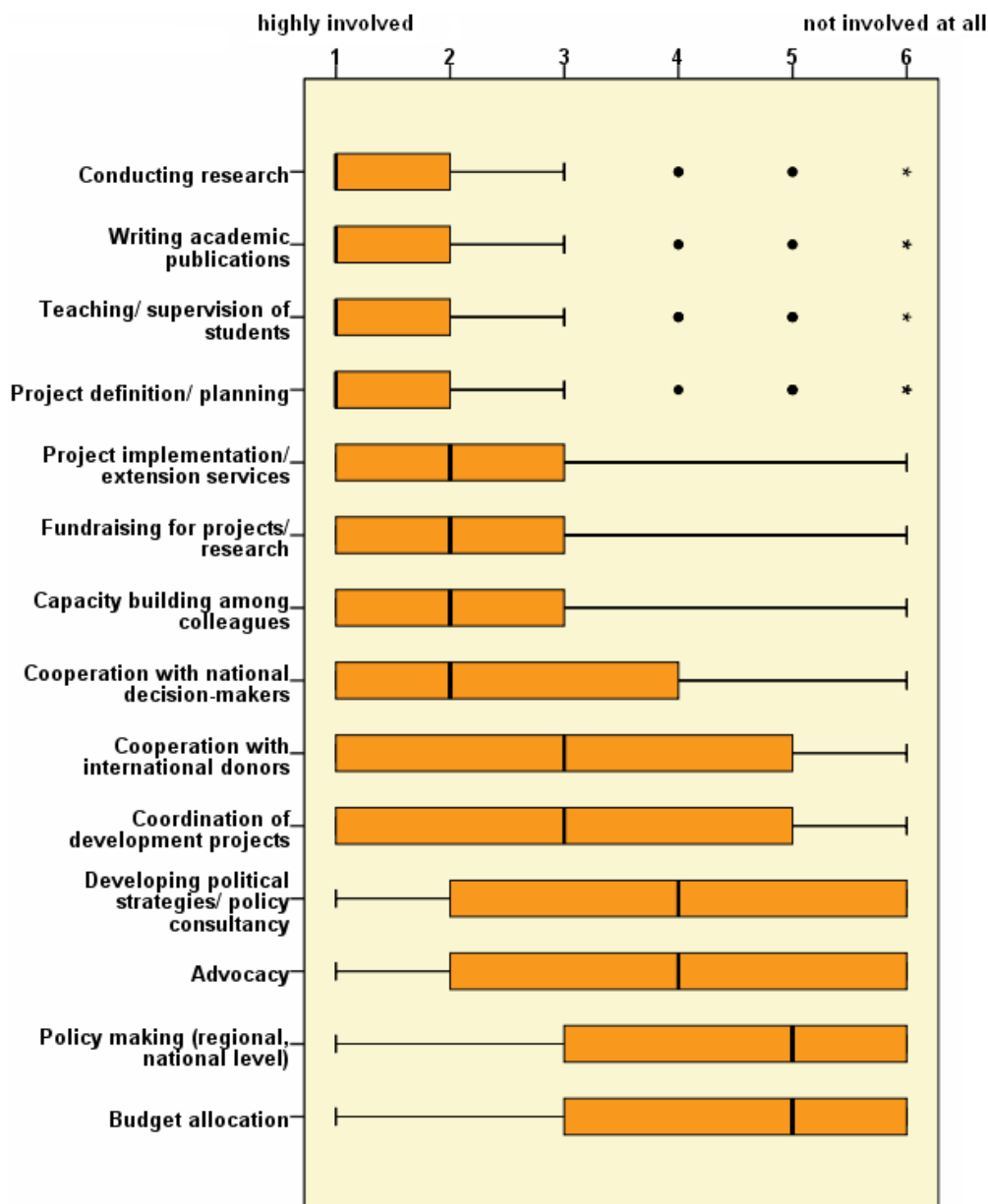
With regard to the sectors in which the alumni are currently employed, the academic sector remains very dominant. More than 70 % (n=43) continue to work in this sector. An additional 13 % (n=8) work for an international organization like the World Bank or an UN organization, which means a significant increase as compared to the employment sector composition before the doctoral training (see Figure 2). Governmental institutions, consultancies or NGOs are under-represented with 1-4 African graduates per sector; only two graduates are currently unemployed and looking for employment. These results largely reflect the high return rate to the former employers.

Regarding the question to what extent the graduates are involved in selected professional tasks within their current labour environment, it is striking that most are highly involved in academic tasks such as teaching, supervision of students, research, writing academic publication (see Figure 4). When one looks at tasks such as decision making or influencing decision-making structures (advocacy, developing political strategies, policy making at different levels, etc.), the average degree of involvedness of the alumni gets lower.

The statistics indicate that there is one powerful component for the involvedness in these activities, and that is time. Besides the personal willingness become involved in political decision-making structures with all its consequences, time is what the highly skilled alumni need to establish new professional networks in the political-bureaucratic domain and to gain further experience in order to be able to enter these decision-making or policy-influencing levels. This seniority principle becomes obvious when the African alumni are grouped into alumni whose doctoral defence is more than 3.8 years ago (49 %) and those whose defence is less than 3.8 years ago (51 %). One part of the former group is much more involved in decision-making than the latter group. This is especially valid for the tasks 'coordination of development projects' and 'cooperation with international donors' (see Figure 5). A more in-depth analysis on this issue certainly would need time-series data covering much longer time periods than seven years, which is the maximum period of work experience after graduation.

The above findings only reflect the level of individual labour tasks. But if we look at the institutional-organisational level, the situation is quite different. Interestingly, the share of graduates who think that they are directly or indirectly contributing to the development of their country is very high (n=56; 93 %). Even those who are not currently residing in their home country partly think that they are contributing to the development of their country. Their explanations clearly indicate that a large majority of alumni works for institutions that not only have a good reputation in the international development or agrarian research community but are also known to have very good linkages to the regional, national or even international policy arena as well as to other societal groups in the respective countries. Accordingly, many graduates emphasized that their research work has some impact on the area of policy makers, or has established close cooperation links with other societal groups such as farmer associations. Furthermore, most alumni see the training and supervision of young academics as an important contribution to the development of their home country.

Figure 4: Professional tasks by degree of involvedness<sup>1</sup>

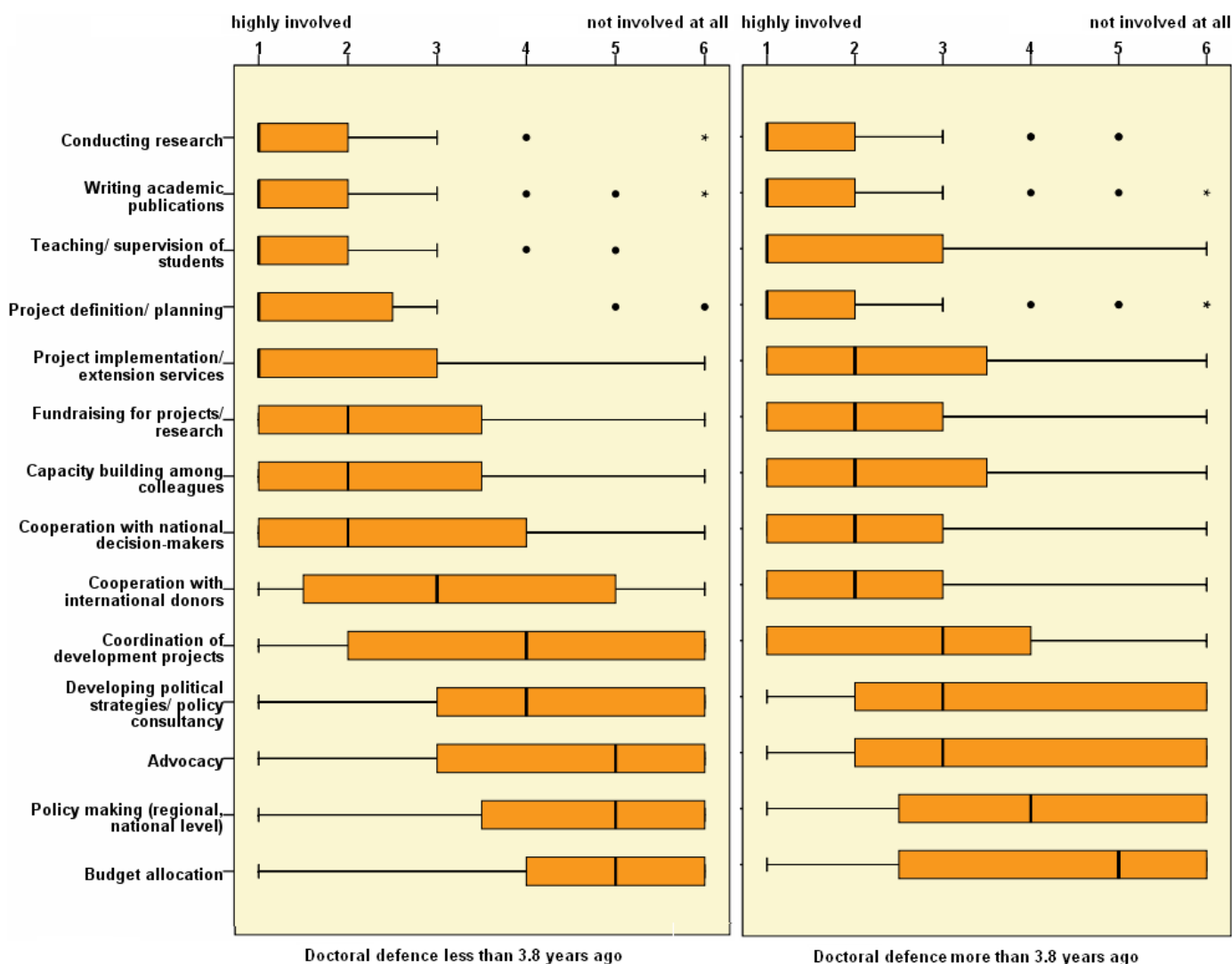


n=58

Summarizing, from the viewpoint of the integrated three-stage model of capacity development, one can say that the African BiGS-DR alumni absolutely influence societal or political processes at an institutional level. At the individual level, this process is slowly evolving. Since the first doctoral candidates graduated at BiGS-DR only seven years ago, an assessment of individual careers and capacity development processes with respect to the occupation of decision-making positions that could lead to a change in development-relevant policies is difficult. It is obviously a process that needs more time and depends on more variables than the assumption underlying the doctoral program is predicting.

<sup>1</sup> The question was designed in a Likert scale format where the particular tasks had to be ranked from 1 (=highly involved) to 2 (=not involved at all or not applicable).

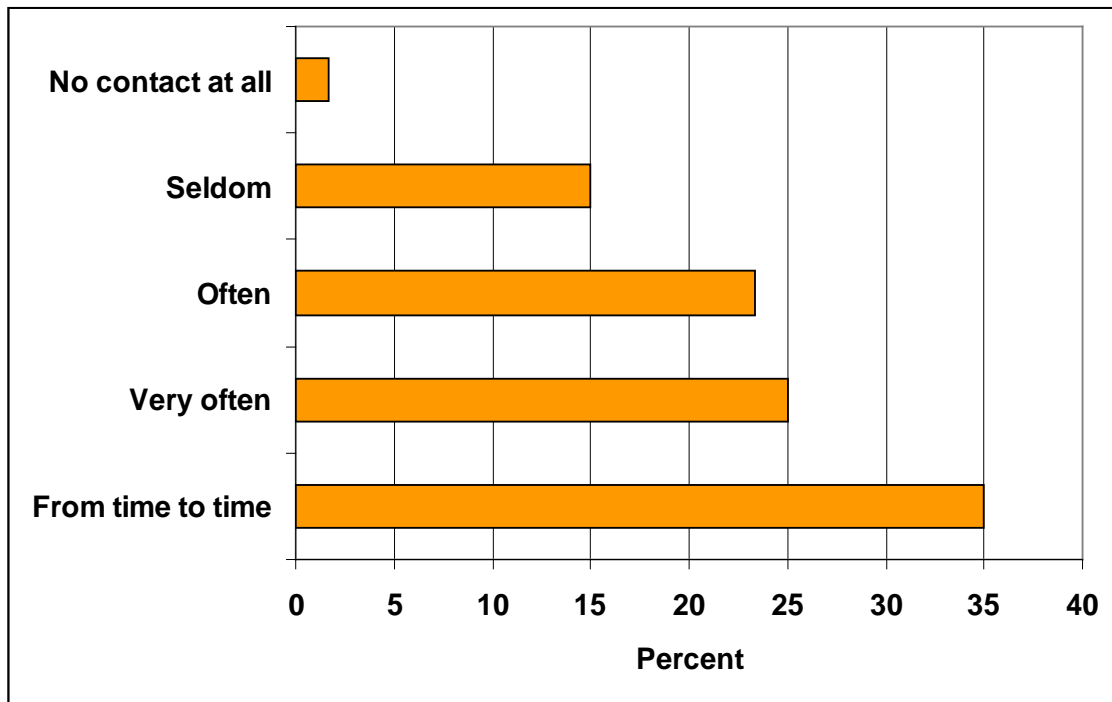
Figure 5: Professional tasks by degree of involvedness – by doctoral defence less than 3.8 years ago and more than 3.8 years ago



n=58

Based on the above results, it is not very surprising that those components of the doctoral training that are directly related to academic research and training activities are those that on average were ranked the most important for the current job situation, namely, knowledge exchange with experts, methodology training, training of presentation and writing skills, and field research experience. Although the interdisciplinary training was not ranked high, the interdisciplinary working experience was in contrast frequently mentioned as a valuable asset. Several graduates emphasized that this experience had broadened their scientific horizons and made them suitable for any kind of research setting. Another aspect of the doctoral training that was seen to be of great importance is the networking with other BiGS-DR alumni. Almost 50 % of the alumni stated that they are very frequently or frequently in contact with other ZEF alumni. Another 30 % are in contact with other former students from time to time, and 17 % stated they only have rare or no contacts to other alumni (see Figure 6). This high degree of networking between the alumni is also reflected by the fact that the majority (n=43; 72 %) have cooperated with other former BiGS-DR students in the past or are doing so currently. This professional cooperation ranges from joint publication to joint project proposals. Many alumni are, therefore, continuously benefiting from a community feeling and social-professional network that was created during longer phases of group training at ZEF.

Figure 6: Frequency of contact with other BiGS-DR alumni



n=60

The above described positive impressions with regard to the current professional environment do not apply to all alumni on the level of individual job attractiveness. Almost 90 % of the alumni stated that their current work situation is associated with more responsibilities as compared to the situation before they started their doctoral training. But only 66 % stated that their income is higher and that their current work is more interesting than it was before. So, on the one hand, there is obviously a slight disparity between the diversity of tasks and responsibilities and the payment situation, especially if one adds the social cost that many families had to bear during the doctoral training period. But this disparity becomes less when we again compare the recently graduated alumni with those who left ZEF 3.8 years or more ago. On the other hand, degrees may also pay out in other forms, such as to be able to rent a house on the campus, to raise funds for future research projects more easily, or to attend international conferences. Some alumni (in particular the women) also stated that they have gained higher social prestige due to their doctoral degree.

## Conclusions

In how far do the results of the survey among the African graduates of BiGS-DR indicate how academic migration can be organized in a way that strengthens development through professional capacity building and brain gain? The paper shows clearly that it is very useful to organize capacity-development-oriented academic training in a program or project context that is also based on important home-tie components. This institutionalized or program character is contributing significantly to the development of important academic and social competences; the intercultural and interdisciplinary competences play an important role. The doctoral candidates always keep a concrete career option in sight. A home-tie oriented program approach can (1) ensure an active communication flow and the establishment of social-professional networks between the doctoral students, which (2) lead to good contacts and a high degree of academic cooperation between alumni after graduation, and (3) help to maintain or to establish active linkages to former/future employers in the home countries already during the training and field research periods. Reviewing the literature on capacity building programs, it is very questionable whether the same number of alumni would have found a position that soon and easily after their graduation without these social-professional networks. Besides professional linkages, close private home ties are another important factor that definitively contributes to the relatively short doctoral training durations and the high returnee quotes, especially because it was by far not possible for all interviewed alumni to have their spouses or children stay with them in Bonn. The relatively short duration of doctorates was also determined by the tight schedule of the program and the three years' funding of the doctoral candidates. Even if the funding had to be extended in some cases, the initial limitation of three years generally speeded up the graduation time. But it should also be mentioned here that time pressure due to expiring scholarships and the separation from families put many the doctoral students under enormous emotional stress, and those students whose scholarships were not extended also under financial stress in addition to the academic challenge.

Furthermore, the survey results show that the establishment of regional/country foci with respect to research and capacity development can be very useful due to the synergetic effects of growing social networks and expertise within and between the respective countries and ZEF - virtually mutual capacity development.

The question whether graduates get the chance to implement their gained knowledge and skills adequately in order to influence decision-making or development processes can be answered positively for the institutional level. The majority of the alumni were affiliated with African institutes that have a good scientific reputation and are well known for being well interlinked to the national policy arena and other development-relevant actors. However, the selection of candidates predominantly from these institutes can also contribute to a capacity development that further monopolizes professional capacity within these institutions; an important diversification in the area of capacity building is thus hindered.

On the individual level, the alumni are mainly involved in labour tasks related to research. The personal involvement in tasks like consultancy, policy advice or development project coordination, i.e., tasks that allow the influencing of policy or societal processes, is basically there but only increases slowly after graduation. It is not very surprising that also in the African context there is a seniority principle, which means that experience and further social and political networking are necessary if such positions want to be reached.

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## ZEF Development Studies

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