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**International academic and scientific cooperation enforcing skills and  
knowledge circulation for the advancement of development in Africa**

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International academic and scientific cooperation is a key factor for the advancement of development due to the significant knowledge circulation component it encompasses.

The flow of knowledge as a factor in development assumes the interaction between technical, institutional and entrepreneurial components. Skilled migrants constitute a fundamental role in the linkage and integration of these factors, especially as promoters of relationships between groups and people who produce global scientific and technological knowledge and at the same time as communicators of knowledge generated in their countries of origin.

If we consider the fact that little research is carried out in the South and that production systems there are fragile, together with the reality that most knowledge and information is generated within the Northern industrialized countries before it flows towards the lesser developed South, while the flows of skilled individuals are generally in the opposite direction, we can see how knowledge, in the form of education and scientific or technological research, acquired and/or even produced by qualified migrants in their countries of destination is indeed an important development catalyst.

While Africa includes a large share of the world's poorest states, accounting for 49% of the total population living below the poverty line (UNDP, 2003), a high international mobility of qualified and skilled persons from Sub-Saharan Africa to developed countries is one of the main characteristics of today's migrations flows within and out of Africa (IOM, 2005). Therefore, when we speak about academic cooperation between Africa and Europe, African skilled migrants and students living in Europe take an important place in the debate, considering them as a source of knowledge, ideas and skills extreme valuable for their homelands.

Although developing countries account for 79% of the world's population, they account for only 27% of all scientific researchers, according to UNESCO's Institute of Statistics. According to information from this Institute, there are on average ten times more researchers per million inhabitants in industrialized countries than there are in developing countries. In other words, three out of every thousand people in industrialized countries are researchers, while only three out of every ten thousand are researchers in developing countries (UNESCO, 2003).

Some estimates indicate that there are at least 400,000 scientists and engineers from developing countries involved in research and development activities in industrialized countries, compared with approximately

1.2 million involved in such activities in their countries of origin (Meyer and Brown, 1999). The implication here is that a third of the South's scientists and engineers have expatriated to the North and are producing knowledge there. Some studies even highlight the fact that the productivity of expatriate scientists and engineers from the South who have located in industrialised countries, measured in terms of publications and patents, is greater than the productivity of such individuals if they had remained in their countries of origin (Charum, 2001).

Proponents of brain drain theory point out that costs not only include losses in future productivity, but also losses incurred by the country of origin for the education and training of the skilled expatriates. Over the last decades, however, perspectives on the effects of skilled migration have shifted; there is now greater recognition that such migration may provide potential benefits to the South instead of definite losses. Many policy discussions and analyses have revolved around the ways to achieve such a brain gain with positive effects for development in sending countries. For instance, migrants financial resources transferred to their homelands are today a key component of national poverty reduction strategies. Indeed, the sums transferred by migrant workers can be very large. According to IOM (2005), it is estimated that in 2002 the equivalent of USD 4 billion was officially transferred to sub-Saharan Africa, a sum that accounts for a significant portion of GDP of African countries. The case of Cape Verde is remarkable: migrants funds transfers amount to USD 75 million a year, or 12,5 % of GDP. In other cases, like in Eritrea, migrants' funds transfers to the country surpass the official development aid received. The IOM highlights the need to pay closer attention to the leveraging effects of such funds on development.

Besides financial remittances, the skills, knowledge and technical capacities of migrants to compensate shortcomings in the home countries can also significantly contribute to the advancement of development. Accordingly, the mobilisation of African scientists, engineers and technologists located outside of the African continent to advance knowledge-based acceleration of economic growth and development in Africa, with the result of a contribution to the reduction of poverty and an improvement of quality of life of the majority of the people living in the African continent, is necessary. During the last years different discussion have revolved around how to create and implement such a brain gain strategy. With this regard, some programmes implemented by international organizations have shown important brain gain outcomes in Africa. For example, the Migration for Development in Africa (MIDA) that uses expertise of African diaspora for development projects at home and encourages African expatriates to invest in Africa; the UNDP TOKTEN programme that encourages expatriates to serve their homelands through short consultancies. These programmes have offered options for the African diaspora to reinvest its skills, financial and other resources in temporary, long term or virtual returns to the home country or region. While other initiatives, like the AfricaRecruit platform debating with the African diaspora on how to add value to capacity building in Africa, various national North-South research partnership programmes have improved research quality in African universities and thus have contributed to Africa's progress.

This issue deserves further attention, since: 1) there is currently scant evidence that mechanisms set up in the South as well as in the North to encourage or even coerce individuals trained in Western universities to return to their country of origin have had significant positive impact in most countries; 2) measures arising from a return option strategy might run counter to individual freedom as a basic human right; 3) civil society has become more interested in reconciling its loss of human capital; 4) there is an increasing need to understand the actual development and poverty reduction effects of 'brain gain' models that have been implemented by developing countries to leverage the knowledge of their skilled professionals on the diaspora.

Considering this last point, recovering the knowledge and skills of African scientists, engineers and technologists located outside the continent and using and enhancing talents available at home are

complementary dimensions in a comprehensive brain gain approach for the African continent. Being international academic and scientific cooperation programmes important corridors for the flow of international students and skilled people between the Centre and the periphery, it is necessary to think about its specific role in boosting a brain gain strategy for the benefit of all Africa, Europe and skilled migrants themselves. In this sense, programmes facilitating North-South human capital, knowledge and skills transfer and circulation must strengthen the scientific capacities of African institutions, while they enrich European students and researchers through the possibility of doing research or working in an interesting laboratory in all the academic, scientific, technical, institutional, social and cultural fields.

Today, the challenges and opportunities of skilled migration for the academic and scientific cooperation between Africa and Europe have an ever significant relevance. Whatever the type of mechanism is used to enhance this cooperation, its overall objective must be to contribute to the advancement of development in Africa.