

Africa: A Focus on the Southern Cone

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Abstract

The purpose of this paper is to discuss an innovative project, partly based on a recently passed law entitled "Africa Growth and Opportunity Act" and to show how this presents opportunities for universities and for businesses. The first part of this paper discusses some of the background regarding U. S. and Africa. The second part of the paper describes a project starting in summer 2001 that we believe may impact many students and faculty at our university and at others. The final portion of the paper presents a view of the future role of teaching in terms of Africa and other developing nations.

Introduction

The purpose of this paper is to show the importance of increasing our focus on Africa rather than avoiding it. There are enormous problems that exist on the continent but unless we make attempts to work with this part of the world, those problems will become worse and there is no doubt that the problems will spread to other countries in other parts of the world, including United States. In this paper the emphasis will be on Namibia and South Africa.

There are increasing expressions of Africa indignation at Western countries tepid response to local efforts to turn around the Africa economies.ⁱ Foreign investment in sub-Saharan Africa increased by 17 percent during the 1900's to reach \$6 billion in 1999. However that is now flattened off. Colonial rule ended in Namibia in 1990 while apartheid was dismantled in South Africa in 1994.

Until the end of the Cold War, American policy toward Africa was largely political in the sense that it aimed at containing communism in the African continent. It tended to support those African leaders who were Western supporters, even if they corruptly exploited their own countries. The American support of Mobutu Sese Seko, the late president of Zaire (now the Democratic Republic of Congo), is an example of a beneficiary of American support, which involved millions of dollars.ⁱⁱ

In this paper we intend to show that the time is right for U.S. universities to start to develop linkages between themselves and their counterparts in Africa. This paper describes a new program with exactly that objective.

Background

On May 18, 2000, the 106th Congress of the United States passed the Africa Growth and Opportunity Act with the subtitle: "Trade Policy for Sub Sahara Africa"ⁱⁱⁱ. However, at present, most U.S. universities are not aware of the new law or the opportunities for students and faculty.

This new law now allows many products to be imported directly from Africa to the U.S., free of duty. This will affect supply chain management where parts can now be imported from Africa with no tariffs. This new law will also provide opportunities for joint engineering projects. A thrust of this new legislation focuses on the opportunities for projects concerned with infrastructure. The U.S. Government is urging private equity funds to invest in infrastructure projects in sub Sahara Africa.

Opportunities for persons knowledgeable about Africa are now appearing for U.S. trained persons as Africa becomes increasingly privatized. Firms such as Ford Motor Company, Amoco, Chevron, Bank of America and General Electric are all part of the new Africa Growth and Opportunity Act Coalition.

As an example of U.S. corporate interest in Africa there is The Corporate Council on Africa, which is a non-profit organization of American corporations whose goal is to improve the interaction between the U.S. and African private sectors. Council programs are designed to bring together potential business partners and raise Africa's investment profile in the U.S.^{iv}.

In Namibia (see Figure 1), one of the target countries for our project, the leading sectors for U.S. trade and investment include alternative energy sources, desalinization projects, and mining industry equipment.^v Students studying alternative energy sources will find great interests in their skills. Similarly engineering students focussing on civil engineering will find important uses for their talents in Namibia with projects focussing on desalinization and pipeline construction and installation.

In South Africa (see Figure 1), the leading sectors for U.S. trade and investment are in telecommunications, computer software and services, airport equipment, air pollution and waste management equipment, and security and safety equipment^{vi}. An increasing number of companies are choosing South Africa as their headquarters for operating throughout Africa. South Africa has the continent's most sophisticated free-market economy, with modern infrastructure and communication systems. South Africa accounts for 40 percent of Africa's industrial output, and maintains well-developed financial, legal and transport sectors.

The new privatization now presents important opportunities for students interested in South Africa. Initially South Africa's economy was based on gold and diamond mining. Now the economy is broadly based and largely privatized. Manufacturing and software development at present represents the largest sector of the South Africa economy.

Figure One: Map of Africa (The focus of our project is on the southern cone countries. The focus of this paper is on Namibia and South Africa)



While the majority of this background is showing the opportunities, there is another side to the coin that is the *threats*. There is a danger that Africa will move closer and closer to Europe in terms of trade, investment, and joint projects. For example, in February 2000, The European Union (EU) agreed on a twenty-year trade and aid treaty that will benefit Africa significantly. The development assistance package has a value of approximately \$15 billion. In addition, South Africa and the EU reached a bilateral agreement in early 2000 that liberalizes both imports and exports between Europe and South Africa.

Figure Two shows an increase in both exports and imports between United States and South Africa. Particularly note the increase in exports from South Africa to United States in 1999 and beyond.

As Schrader notes in *African Politics and Society*, “the transformation of foreign policy interests in the post-Cold War era has contributed to the rise of Great Power economic competition throughout Africa, particularly in the highly lucrative petroleum, telecommunications, and transport industries.”^{vii} Schraeder further points out that “in the eyes of French policymakers, the penetration of American and other Western companies constitutes at best an intrusion and at worst an aggression into France’s ‘chasse gardee’ (private hunting ground).”^{viii}

An Interdisciplinary Education Plan

This section of the paper focuses on an interdisciplinary education project, which has been approved for funding by the Department of Education.^{ix} This work builds on WPI's strong global program. Some years ago WPI realized that there was a need for education to change and to focus more on global issues and interdisciplinary education. As the third oldest technical university in the United States, WPI, a small university, was able to make these changes.

One component of our global program is known as an interactive qualifying project (IQP). Prior to each one of these projects, there is a full semester preparation course that focuses on research methods, the culture of the country where the project is worked on, and the literature review in connection with each project. For example, a year ago when we were planning to do projects in Zimbabwe, we gave a preparation course that focused on the culture of Zimbabwe. Unfortunately, because of political difficulties, we had to cancel the projects in Zimbabwe and those students did their projects in Costa Rica instead.

Typical projects planned for this coming year in Africa include:

- Technology transfer opportunities between South Africa and New England businesses
- Identification of key industries in Namibia for joint engineering projects
- Applications of Internet to enhance international exchanges from new England firms to firms in southern Africa.

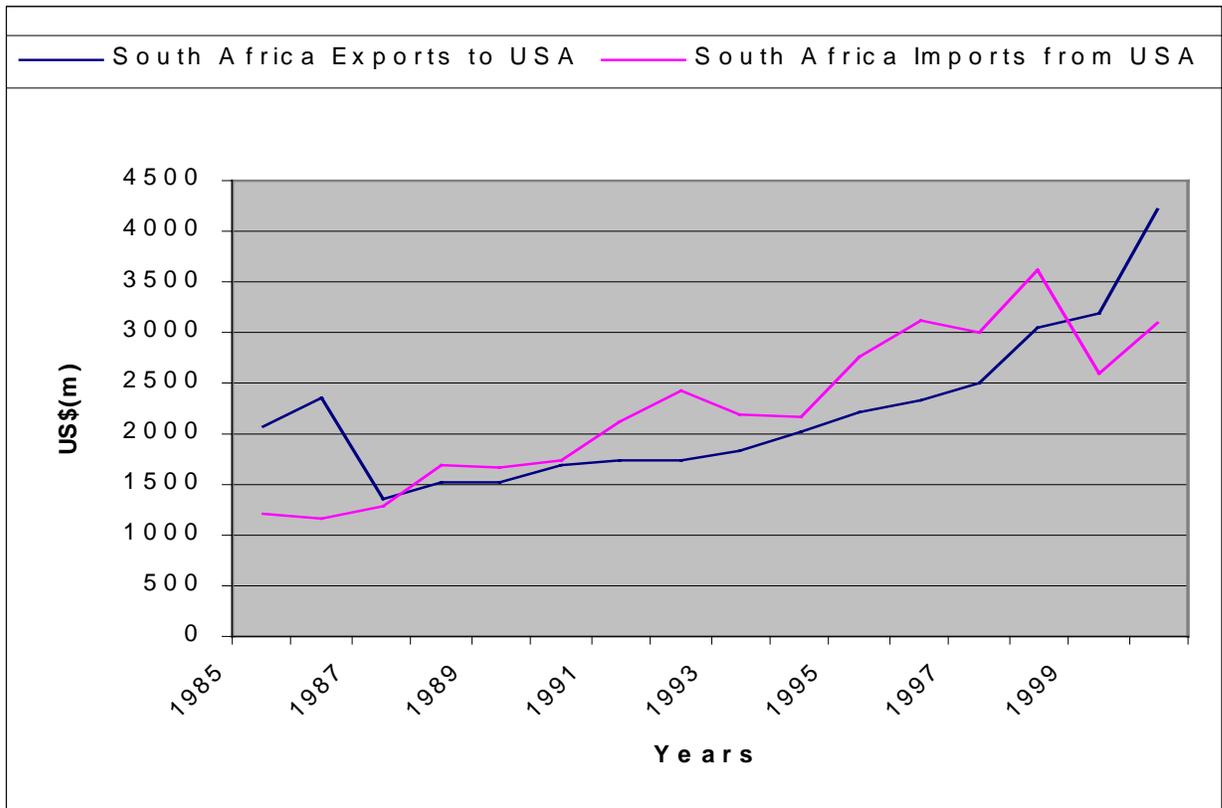


Figure Two: Imports and Exports between United States and South Africa

Source: U.S. Census Bureau 2001

Each of our teams will consist of three students and one student from the host country. This means that our students are working side by side with students from Africa. The advantage of this arrangement is that when the U.S. students need to return home, the students from the African country can continue the projects. In addition, personal friendships will develop between the U.S. students and their counterparts from Africa.

Many students have provided feedback after their graduation that describes their project work at WPI as the most important part of their learning experience. These Africa projects certainly fall into that category. For these projects, the students will not only be learning the steps necessary to accomplish the project goals, but they will be learning about the Africa culture as well. What better way to learn about the culture, than being immersed?

A second result of our Africa program is to introduce new course modules so that the students will become aware of the opportunities from that part of the world. An Africa module will be included in the course on Management of Innovation. In this case, the module will include examples of innovations from the United States appropriate for Africa, and innovations from Africa appropriate for the United States. Allan Afuah describes this in his textbook.^x In the case of innovations destined for the southern Africa market, emphasis will be on developing products and processes that fit their culture. While this may appear obvious, in actuality many firms have made costly errors by not fully understanding the southern Africa market.

In the case of South Africa, they import more than a billion dollars worth of manufactured goods. In the module that will focus on innovations for the South Africa market, manufactured goods will be carefully analyzed and through a series of case studies, the students will start to gain a better understanding of what types of innovations would achieve economic success.

A question that one might ask is how do we train our own faculty about the culture of Africa? Most of our professors have had very little exposure to that part of the world. While our own faculty are highly skilled in particular specialties, our own education has been sadly lacking when it comes to understanding most developing nations.

In order to overcome our own weaknesses when it comes to understanding Africa, we have arranged with the Africa-America Institute (AAI) to have a person come to WPI and offer training for our faculty.^{xi} The AAI offers programs in three areas, Human Resource Development, Bridging and Policy, and Investment and Economic Development.

As part of this new program we have designed an evaluation plan so that we can monitor our progress during the course of this project. We have developed a variety of techniques to systematically evaluate individual program activities. As part of this, we have formed a Board of Advisors, which consists of one person from the Africa-America Institute, one person from the Worcester consortium of fifteen universities and colleges, two faculty members, and two students. One of our objectives is to share our experiences and

findings with many universities and businesses in order for this program to have the most impact as possible.

Finally, we understand that education is a key component of a country's ability to grow. Therefore our work on site will include close interaction with local universities. It is not as if we are going there to "show them how to do it." Rather our professors will interact with their faculty and set up long-term relationships that include discussions on curriculum and teaching methods.

Future Directions

There are opportunities and *needs* for engineering universities in the United States to partner with universities in Africa, to establish exchange programs and joint research. There are needs in all fields for students from Africa to study in the United States and exchanges in the other direction as well. There are granting agencies that encourage these exchanges yet few of our universities avail themselves of these opportunities.

Since 1990, the Africa-America Institute program (ATLAS) has provided undergraduate, graduate and postgraduate fellowships for Africans studying at American universities. The project is funded principally by USAID and administered by the Africa-America Institute. In 1997 and 1998, ATLAS sponsored 463 students from 24 African countries, including Malawi, Mozambique, Namibia, Tanzania, and four Caribbean nations. These ATLAS Fellows attended a wide range of public and private institutions, including Vanderbilt, UCLA and Michigan State.

Most education, particularly engineering and management, ignores the role of developing nations. This is particularly true when it comes to Africa. However, the danger of continuing in that direction is that the divergence between the rich and poor nations will grow even larger. This is one of the most serious dilemmas of today's world. Now is the time we must try to change that. We believe that the program described in this paper takes a step in that direction.

The continent of Africa is immense (three times the size of U.S.) We decided to focus on the southern cone because there are countries there with a history of peace and good education and economies that are growing. However, the gap between U.S. and these countries is still very large. The country of South Africa has a strong software-engineering base while the country of Namibia has a strong base in mining.

There is also the danger that if we don't learn how to work with this immense continent that we will lose it. For example, South Africa, long dependent on Europe and the United States for most of its trade is now starting to focus on other countries.^{xii} South Africa is considering links with Egypt, India, and especially Brazil. In fact in a surprising move, South Africa agreed at the time this paper is being written, to begin talks on joining Mercosur, the four-country trading block led by Brazil and Argentina.

After many false starts, the developed world may be edging toward a workable strategy toward Africa.^{xiii} It is now recognized that Africans themselves must take responsibility for their own actions. This is the idea at the heart of the Millennium Program recently put forward by Presidents Mbeki of South Africa, Obasanjo of Nigeria and Bouteflika of Algeria. The conclusions are becoming clearer all the time. The momentum for progress must come from Africa itself. Second, the universities in the developed world must then be ready and willing to work with their counterparts in Africa.

The presidents of the World Bank and the IMF have been meeting with Africa leaders and discussing the Millennium Program described above. The welcome part of this worthy endeavor is that Mr. Mbeki's starting point is "a critical examination of Africa's post-independence experience and acceptance that things have to be done differently."^{xiv}

South Africa is Africa's motor. If South Africa could grow faster it would pull its neighbors along with it. South Africa's democracy is the most sophisticated in the region even though it is only six years old. South Africa is the closest thing Africa has to a superpower.^{xv}

In September 2001 WPI will be holding our first New England Africa Business Conference. This will take place at MIT and will be hosted by WPI. The attendees will include some heads of State from Africa, ministers, ambassadors, and business people from Africa and the U.S. Included will be representatives from Corporate Council on Africa and the Africa-America Institute.

In summary, what we urge in this paper is the inclusion of Africa when one thinks of globalization. Unfortunately we usually think in terms of Europe, Asia, or Latin America. However, there are opportunities and needs for students, faculty, and industry to focus on Africa.

Biography

Arthur Gerstenfeld is Professor of Management and Professor of Industrial Engineering at W.P.I. He has authored and edited five books and published more than forty articles in academic journals. He has recently received a grant from the Department of Education to carry on the work described in this paper. His Bachelors degree is from RPI and Masters and Ph.D. from MIT.

ⁱ "Africa Leaders Seek More Investment, but on Their Terms," The Wall Street Journal January 29, 2001.

ⁱⁱ Prof. Raphael J. Njoroge, Ph.D., formerly a professor at the University of Nairobi, Kenya, now living in United States. Professor Njoroge contributed greatly to the introduction and background sections of this paper. He is the author of several books about Africa. His most recent text is Philosophy and Education in Africa, Worcester, MA. Transglobal Press, 2001.

ⁱⁱⁱ Africa Growth and Opportunity Act, 2000.

^{iv} Corporate Council on Africa <http://www.africacncl.org/about.htm>

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- ^v U.S. Census Bureau, Foreign Trade Division, 2000.
- ^{vi} U.S. Census Bureau, Foreign Trade Division, 2000.
- ^{vii} Peter J. Schraeder, African Politics and Society, Boston, New York: Bedford/St. Martins, 2000) p. 326.
- ^{viii} Ibid.
- ^{ix} “Africa: A Focus on the Southern Cone” Department of Education, Business and International Education, start date June 2001.
- ^x Afuah, Alan, Innovation Management, Strategies and Implementation, New York, Oxford: Oxford University Press 1999.
- ^{xi} Africa-America Institute (AAI), Human Resource Development, Washington, D.C. 2000.
- ^{xii} “South Africa Looks West for Some Economic Muscle,” The New York Times , December 31, 2000.
- ^{xiii} “Hopes for Africa,” Financial Times, London February 27, 2001.
- ^{xiv} “Africa’s Elusive Dawn,” The Economist , February 24, 2001.
- ^{xv} “South Africa’s Role in the World,” The Economist , September 2, 2000.