

Using E-clustering to Reinvigorate the Mano River Union

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Abstract

This essay examines the tenuous state of the Mano River Union (MRU) and suggests how E-clustering can be employed to reinvigorate the association. The MRU is a regional association established between Liberia and Sierra Leone in 1973. Guinea joined the association in 1980. The goal of the Union was to foster economic cooperation among the three neighboring countries. It is named after the Mano River which begins in the Guinea highlands and forms a border between Liberia and Sierra Leone. Due to political instability and conflicts involving the countries, the objectives of the Union have not been achieved. Nonetheless, on May 20, 2004, the Union was reactivated at a summit of the three leaders of the MRU states at the time: recently deceased President Lansana Conté of Guinea, former President Ahmed Tejan Kabbah of Sierra Leone, and former Chairman Gyude Bryant of the Transitional Government of Liberia. On April 1, 2008, Cote d'Ivoire agreed to join the association during a state visit by current Liberian President Ellen Johnson-Sirleaf, who is also the current Chair of the MRU. With the December 23, 2008 military coup d'état in Guinea led by Captain Moussa Dadis Camara immediately after the death of Conté, the fate of the MRU continues to be tenuous. The major question then becomes how the MRU can be reinvigorated in light of these challenges. In this essay, I suggest that E-clustering, which is an innovative approach for economic policy based on the concept known as "cluster-building," can help. An economic cluster initiates the networking of all participants in a value-added chain. The objective is to bundle the potentials and competences for increasing the innovation power and competitiveness of the partners in a cluster. Given Internet technology, even business and government networking in rural areas can obtain a driving force. Internet technologies such as infrastructure, applications, platforms, and broadband can enable the business processes between companies, academic institutions, research institutes and governments to be networked. E-business and E-government/E-administration cause fundamental structural changes of the private and public sectors. Given this reality, there is a need for economic and technology policy. This need is taken into account in E-clustering. The partner countries in an MRU E-cluster can be networked by processes that are more standardized and so able to be supported by online applications. The E-cluster will require a central infrastructure and services. Knowledge management, E-learning, E-marketplaces, personnel management and E-government will be the main processes and services of an MRU E-cluster.

Keywords: Mano River Union, E-clustering, Liberia, Sierra Leone, Guinea, Côte d'Ivoire

Introduction

This essay, as its title indicates, is an attempt to show how E-clustering can be used to reinvigorate the Mano River Union (MRU). It begins with an assessment of the MRU by presenting a brief historical background, discussing its goal and objectives, and noting its successes and failures with the reasons. This is followed by a review of the three interrelated attributes of E-clustering: (1) the

importance of times-technologies—telecommunication, information technology, multimedia, entertainment, and security, (2) the concept of cluster-building, and (3) the cluster strategy. After that, an E-clustering strategy for the MRU is suggested. In the end, conclusions are drawn. Before doing all this, however, it behooves me to note that the scientific notion of “clustering” is not new, although “E-clustering” is.

Scientific clustering emerged as an important statistical application in the early 1980s as researchers studying similarly situated entities employed the Cluster Analysis methodology: a number of techniques that are utilized to create a classification. A clustering method is a multivariate statistical procedure that empirically forms “clusters” or groups of highly similar entities. It starts with a dataset containing information about a sample of entities and attempts to reorganize these entities into relatively homogenous “clusters” or groups (Aldenderfer and Blashfield, 1984:7).

E-clustering, according to Ute Hansen (2004a), is an economic approach based on the concept of “cluster-building.” In this case, an economic cluster initiates the networking of all participants in a value-added chain. The objective is to bundle the potentials and competences for increasing the innovation power and competitiveness of the partners in a cluster. Given Internet technology, even business and government networking in rural areas can obtain a driving force. Internet technologies such as infrastructure, applications, platforms, and broadband can enable the business processes among companies, academic institutions, research institutes and governments to be networked. E-business and E-government/E-administration cause fundamental structural changes of the private and public sectors. Given this reality, there is a need for economic and technology policy. This need is taken into account in E-clustering. The partner countries in an E-cluster can be networked by processes that are more standardized and so able to be supported by online applications. The E-cluster will require a central infrastructure and services. Knowledge management, E-learning, E-marketplaces, personnel management and E-government will be the main processes and services of an E-cluster.

Assessing the MRU

As stated earlier, in this section, a brief historical background of the MRU, its goal and objectives, its successes, failures and the reasons are presented. The purpose is to get the reader to see why the E-clustering strategy that follows is imperative, coherent and cohesive.

Brief historical background, goal and objectives

Named after the Mano River which begins in the Guinea highlands and forms a border between Liberia and Sierra Leone, the Mano River Union (MRU) is an international organization established on October 3, 1973 as a customs union by Presidents William Tolbert of Liberia and Siaka Stevens of Sierra Leone and signed in Malema, Sierra Leone. The MRU is regarded as the first attempt at closer regional economic integration in Anglophone West Africa. The goal of the Union was to foster economic cooperation among the member states to promote trade and a unified tariff and customs policy (McGovern, 2008), with the attendant objective of establishing “a firm economic foundation for lasting peace, friendship, freedom and social progress” MRU Secretariat, 2006).

Discussions and studies, some of which were conducted by the United Nations Development Program (UNDP), had suggested this direction since 1967. In 1976, the Mano River Bridge was built to connect Liberia and Sierra Leone, thereby facilitating the free flow of persons and goods between the two countries. By 1979, the two countries had signed 18 protocols. Under the leadership of President Sékou Touré, Guinea joined the MRU in October of 1980. The Union was most active

during between 1977 and 1981, during which time it met targets in the introduction of a common external tariff, the intra-Union trade level, and the liberalization in goods of local origin (McGovern, 2008).

But even before the attainment of its initial objective, it was soon evident to the MRU member states that trade liberalization on its own was insufficient to exploit the full potentials of the grouping. As a result, the Union embarked upon the development of complementary programs to stimulate the growth of intra-regional trade. These programs that cover most economic and social sectors include the coordination and harmonization of macro-economic policies, the development of certain basic infrastructure: hydro electricity, trade, roads, air and sea transportation, and communication (MRU Secretariat, 2006).

As conflicts consumed the MRU's two founding members during the last two decades, the Union lay dormant. It was reactivated on May 20, 2004 at a summit of Presidents Lansana Conté of Guinea and Ahmed Tejan Kabbah of Sierra Leone and Chairman Gyude Bryant of the Transitional Government of Liberia convened in the Guinean capital, Conakry. Since then, there have been several high-level meetings, leading up to the heads of state summit in May of 2008 at which Côte d'Ivoire formally adhered to the Mano River Declaration and became a member of the Union. Presidents Ellen Johnson-Sirleaf of Liberia and Ernest Bai Koroma of Sierra Leone have given vocal support to the notion of "revitalizing" the Union, albeit little has been offered in terms of specifics (McGovern, 2008). MRU's development partners include the United Nations Population Fund (UNFPA), the United Nations Development Program (UNDP), the Asia Development Bank/Asia Development Fund (ADB/ADF), the Economic Community of West Africa (ECOWAS), the African Capacity Building Foundation (ACBF), the African Union (AU), the United Nations (UN), the European Union (EU), the United States Agency for International Development (USAID), and the Joint United Nations Program on HIV/AIDS (UNAIDS) (MRU Secretariat, 2006).

The leadership of the MRU is embodied in its Secretariat, through which the Union's documents are produced, processed into resolutions through regular meetings of the Union Ministerial Council that signs them, and then made into protocol by the heads of state. Inside the Secretariat, the Secretaries General are to guide the Directors and staff to respond quickly to activities required to be undertaken by the staff. Several feasibility studies and reports are produced and projects implemented by the Secretariat (MRU Secretariat, 2006).

The headquarters of the MRU Secretariat is situated at Delco House in Freetown, Sierra Leone and has four sub-offices in the following locations across the region: (1) N'Zerekore in Guinea, (2) Kenema in Sierra Leone, (3) Nimba in Liberia, and (4) Danane in Côte d'Ivoire. The four sub-offices are headed by sub-office coordinators supported by general services and junior general services staff. The Union seeks to decentralize some substantive activities of the Department of Peace program by moving them from the headquarters to the Conakry and Monrovia sub-offices. It is believed that this approach will be particularly relevant for the Department of Peace Building, Security and Political Governance; the Department of Economic Policy and Integrated Development; and the Department of Social Civil Society Affairs and Gender. There is also a plan to decentralize some elements of the humanitarian affairs component at headquarters (MRU Secretariat, 2006).

Successes, failures and reasons

Despite the many challenges the MRU member states have had to face during the past two decades, the Union has recorded a number of notable achievements since it was launched in 1973. Aided by the good economic performances of member countries between 1973 and the late 1980s and particularly by the peaceful coexistence and stability at the time, the Union was able to record

significant successes in the areas of trade liberalization, infrastructure, industrial development, agriculture, transport and communications, education and training, and energy (MRU Secretariat, 2006).

In fact, a needs assessment conducted by the Economic Commission for Africa (ECA) in July of 2000 revealed that the MRU has served as a major catalyst for accelerating and managing the process of economic cooperation and integration in the region. In addition to boosting intra-Union trade through the elimination of tariff and non-tariff barriers, the MRU has played a major role in harmonizing national policies, developing regional infrastructure, and enhancing the productive capacity of major sectors such as agriculture, industry and energy. In terms of trade and customs, a trade liberalization scheme came into effect on May 1, 1981. As it pertains to transport and communication, many projects were launched, namely Air Mano, Selling, the MRU Basin Development Project, the Freetown-Monrovia highway, the Freetown-Conakry highway, and the PANAFTEL project. For industry, there were the rehabilitation of glass bottle production and the mass production of mini-arm mills. In the area of agriculture, there were the development of trypanotolerant livestock, food crop production, limited post-harvest losses, fisheries, the determination of the territorial waters of the member states, and the joint protection of the territorial waters of the region. In terms of cooperation in political matters, security, and foreign affairs and defense, there were the implementation of the 15th Protocol and the establishment of the joint border security and confidence building units (MRU Secretariat, 2006).

A notable success of the Union is the MRU Forum. In 1994, International Alert started an ad-hoc engagement with governments, rebel groups and civil society organizations in the MRU region. In 1999, through the establishment of the West Africa Program, this engagement was systematized and the program team has held consultations with a variety of local groups including students, religious leaders, lawyers, child soldiers, ex-combatants, and women's groups from Liberia, Sierra Leone and Guinea. Through these different encounters and partnerships with local groups, it became quite apparent that in order to deal with the underlying causes of violence, it is imperative that support is provided to local initiatives and organizations focused on ending violence on a regional basis. With this objective in mind, the MRU Forum was designed to develop a regional constituency of conflict prevention and resolution expertise that cross-cuts physical, social and ethnic boundaries. The Forum comprises permanent representatives of civil society organizations that have been working to advocate peace, monitor events, mediate between warring parties, make representations to governments and intergovernmental bodies, and engage development and humanitarian agencies in conflict-sensitive analyses of their work. The project involves a series of meetings, workshops and capacity building training designed to share information and experiences related to war and peace in the Mano region, analyze the root causes of violent conflict, and formulate strategies for overcoming obstacles to peace (MRU Secretariat, 2006).

Another noteworthy success of the Union is the MRU Youth Project. Building on its experience in Liberia while working with young people, the MRU's West Africa Program extended its youth focus throughout the region. Many young people in the area face an uncertain future, carrying the burden of trauma and lacking the skills to engage in building a solid foundation for peace. The MRU conflict has militarized young people in the region to an unprecedented level, perhaps unequalled in any other part of the world. The recruitment of child soldiers has been common within all of the warring factions; it is estimated that there are more than 20,000 child soldiers in Liberia and Sierra Leone alone, most of who were forcibly recruited. Over 80 percent of the youth in the region are unemployed and very often illiterate. They provide a large pool of available labor and are predisposed for recruitment into state and non-state warring parties. In a context where poverty and deprivation are rampant, and war is commercialized, being a fighter becomes a means of livelihood. The MRU Youth Poverty Project invests in conflict prevention by equipping young people, though

active participation and education, with essential conflict management skills as well as employment skills, ensuring that tense situations do not escalate and erupt into violent conflicts (MRU Secretariat, 2006).

One more notable success of the Union is the HIV/AIDS Project, which is the result of dialogue and consultations among the African Development Bank (ADB), representatives of the MRU governments, representatives of refugees, internally displaced populations, the MRU Secretariat, UNAIDS, UNFPA, UNDP, World Health Organization (WHO), non-governmental organizations (NGOs) and community-based organizations (CBOs) working on HIV/AIDS among refugees and displaced populations in the MRU states. Under the leadership of UNAIDS, a broad-based consultative process brings together all of these bodies. The results of the consultations have been the articulation of a regional program for the fight against HIV/AIDS among the displaced populations. The project focuses on reducing risk and vulnerability factors with a view of preventing the emergence and spread of new infections among refugees, internally displaced populations' settlements as well as their host communities. It builds on lessons learned and strengthens partnership in developing regional capacities for disease control in recognition of the link among conflict, mobility, and HIV transmission (MRU Secretariat, 2006).

The most notable success of the Union is the establishment of the Mano River Union Women's Peace Network (MARWOPNET) and its leading role in the promotion of peace among member countries (MRU Secretariat, 2006). The organization was first led by its dynamic founder, Hadja Saran Daraba Kaba of Guinea. It built on the very strong role of women in the region's politics, which ranges from the pre-colonial history of female chiefs and paramount chiefs in Sierra Leone's Mendeland to the fact that women were aggressively integrated into the security forces, the legislature and the civil service in Socialist Guinea, to the fact that female lawyers are well-organized and vocal in Liberia, to bring women's voices and concerns to the negotiation table from 2000 onwards. MARWOPNET even brought the leaders of the MRU to the negotiating table, a proof of its capacity in peacebuilding and mediation. More recently, the organization has been involved in trying to achieve the kinds of social integration of ex-combatants never fully achieved (and in Guinea, never even attempted) by international efforts (McGovern, 2008). MARWOPNET was awarded the United Nations' Human Rights Prize in 2003 for its contribution to peace in West Africa. It is unfortunate, however, that, as Rachel Amram observes, the group's "mediation contribution in this conflict is missing from the documentation of this conflict as well as by their presence at the forums of the official talks" (sic) (www.essex.ac.uk).

In spite of the preceding successes, the MRU has experienced many failures as well. Just as the MRU was about to embark on further consolidating the gains already made and charting a new path for the 1990s, a civil war broke out in 1989. The conflicts that have ravaged the Mano River Basin in the past decade have resulted in economic regression and devastation. The instability that engulfed the region continues to stymie its socio-economic development (MRU Secretariat, 2006).

During a one-day summit of the then heads of state of the MRU—Presidents Lansana Conté of Guinea and Ahmed Tejan Kabbah of Sierra Leone and Chairman Gyude Bryant of the Transitional Government of Liberia—held in the Guinean capital, Conakry, on Thursday, May 20, 2004, Kabbah attested to the fact that the MRU had failed in its initial objectives: i.e. to build institutions for the development of trade and other activities among the member states. He ascribed the failure to the conflicts that have crept into the member countries. More pointedly, Bryant stated that "Liberia has always been accused of being the trouble maker" and added that he was pleased that a new phase had started in the region with the holding of the summit and apologized for any interruption Liberia may have caused to the functions of the Union. Indeed, it is clear that the instability of the past two decades has undermined regional integration efforts. For instance, by denying the MRU Secretariat needed resources, it has also undermined the Secretariat's capacity to implement major projects. And

worst, a number of projects constructed with MRU and donor resources were destroyed during the civil wars in Liberia and Sierra Leone (MRU Secretariat, 2006). A profitable question then is the following: Are the conflicts that have marred the Mano region the only reasons for the failure of the MRU? The answer, of course, is no. While the conflicts did contribute to the failures, other factors played a significant role as well, and these and their attendant reasons are discussed in the rest of this section.

In terms of security challenges related to cross-border trading, the key reasons for this situation include widespread corruption, failure to apply the MRU and ECOWAS protocols, inadequate manpower and equipment to secure and control borders, lack of gender awareness by officials, and the absence of mechanisms to report and redress abuses. Not only do these problems violate the MRU protocols and pose an economic challenge to cross-border traders, they also affect the traders' personal security. As it pertains to information exchange between civil society and the security sector, the structures lack financial capacity and have low degree of institutionalization which affects their functionality. Regarding initiatives for building trust between the civil society and the security sector, these mechanisms lack sustainability and are limited in scope and effectiveness (Conciliation Resources, 2008).

Many reasons have been cited by various observers for the shortcomings of the MRU. First, the nature of domestic politics in the MRU countries has been based on a patron-clientelism system of governance, driven by informal networks through which state resources are appropriated to support and consolidate regimes in power and their supporters. Political clientelism, as a system of governance in the MRU, is a more or less personalized, affective and reciprocal relationship through which state resources that should have been committed to broad-scale development are employed to build and expand personal rule via the discretionary distribution of personal favors and the development of clientelistic ties to key individuals and groups (Solomon, 2004).

Second, as a corollary to the politics of patron-client relations, patrimonialism and neo-patrimonialism extend the former. Patrimonialism emphasizes the failure of political institutionalization and the general privatization of the political arena. It is a system of rule whereby the administrative and military personnel are responsible only to the ruler rather than to the office the ruler represents. Neo-patrimonialism involves a high degree of personalized rule due to the natures of public and private arenas being functionally indistinct. The personal authority of "strong" rulers such as Siaka Stevens, Sékou Touré, William Tolbert and Félix Houphouët Boigny became virtually synonymous with government itself. They treated the "states" as their personal fiefdoms, and together with the ruling elites were able to extract and redistribute patrimonial resources along regional, ethnic and familial lines in order to consolidate their grips on state power and ensure the longevity of their regimes (Solomon, 2004).

Third, the conflicts in the MRU are complex, multi-layered and increasingly personal. Rebel groups ally with neighboring heads of state in symbiotic relationships to pursue wars of revenge. There are extensive cross-border linkages based on ethnic and other factors. The same dynamics exist between Guinea and Liberia, Sierra Leone and Liberia, and Guinea and Côte d'Ivoire. As McGovern points out,

Especially in the region where [Guinea, Liberia, and Sierra Leone] meet, there are more similarities than differences amongst the three original members of the MRU. The Kissi people, for instances, found themselves living in Guinea, Liberia and Sierra Leone as a result of arbitrary colonial frontiers, while large ethnic groups with a history of pastoral nomadism, itinerant trade and Islamic scholarship and proselytization, like the Fulbe (Fulani/Peuhl) and Maninka (Malinke/Mandingo/Dyula), live in all four countries. A number of other ethnic groups live on both sides of international frontiers which are largely porous, and have done

little to stop them from visiting neighbors and relatives on the other side of the border to attend weddings, funerals, or weekly markets. Towns like Guékédou, Ganta, Koindu, Sinko, and Danané have long served as major regional markets, despite what is sometimes their real isolation (McGovern, 2008:6).

McGovern adds:

During the civil wars in Liberia and Sierra Leone, the number of refugees resident in Guinea and Côte d'Ivoire was in the hundreds of thousands, sometimes approaching one million. The large majority of Liberians in Guinea, for instance, settled not in refugee camps, but in Guinean villages. Most Loma, Kpelle and Mano people found distant relatives on the Guinean side of the border, and others reactivated relationships between villages, drawing on the historical legacy of their Guinean neighbors having fled both the French colonial and the Sékou Touré governments, and came to Liberia in decades past. During the civil war and resulting partition of Côte d'Ivoire, many people of Guinean origin, some of whom had not visited the country in decades, or who had been born in Côte d'Ivoire to Guinean parents, returned to their natal villages (McGovern, 2008:6).

In essence, MRU governments use rebel groups in neighboring countries simply to their own domestic political and security advantages. For example, the involvements of Burkina Faso and Côte d'Ivoire in Liberia's conflict and, by extension, Sierra Leone's, were deliberate decisions for political, economic and ideological purposes (Solomon, 2004).

Fourth, for much of the 1990s, residents of Liberia, Sierra Leone and Guinea had difficulty convincing the rest of the world to consider the civil wars in Liberia and Sierra Leone as regional phenomena. Only when cross-border attacks from Sierra Leone and Liberia into Guinea in 2000-2001 and the involvement of Liberian and Sierra Leonean fighters in Côte d'Ivoire's war in 2002 occurred did the interlinked nature of peace and security in the four MRU states become evident to everyone. Given recent history, in which Côte d'Ivoire actively destabilized Liberia from 1989, Liberia exported war to Sierra Leone and briefly to Guinea, and both Guinea and Côte d'Ivoire later supported rebel forces that unseated Charles Taylor in Liberia, the relations of the four MRU countries have been as much ones of competition as of cooperation (McGovern, 2008).

Finally, MRU's administrative structure has faced technical constraints from the start. It was originally overseen by a Union Ministerial Council that included all Ministers whose portfolios were involved in the Union's activities. Given that this was in the 1970s (a pre-Internet, E-mail and Skype era), such management was doomed. Nonetheless, the Union has survived with a Secretariat located in Freetown, albeit the Secretariat is under-resourced and has very limited capacity even to execute the few projects undertaken by the MRU. Another constraint is the problem of overlap and duplication of existing efforts. An example is the MRU's HIV/AIDS program discussed earlier. Prevention, detection and treatment of HIV/AIDS are a priority for all the MRU states. This takes place at the national level, within the Ministries of Health, at the international level under the auspices of such agencies as UNAIDS, WHO, and UNFPA, at the continental level where the AU announced its continental strategy in 2006, and through many implementing partners some of which are local NGOs and IGOs. The MRU has also entered the arena, particularly given the logical premise that both violent conflict and refugee camp life tend to be accompanied by higher than normal levels of sexual assault and sex work, both of which could lead to increased levels of HIV infections. The problem, however, is that the MRU has little technical expertise and its programs largely duplicate others. Furthermore, the issue of small arms and light weapons is indicative of the structural enforcement problems MRU states are encountering. While all of the member states have

pledged to support regional peace and security and have also signed the 1998 ECOWAS small arms moratorium, lack of enforcement has made such initiatives useless. Guinea, Côte d'Ivoire and Liberia have all been identified as importing weapons without informing ECOWAS of their intention to do so as stipulated in the moratorium. It is estimated that even a relatively peaceful country like Ghana produces 40,000-60,000 locally manufactured firearms each year, many of which filter into neighboring countries. Part of the problem is that when protocols agreed by regional bodies contradict the national interests of their member states, supranational ideals are shoved aside (McGovern, 2008).

The E-clustering Approach

In a series of six papers (2004a, 2004b, 2005a, 2005b, 2006a, 2006b), Ute Hansen of the Ministry of Economic Affairs, Employment and Transport of the State of Schleswig-Holstein in the Federal Republic of Germany developed E-clustering as an innovative approach for economic policy. The three interrelated attributes of this approach mentioned earlier are described in the following subsections.

The Importance of times-technologies for an innovative economic policy

According to Hansen, times-markets comprise a major mechanism for the transformation from industrial to information society. Developing rapidly and causing innovations in all industries, times-technologies can be an accelerator for the economic and technological development of a region. The digitization and networking precipitated by the development of broadband infrastructure and applications can push the convergence of different media: information technology and telecommunications industries. Changing business processes, new integrated value-added chains, different organizational structures and innovative products will spur increased employment and economic growth.

The strategy of an economic and technology policy that focuses on clusters ensures innovation, growth and employment in a region. Times-cluster performs two important functions for the processes of innovation. The first function is that due to cross-function technologies, times-cluster accelerates innovation and, thus, the technological and economic development of the application-clusters like life sciences and tourism. The second function is that time-cluster itself is an application-cluster. These functions of times-cluster provide a great potential for innovation and growth for a region to become economically competitive and dynamic. The realization of the strategic E-clustering strategy can lead to an interlocking of the regional times-cluster policy and user-cluster policy.

The cluster-building concept

Hansen points out that the goal of a policy that is geared towards cluster-building is to support regional networks of competitive and cooperative actors in a cluster. An economic cluster initiates and pushes the networking of all participants in a value-added chain, which are companies, institutions such as universities and research institutes, customers, suppliers, employees, representatives of interest groups, and the public sector. A cluster consists of independent organizations that strive for economic growth and efficiency. In accordance with the concept of cluster-building, it is the intensity of the interaction of the actors, not the individual actors, that has a positive effect on the competitiveness of a regional cluster.

The focus of cluster analysis then is the regional or geographic agglomeration of networked organizations and individuals. Efficiency and specialization are derived because the geographic concentration of firms in internationally successful industries often occurs as the influence of the individual determinants in the “diamond” and their mutual reinforcement are heightened by the close geographic proximity within a region. A concentration of rivals, customers, and suppliers will promote efficiencies and specialization. Even more important is the influence of geographic concentration on improvement and innovation.

The cluster-building concept inherits a new dimension because the innovative time-technologies provide new technological possibilities to support the process of cluster-building. Independent of time and location, the actors of a cluster are able to take part in information, communication and transaction processes with internal and external partners of a cluster. The ability of a cluster to be competitive hinges upon its capacity to digitalize the internal cluster processes and the processes among different clusters. Thus, the competitive advantages of a regional and local cluster-building are enforced by the digitalization of the cluster processes. The concept of local and geographic clustering has to be extended by the E-clustering concept.

A paradox concerning regional clustering and the process of globalization implicitly undergird the E-clustering approach. Since the classical factors of production are now more accessible due to globalization, competitive advantage in advanced industries is increasingly determined by differential knowledge, skills, and rates of innovation that are embodied in skilled people and organizational routines. The development of skills and the important influences on the rate of improvement and innovation have become local. The paradox is that as global competition becomes more open, the home base becomes more, not less, significant.

Processes of knowledge management and learning are increasingly being supported by information and communication technology (ICT). As a result, the competitiveness of a regional cluster in the global market will depend on the extent to which the cluster specific process of knowledge management and learning are standardized and digitized. Employing E-knowledge management and E-learning applications will allow the cluster to concentrate on the cluster specific and regional competitive factors described in the paradox of regional clustering and the process of globalization.

An E-clustering approach of a regional economic and technological policy means, on the one hand, a digitized network of the actors of a process-oriented cluster organization and, on the other hand, a digitized network of different clusters. Consequently, distinction should be made between internal and external processes.

A cluster is characterized by a critical mass of actors in a value-added chain that can be focused on technology, processes, or industries. Thus, E-clusters will yield the following positive effects: (a) accelerate the distribution of knowledge, (b) reduce transaction costs, (c) provide for an infrastructure, (d) produce economies of scale, (e) cause external economies, (f) produce economies of specialization, (g) stimulate competition and cooperation, and (h) enforce the internationalization of the economic and cluster-specific relations.

The focus of a cluster policy then is the potential growth of a regional cluster. The acceleration of the innovation processes fostered by cooperation and competition leads to increased employment and growth in the region. An all-embracing cluster has to take into account and to balance out business, economic, technological, employment and educational objectives in order for a management instrument to be applied that meets these requirements. Robert S. Kaplan and David P. Norton’s “balanced scorecard” (1996) is a management instrument that can be applied to delineate a concept for a comprehensive cluster strategy. The outcome will be a strategic frame for E-clustering that is transferable to all regional cluster initiatives or strategies.

The E-clustering strategy

Hansen identifies four major characteristics of E-clustering strategy. The first characteristic is the use of a balanced scorecard as a strategic instrument—i.e. a strategic management system that, on the one hand, is appropriate to evaluate a strategy and, on the other hand, has its main function during the realization of the strategy. The balanced scorecard depends strictly on times-supported processes. A cluster organized by these particular processes is imperative for the application of the balanced scorecard to develop a cluster strategy. The balanced scorecard concept is therefore based on the assumption that managers of the public and private sectors have visions and have also developed a mission and a cluster strategy. The process of developing a scorecard proceeds in the following seven stages:

- Stage 1: Evaluation of the strategy by taking the vision and mission into account
- Stage 2: Deduction of the strategic objectives
- Stage 3: Connection of the strategic objectives
- Stage 4: Determination of the measured values
- Stage 5: Determination of the assigned values
- Stage 6: Determination of the strategic activities
- Stage 7: Interconnection with the operational planning

The strategic objectives are linked to measured values with a long-term focus. To realize the objectives and measured values, strategic activities must be planned. In addition, milestones that have to ensure the connection between strategy and the operational plan must be specified. Thus, the balanced scorecard must entail a vision, a mission, a strategy, perspectives, objectives, activities, measured values, and a cause-effect-chain.

The second characteristic entails the vision, mission and strategy, which must be integrated in the objectives of the regional economic policy. The goal is to maximize the welfare objectives concerning stability, growth, structure, and distribution. The economic policy should always be geared towards innovation, growth, and employment. In order to develop the model of a cluster policy, a vision, a mission, and a strategy are needed. The model serves as the starting point for the conception of the E-clustering balanced scorecard. It is the first step in the dynamic strategic process: i.e. the scorecard process. Cluster actors must therefore participate in the scorecard process because all results, like the model, have to be accepted by the whole cluster.

The third characteristic is about the perspectives of an E-cluster, which are needed to establish a balanced system of objectives and measured values that are necessary to develop a comprehensive strategy. An E-cluster in its formative phase should develop five interrelated perspectives. The first is the economic perspective of an E-cluster, which represents the final output produced by all economic cluster activities. The decisive goal is to improve the economic output and, thus, the gross value-added. The second is the partner and cooperation perspective, which is immensely essential for the cluster strategy. The cluster actors, particularly the companies, the universities, the research institutes, and the public institutions, should organize themselves in network and in cooperation in order to bundle and, therefore, increase their potentials and competences. The third is the cluster perspective, which entails the internal and cluster overlapping processes that are critical for the successful market position of the cluster. The collaborative processes are part and parcel of the main E-cluster processes. Innovation, knowledge management, learning and government/public processes are used to illustrate the perspective processes of the cluster strategy. The fourth is the improvement and development perspective, which focuses on activities and measured values that represent, on the one hand, the improvement and development of competencies of the cluster

actors and, on the other hand, the optimal application of times-technologies in the cluster processes. This strategic perspective is oriented towards the growth of the cluster because the human capital and the times-technologies are vital motors for innovation. The main processes of the cluster are collaborative processes that can be supported by times-technologies that will generate a benefit for the cluster actors and for the cluster as a whole. These processes include (a) E-innovation in which companies, research institutes, universities, and government participate; (b) E-knowledge management and learning through which the processes and contents of knowledge management and learning are digitized so that the cluster actors could use them on demand at any time and from anywhere; and E-government through which strategies are realized with the objective to organize public services as processes and to support them with times-technologies. The fifth is the organization and policy perspective which is concerned with the objectives and activities of the cluster management and the cluster policy. During the formative stage of the development of a cluster, it is imperative to integrate the organization and policy perspective in the balanced scorecard.

The final characteristic is the cause-effect-chain, which must be developed because its assumptions concern the perspectives' overlapping effects that must be controlled and evaluated. The objective is to determine whether the assumptions about the effects are valid. The following questions must be raised and probed: How is cooperation influenced by the funding activities of the public sector? Is the influence of the cooperation within the cluster on the innovation processes of a cluster significant? Which effects on the gross value-added and the employment are to be expected? Cause-effect-chains of the balanced scorecard are all based on assumptions concerning the dependencies of objectives and measured values. A controlling and, if necessary, an adaptation of the balanced scorecard are needed to empirically test the assumptions. To produce reliable assertions with the instrument of the cause-effect-chain, statistical methods must be applied.

An E-clustering Strategy for the MRU

What I suggest here is a prototype E-cluster that would enable various entities/actors in the four-member states of the MRU to manage critical aspects of their operations from a single interface. The MRU E-cluster aims to identify some possible solutions to sustain and support the Union. Thus, the E-cluster entails tools designed to pull down geographical distances and facilitate information and knowledge sharing. The general key elements are (a) geographical concentration, (b) specialization, (c) multiples actors, and (d) critical mass. The main challenges for the MRU E-cluster are globalization and dematerialization, both of which call for radical redefinitions of physical proximity (local or global) and cultural identity (new or old). These developments have created the need for social or indigenous knowledge preservation while at the same being open to internationalization.

I recommend three project steps. The first step is to set up a model of the E-cluster and test it. The second step is to implement the model, and I suggest the use of action research methodology: i.e. research that involves the active participation or inclusion of groups under study (for more on this technique, see, for example, Bangura and McCandless, 2007). The final step is to evaluate the outcomes of the model in order to be able to replicate it in similar circumstances.

As represented in Figure 1, I identify 14 potential clusters that can be digitized into a network for the MRU E-clustering strategy: (1) government/administration, (2) geographical, (3) higher education and research institutes, (4) customers/population, (5) commodities, (6) interest/political pressure groups, (7) communications, (8) security, (9) transportation, (10) internationalization, (11) health, (12) tourism, (13) religious, and (14) refugees. The following subsections entail brief descriptions of these clusters.

Before discussing these clusters, however, it makes sense to mention that there exists a civil society networking for conflict recovery called the Mano River project funded by the United States Agency for International Development (USAID). Based in Accra, Ghana, under the auspices of Computer Frontiers International Ltd., the overall goal of the project is to ascertain how to improve regional sharing and exchanges of information among the dozen USAID partner civil society organizations (CSOs) in Guinea, Liberia, and Sierra Leone. All 12 CSO partners have received ICT equipment, local area network (LAN) and Internet systems installed and in use to ensure improved communication for conflict mitigation, peace consolidation, promotion of good governance and anti-corruption. A Web-base platform to generate statistics is currently being completed. The platform will allow tracking of E-mail as well as serve as a resource center for information generated and disseminated by all CSO partners (www.manoriver.org).

The Mano River project seeks to (a) improve intra- and inter-regional information sharing and exchange in MRU countries, (b) combine and leverage value-added information, and (c) create and increase organized information flow originating from NGOs in the MRU region. Its activities involve developing a plan to build capacity and internal usage of ICTs in business operations including identifying local and regional private sector resources available to sustain technical support for NGOs in each MRU country by describing the available resources. The ultimate goal is to assist each CSO partner to (a) build awareness regarding its own program information management practices and needs; (b) develop ICT strategies enabling it to identify and make use of available ICT opportunities to support program activities; (c) integrate fully ICT resources into its program and business management; and (d) plan, monitor, control and staff its ITC systems (www.manoriver.org). Although quite limited and being sponsored by an agency that has its own regional interests, lessons can be learned from this project. The MRU-clustering can benefit from the program's resource without succumbing to its interests.

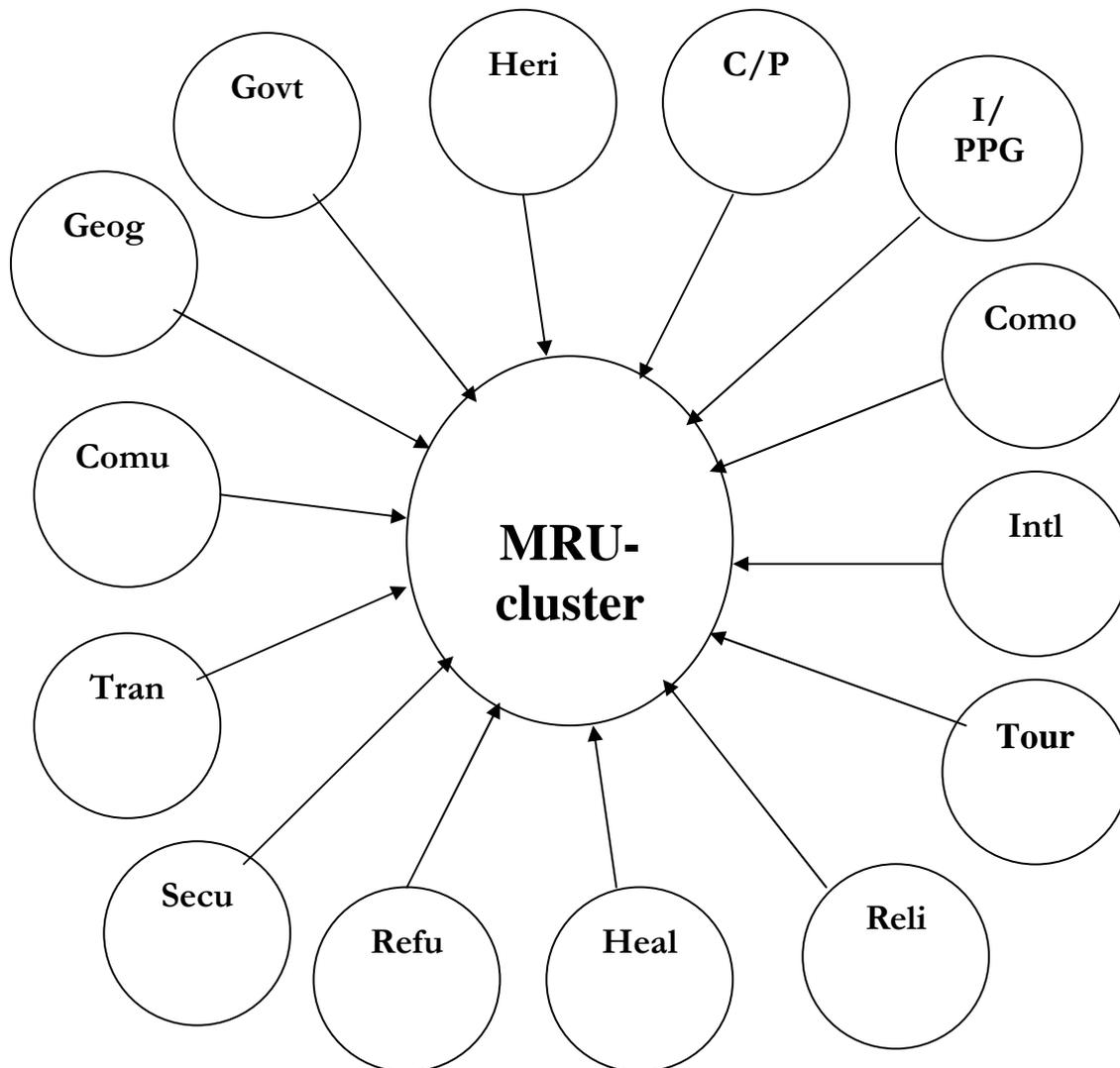


Figure 1: MRU-cluster

where Govt = government/administration, Geog = geographical, Heri = higher education and research institutes, C/P = customers/population, Como = commodities, I/PPG = interest/political pressure groups, Comu = communications, Secu = security, Tran = transportation, Intl = internationalization, Heal = health, Tour = tourism, Reli = religious, and Refu = refugees

Government/administration cluster

The type of government Côte d'Ivoire has is a republic, with the establishment of a multiparty presidential regime in 1960. The government is currently operating under a power-sharing agreement mandated by international mediators. The country has 19 administrative divisions and a constitution approved by referendum on July 23, 2000. Its legal system is based on the French civil law system and customary law. Judicial review is done by the Constitutional Chamber of the Supreme Court. Côte d'Ivoire accepts compulsory International Court of Justice (ICJ) jurisdiction, with reservations. Its executive branch comprises the chief of state/president, the head of

government/prime minister, and the cabinet/council of ministers appointed by the president. Under the current power-sharing agreement, the prime minister and the president share the authority to appoint ministers. The president is to be elected by popular vote for a five-year term, and there are no term limits. The last presidential election was held on October 26, 2000. The next one was scheduled to have been held on November 30, 2008; but like the one scheduled for 2005, it also was postponed by the government citing the country's political crisis. The United Nations Security Council has extended the government's mandate. Côte d'Ivoire's legislative branch is a unicameral National Assembly or *Assemblée Nationale* comprising 225 seats, whose members are to be elected in single- and multi-district elections by direct popular vote to serve five-year terms. Elections for the legislature were last held on December 10, 2000 with by-elections held on January 14, 2001. The next elections were scheduled to have been held several times; but like the presidential elections, they, too, were postponed in 2005 and again in 2006. The judicial branch is made up of a Supreme Court or *Cour Supreme* of four chambers: (1) Judicial Chamber for criminal cases, (2) Audit Chamber for financial cases, (3) Constitutional Chamber for judicial review cases, and (4) Administrative Chamber for civil cases. There is no legal limit to the number of members that can serve on these chambers. There are more than 144 registered political parties in Côte d'Ivoire. The major ones are Citizen's Democratic Party (UDCY), Democratic Party of Côte d'Ivoire (PDCI), Ivorian Popular Front (FPI), Opposition Movement of the Future (MFA), Rally of the Republicans (RDR), and Union for Democracy and Peace in Côte d'Ivoire (UDPCI) (USCIA, 2009).

Guinea also has a republic type of government. It has 33 administrative divisions and one special zone (*zone special*). Its constitution or *Loi Fondamentale* was enacted on December 23, 1990. Guinea's legal system, like that of Côte d'Ivoire, is based on the French civil law system, customary law, and decree. It also accepts compulsory ICJ jurisdiction with reservations. The executive branch likewise is made up of a chief of state/president, a head of government/prime minister, and a council of ministers appointed by the president. The president is to be elected by popular vote for a seven-year term, and there are no term limits. Candidates must receive a majority of the votes cast to be elected president. The last election was held on December 21, 2003; the next one is scheduled for December 2010. Guinea's legislative branch is comprised of a unicameral People's National Assembly or *Assemblée Nationale Polupaire*, which has 114 seats whose members are to be elected by a mixed system of direct popular vote and proportional party lists. The last legislative elections were held on June 30, 2002; the ones scheduled for 2007 were postponed by the government. The judiciary is composed of the Court of First Instance or *Tribunal de Premiere Instance*, the Court of Appeal or *Cour d'Appel*, and the Supreme Court or *Cour Supreme* (USCIA, 2009). There are more than 46 officially registered political parties in Guinea. The prominent ones are National Union for Progress (UPN), Party for Unity and Progress (PUP), People's Party of Guinea (PPG), Rally for the Guinean People (RPG), Union of Democratic Forces of Guinea (UFDG), Union of Republican Forces (UFR), Union for Progress of Guinea (UPG), and Union for Progress and Renewal (UPR) (*Africa South of the Sahara*, 2009).

Likewise, Liberia has a republic type of government. Its administrative divisions are comprised of 15 counties. The Liberian constitution was enacted on January 6, 1986. Its legal system is a dual one of statutory law based on Anglo-American common law for the modern sector and customary law based on unwritten ethnic practices for the indigenous sectors. Liberia, like Côte d'Ivoire and Guinea, also accepts compulsory ICJ jurisdiction with reservations. Its executive branch is made up of a chief of state/president, a head of government/also the president, and a cabinet appointed by the president and confirmed by the Senate. The president is to be elected by popular vote for a six-year term and eligible for a second term. Presidential election was last held on November 8, 2005, and the next one is scheduled for 2011. The legislative branch is composed of a bicameral national Assembly consisting of the Senate (30 seats) whose members are to be elected by popular vote to

serve nine-year terms and the House of Representatives (64 seats) whose members are also to be elected by popular vote but serve six-year terms. The judicial branch is comprised of the Supreme Court (USCIA, 2009). A total of 30 political parties were granted registration prior to presidential and legislative elections in October and November of 2006. Of these parties, the following six are the major ones: (1) Alliance for Peace and Democracy (APD), (2) Coalition for the Transformation of Liberia (COTOL), (3) Congress for Democratic Change (CDC), (4) Liberty Party (LP), (5) National Patriotic Party (NPP), and (6) Unity Party (UP) (*Africa South of the Sahara*, 2009).

Unlike the other three MRU states, Sierra Leone has a constitutional democracy type of government. It also has the least number of administrative areas: three provinces (Eastern, Northern, and Southern) and one area (Western). The Sierra Leone constitution was enacted on October 1, 1991 and has been subsequently amended several times. Its legal system is based on English law and customary laws indigenous to the various ethnic groups. Sierra Leone, unlike the other MRU member states, has not accepted compulsory ICJ jurisdiction. Its executive branch comprises a chief of state/president, a head of government/also the president, and a cabinet made up of ministers of state appointed by the president with the approval of the House of Representatives; the cabinet is responsible to the president. The president is elected by popular vote for a five-year term and eligible only for a second term. The last presidential election was held on August 11, 2007 and the run-off on September 8, 2007. The next presidential election is slated for 2012. The legislative branch is a unicameral Parliament of 124 seats of which 112 members are elected by popular vote and 12 are filled by paramount chiefs elected in separate elections; all are to serve five-year terms. The judiciary is made up of the Supreme Court, the Appeals Court, and the High Court (USCIAS, 2009). Numerous political parties were officially granted registration prior to elections in May of 2002. The major political parties, however, are All People's Congress (APC), Peace and Liberation Party (PLP), People's Movement for Democratic Change (PMDC), and Sierra Leone People's Party (SLPP) (*Africa South of the Sahara*, 2009).

In sum, the MRU states have the mechanisms for nurturing vibrant democratic governments. What is needed is a coordinated effort to discourage military and civil wars. This can be done by professionalizing the military and leaders striving to meet the basic human needs of the populace via a government/administration cluster.

Geographical cluster

As can be seen from Figure 2 (map), MRU countries are very well strategically located compared to those of many other West African regions. None is landlocked, as they all have access to the Atlantic Ocean. And as also shown in Table 1, the region is geographically very well endowed. A geographical cluster will make it possible for MRU states to benefit from their strategic geographical locations and endowments, particularly from major powers seeking such access.



Figure 2: Map of West Africa

Table 1: Selected Geographical Features of the MRU

Feature	Côte d'Ivoire	Guinea	Liberia	Sierra Leone
Geographic Coordinates	8 00 N, 5 00 W	11 00 N, 10 00 W	6 30 N, 9 30 W	8 30 N, 11 30 W
Area (in sq km)	Total: 322,460 Land: 318,000 Water: 4,460	Total: 245,857 Land: 245,857 Water: 0	Total: 111,370 Land: 96,320 Water: 15,050	Total: 71,740 Land: 71,620 Water: 120
Land Boundaries (in km)	Total: 3,110 Border countries: Burkina Faso 584, Ghana 668, Guinea 610, Liberia 716, Mali 532, coastline 515	Total: 3,399 Border countries: Côte d'Ivoire 610, Liberia 653, Mali 858, Senegal 330, Sierra Leone 652, Coastline 320	Total: 1,585 Border countries: Guinea 563, Côte d'Ivoire 716, Sierra Leone 306, Coastline 579	Total: 958 Border countries: Guinea 652, Liberia 306, Coastline 402
Maritime Claims (in nm)	Territorial sea: 12 Exclusive economic zone: 200 Continental shelf: 200	Territorial sea: 12 Exclusive economic zone: 200	Territorial sea: 12	Territorial sea: 12 Contiguous zone: 24 Exclusive economic zone: 200
Climate	Tropical along the coast, semiarid in far north; three seasons—warm	Generally hot and humid; monsoonal-type rainy season (June	Tropical; hot, humid; dry winters with hot days and cool to	Tropical; hot, humid; summer rainy season (May to December);

	and dry (November to March), hot and dry (March to May) hot and wet (June to October	to November) With southwesterly winds; dry season (December to May) with northeasterly harmattan winds	cold nights; wet, cloudy summers with frequent showers	winter dry season (December to April)
Terrain	Mostly flat to undulating plains; mountains in northwest	Generally flat coastal plain, hilly to mountainous interior	Mostly flat to rolling coastal plains rising to rolling plateau and low mountains in northeast	Coastal belt of mangrove swamps, wooded hill country, upland plateau, mountain in east
Elevation Extremes (in m)	Lowest point: Gulf of Guinea 0 Highest point: Mount Nimba 1,752	Lowest point: Atlantic Ocean 0 Highest point: Mount Nimba 1,752	Lowest point: Atlantic Ocean 0 Highest point: Mount Wuteve 1,380	Lowest point: Atlantic Ocean 0 Highest point: Loma Mansa (Bintimani) 1,948
Land Use	Arable land: 10.23% Permanent crops: 11.16% Other: 78.61%	Arable land: 4.47% Permanent crops: 2.64% Other: 92.89%	Arable land: 3.43% Permanent crops: 1.98% Other: 94.59%	Arable land: 7.95% Permanent crops: 1.05% Other: 91%
Irrigated Land (in sq km)	730	950	30	300
Total Renewable Water Resources (in cu km)	81	226	232	160
Freshwater Withdrawal	Total: 0.93 cu km/yr Per capita: 51 cu m/yr	Total: 1.51 cu km/yr Per capita: 161 cu m/yr	Total: 0.11 cu km/yr Per capita: 34 cu m/yr	Total: 0.38 cu Km/yr Per capita: 69 cu m/yr

Data Source: USCIA, 2009

Higher education and research institutes cluster

Côte d'Ivoire has four public and four private universities, and 26 other public and one private institutions of higher learning. The four public universities include the (1) National Polytechnic Institute Félix Houphouët-Boigny/Institut National Polytechnique Félix Houphouët-Boigny, with schools of agriculture, civil engineering, commerce and business administration, industrial technology, lifelong education and executive proficiency, and mines and geology; (2) University of Abobo-Adjamé/Université d'Abobo-Adjamé, with units of basic sciences, environment science and management, food technology, and higher education; programs in the natural sciences, mathematics and computer science; a health sciences preparatory school; a research institute; and centers of advanced training and ecology; (3) University of Bouaké/Université de Bouaké, with units of

communication; environmental and society; economics and development; higher education; law, administration and development; and medical sciences; and centers of development research and lifelong education; (4) University of Cocody/Université de Cocody, with units of bioscience; criminology; earth sciences and mining resources; economics and management; information, art and communication; languages, literature and civilizations; law, administration and political science; mankind and society; mathematics and computer science; medical sciences; odonto-stomatology; pharmaceutical sciences; and structure of matter and technology; an institute of mathematics; and centers of economic and social research, and lifelong education. The four private universities are (1) Catholic University of West Africa/University of Abidjan Unit/Université Catholique de l'Afrique de l'Ouest/Unité Universitaire d'Abidjan, with faculties of law, philosophy, and theology; a school of theological training for the lay; and higher institutes of Christian religious studies, communication studies, and pastoral studies; (2) Higher International School of Law/Ecole Supérieure Internationale de Droit, with a law department; (3) Ivory-Canadian University/Université Ivoir-Canadienne, with programs of business administration, communication-multimedia, and computer science; (4) University of the Atlantic/Université de l'Atlantique, with faculties of arts and humanities, economics and business administration, institute of higher professional studies, and law and political science. The 26 other public and one private institutions of higher learning offer programs in primary teacher education, administrative and diplomatic management, economics and financial management, magisterial and judicial studies, lifelong learning and executive retraining, police studies, communication, environment, fine arts, textile, statistics and applied economics, arts and humanities, educational sciences, history and geography, languages, science and technology, teacher training, mathematics, midwifery, nursing, technical studies, specialization, social work, pre-school teacher training, specialized teacher training, sports, youth studies, technology education, vocational education, advertising and marketing, audiovisual production, journalism, multimedia, and navigation studies (AAU, IAU/UESCO, 2007).

Guinea has two public universities and three other public institutions of higher education. The two public universities are (1) Julius Nyerere University of Kankan/Université Julius Nyerere de Kankan, with faculties of natural sciences and social sciences; (2) University of Conakry/Université de Conakry, with faculties of law, economics and management; letters and humanities; medicine and pharmacy; and science; a polytechnic institute; and centers for applied technology, computer science, English studies, environmental studies and research, French studies; and two university hospitals. The three other public institutions of higher education include (1) Higher Institute of Agriculture and Veterinary Medicine/Institut Supérieur Agronomique et Vétérinaire Valéry Giscard d'Estaing, with departments of agriculture, rural engineering, stockraising and veterinary medicine, and mater and forestry; (2) Higher Institute of Educational Sciences of Manéah/Institut Supérieur de l'Éducation de Manéah, with departments of continuing education and research, educational administration, educational sciences, teacher training, and teacher training education; (3) Higher Institute of Mining and Geology of Boké/Institut Supérieur des Mines et Géologie de Boké, with departments of geology, mining engineering, and technical and basic sciences (AAU, IAU/UESCO, 2007).

Liberia has one public university, one private university, and one other private institution of higher learning. The public university is the University of Liberia, with colleges of agriculture and forestry, business and public administration, medicine, science and technology, social sciences and humanities, and teacher training; a school of law; a department of lifelong education; and an African Studies and Research institute. The private university is the African Methodist Episcopal University, with colleges of Biyant theological seminary, business and public administration, and liberal arts and social sciences. The other private institution of higher learning is Cuttington University College, with

departments of education, humanities, nursing, science, and social sciences; and a rural development institute (AAU, IAU/UESCO, 2007).

Sierra Leone has the University of Sierra Leone, comprising three colleges, and seven other institutions of higher learning. The three colleges are (1) College of Medicine and Allied Health Sciences, with faculties of basic medical sciences, clinical sciences, and pharmaceutical sciences; (2) Fourah Bay College, with faculties of arts, engineering, pure and applied sciences, and social sciences and law; institutes of adult education and extramural studies; African studies; library, information and communication studies; marine biology and oceanography; and population studies; (3) Njala University College, with faculties of agriculture, education, and environmental sciences; centers of educational services and science curriculum development. Six of the seven other institutions of higher education are teachers' colleges scattered throughout the country offering teacher training and one technical institute in Freetown offering technology training (AAU, IAU/UESCO, 2007).

A higher education and research institutes cluster will promote inter-exchange, contact and cooperation among the MRU higher education institutions; collect, classify and disseminate information on higher education and research, particularly in the Mano region; promote cooperation among MRU institutions in curriculum development and in the determination of equivalent degrees; encourage increased contacts between MRU members and the international academic world; study and make known the educational and related needs of MRU institutions and, as far as possible, to coordinate the means whereby those needs may be met; encourage the development of wider use of MRU languages; and organize, encourage and support seminars and conferences among MRU faculty members, administrators and others dealing with problems of higher education in the region. In essence, this cluster will serve as the apex and principal means for consultation, exchange of information and cooperation among the universities and other higher education institutions in the MRU region.

Customers/population cluster

Côte d'Ivoire has an estimated population of 20,179,602, with a population growth rate of 2.156 percent. The age structure is 0-14 years = 40.9 percent (male 4,161,238/female 4,092,593), 15-64 years = 56.3 percent (male 5,790,503/female 5,568,621), and 65 years and over = 2.8 percent (male 285,116/female 281,532). The total median age is 19 years: male = 19.2 years, female = 18.9 years. The birth rate is 32.73 births per 1,000 and the death rate is 11.17 deaths per 1,000. The sex ratio at birth = 1.03 males/female, under 15 years = 1.02 males/female, 15-64 years = 1.04 males/female, 65 years and over = 1.01 males/female, and total population = 1.03 males/female (USCIA, 2008).

Guinea has an estimated population of 9,806,509, with a population growth rate of 2.492 percent. The age structure is 0-14 = 42.9 percent (male 2,126,575/female 2,080,048), 15-64 years = 53.7 percent (male 2,628,675/female 2,633,876), and 65 years and over = 3.4 percent (male 148,159/female 189,176). The total median age is 18.4 years: male = 18.2 years, female = 18.7 years. The birth rate is 37.84 births per 1,000 and the death rate 11.29 per 1,000. The sex ratio at birth = 1.03 males/female, under 15 years = 1.02 males/female, 15-64 years = 1 male/female, 65 years and over = 0.78 male/female, and total population = 1 male/female (USCIA, 2008).

Liberia has an estimated population of 3,334,587, with a population growth rate of 3.661 percent. The age structure is 0-14 = 44 percent (male 734,375/female 731,287), 15-64 years = 53.3 percent (male 879,848/female 896,319), and 65 years and over = 2.8 percent (male 45,175/female 47,583). The total median age is 18 years: male = 17.8 years, female = 18.2 years. The birth rate is 42.92 births per 1,000 and the death rate 21.45 per 1,000. The sex ratio at birth = 1.03 males/female, under 15 years = 1 male/female, 15-64 years = 0.98 male/female, 65 years and over = 0.99 male/female, and total population = 1 male/female (USCIA, 2008).

Sierra Leone has an estimated population of 6,294,774, with a population growth rate of 2.282 percent. The age structure is 0-14 = 44.6 percent (male 1,377,981/female 1,429,993), 15-64 years = 52.2 percent (male 1,573,990/female 1,708,840), and 65 years and over = 3.2 percent (male 94,359/female 109,611). The total median age is 17.5 years: male = 17.2 years, female = 17.8 years. The birth rate is 45.08 births per 1,000 and the death rate 22.26 per 1,000. The sex ratio at birth = 1.03 males/female, under 15 years = 0.96 male/female, 15-64 years = 0.92 male/female, 65 years and over = 0.94 male/female, and total population = 0.94 male/female (USCIA, 2008).

In sum, the MRU has a total estimated population of 39,615,472, with an average population growth rate of 2.634. A majority of the population is between the ages of less than one to 64 years. The average sex ratio is almost even for males and females. This cluster suggests an enormous economy of scale for entrepreneurs looking for potential consumers.

Commodities cluster

As illustrated in Table 2, MRU states produce many similar agricultural products and a small number of different ones as well. There is nonetheless a significant variation among them in terms of their industries.

Table 2: Commodities of the MRU

Commodity	Côte d'Ivoire	Guinea	Liberia	Sierra Leone
Agricultural Products	coffee, cocoa beans, bananas, palm kernels, corn, rice, cassava (manioc), sweet potatoes, sugar, rubber, timber	rice, coffee, pineapples, palm kernels, cassava (manioc), bananas, sweet potatoes, cattle, sheep, goats, timber	rubber, coffee, cocoa, rice, cassava (manioc), palm oil, sugarcane, bananas, sheep, goats, timber	rice, coffee, cocoa, palm kernels, palm oil, peanuts, poultry, cattle, sheep, pigs, fish
Industries	foodstuffs, beverages, wood products, oil refining, truck and bus assembly, textiles, fertilizer, building materials, electricity, ship construction and repair	bauxite, gold, diamonds, iron, alumina refining, light manufacturing, agricultural processing	rubber processing, palm oil processing, timber, diamonds	diamond mining, small-scale manufacturing (beverages, textiles, cigarettes, footwear), petroleum refining, small commercial ship repair
Proved Oil Reserves	100 million bbl	0 bbl	0 bbl	0 bbl
Provide Gas Reserves	28,32 billion cu m	0 cu m	0 cu m	0 cu m

Data Source: USCIA, 2009

From Table 2, it is quite evident that there is great potential for vibrant inter-regional trade. Unfortunately, with the exception of Sierra Leone for which Côte d'Ivoire and Guinea are among its principal trading partners, none of the other MRU states have other members among its principal trading partners (for the listings, see *Africa South of the Sahara*, 2009). A commodities cluster will help to reverse this situation and also allow MRU states to leverage for fair prices of their products.

Interest/political pressure groups cluster

The prominent interest/political pressure groups in the MRU states comprise those organized by students, labor organizers, peace activists, civil society organizers, and former military personnel. Côte d'Ivoire's major pressure groups include Federation of University and High School Students of Côte d'Ivoire (FESCI), Rally of Houphouistists for Democracy and Peace (RHDP), and Young Patriots. Guinea's major pressure groups are National Confederation of Guinean Workers-Labor Union of Guinean Workers (CNTG-USTG) Alliance, Labor Union of Guinean Workers (USTG), National Council of Civil Society Organizations of Guinea (CNOSCG), and Syndicate of Guinean Teachers and Researchers (SLECG). Liberia's major pressure group is comprised of demobilized former military officers. Sierra Leone's major pressure groups are student unions and trade unions (USCIA, 2009).

These interest/political pressure groups can learn from one another about how to support one another and effectively advance their causes peacefully. The governments in the region can also gain these groups' support in critical societal matters by soliciting their opinions on such matters via an interest/political pressure groups cluster.

Communications cluster

As can be seen from Table 3, the status of the communications media in the MRU is quite mixed. Mobile cellular telephones are becoming the major mode of communication in the region, albeit radio is still the most prevalent means of reaching the masses.

Table 3: Selected Communications Media in the MRU

Medium	Côte d'Ivoire	Guinea	Liberia	Sierra Leone
Telephones (main lines in use)	730,000	26,300	6,900	24,000
Telephone (mobile cellular)	2.05 million	189,000	563,000	776,000
Radio Broadcast Stations	AM 2, FM 9, Shortwave 3	AM 0, FM 5, Shortwave 3	AM 0, FM 10 Shortwave 2	AM 1, FM 9 Shortwave 1
Television Broadcast Stations	14	6	4 (plus 4 repeaters)	2
Internet Hosts	5,569	16	7	8
Internet Users	300,000	50,000	1,000	13,000
Television Receivers	887,000	351,000	N/A	N/A
Radio Receivers	2,260,000	380,000	N/A	1,120,000
Daily Newspapers	12	1	6	1
Non-daily Newspapers	15	17	6	16

Data Sources: *Africa South of the Sahara*, 2009; USCIA, 2009; Note: N/A = data not available

Côte d'Ivoire's telecommunications sector is well developed by African standards. This sector was privatized in the late 1990s, and operational fixed lines have more than quadrupled since that time. With multiple cellular service providers competing in the market, cellular usage has increased

sharply to roughly 40 per 100 persons. The domestic system comprises open-wire lines and a microwave relay, 90% of which is digitalized. Côte d'Ivoire is the landing point for the SAT-3/WASC fiber-optic submarine cable that provides connectivity to Europe and Asia, and is served by two Intelsat satellite earth stations: one in the Atlantic Ocean and one in the Indian Ocean. Guinea's telecommunications sector is characterized by an inadequate system of open-wire lines, small telephone communication stations, and a new microwave radio relay system. The capital Conakry is well served while coverage elsewhere remains inadequate, and large companies tend to rely on their own systems for nationwide links. Combined with fixed and mobile-cellular, teledensity is about two per 100 persons. Guinea is served by one Intelsat satellite earth station in the Atlantic Ocean. Liberia's limited services are found almost exclusively in the capital Monrovia. Coverage has been extended to other towns and rural areas by four mobile-cellular network operators. Liberia's domestic fixed line service is extremely limited, its mobile-cellular subscription base is growing, and its teledensity is approaching 20 per 100 persons. Liberia, like Guinea, is served by one Intelsat satellite earth station in the Atlantic Ocean. Sierra Leone's telecommunications sector is marginal. A national microwave radio relay trunk system connects Freetown to Bo and Kenema, and mobile-cellular service is growing rapidly from a small base. It also is served by one Intelsat satellite earth station in the Atlantic Ocean (USCIA, 2009).

By pooling their telecommunications resources via a communications cluster, the MRU states have a good chance to develop their telecommunications capacity, particularly because of Côte d'Ivoire's advances in this sector. They also are in a strong position to bargain for lower prices with bandwidth providers due to their overall teledensity. With the explosion of satellite technology, MRU countries are well poised to leapfrog the telecommunications impediments.

Security cluster

Côte d'Ivoire's active armed forces comprises an army of 6,500, a navy of about 900, an air force of 700, a paramilitary presidential guard of 1,350, and a gendarmerie of 7,600. There is also a 1,500-strong militia and 10,000 reserved forces. Military service is by selective conscription and lasts 18 months. France supplies equipment and training, and has increased its military presence in the country from 550 to some 3,800 troops in order to monitor and enforce the cease-fire agreed in October of 2002 between the Ivorian government and rebels of the Mouvement Patriotique de Côte d'Ivoire. The deployment by the Economic Community of West African States (ECOWAS) of a military mission (ECOMICI) commenced in Côte d'Ivoire in January of 2003; by August, about 1,300 ECOMICI troops of an authorized maximum of 3,411 had entered Côte d'Ivoire. In late February of 2004, the United Nations Security Council established the United Nations Operations in Côte d'Ivoire (UNOCI), with an authorized strength of 6,200 troops and an additional 1,500 added in November of 2004 following the deaths of nine French troops in an airstrike conducted by an Ivorian military aircraft. The entire Ivorian air force, consisting of two Sukhoi-25 warplanes and five helicopters, was destroyed on the ground by French retaliatory strikes. Later that month, the United Nations imposed a 13-month arms embargo on Côte d'Ivoire (*Africa South of the Sahara*, 2009). Côte d'Ivoire's military expenditures comprise 1.6% of its gross domestic product (GDP) (USCIA, 2009).

Côte d'Ivoire is on the Tier 2 Watch List for its failure to provide evidence of increasing efforts to eliminate trafficking in 2007, particularly with regard to its law enforcement efforts and protection of sex trafficking victims. In addition, the country's law does not prohibit all forms of trafficking, and it has not ratified the 2000 United Nations Trafficking in People (TIP) Protocol. Côte d'Ivoire is considered an illicit producer of cannabis, mostly for local consumption; a utility as a narcotic transshipment point to Europe which has been reduced by the ongoing political instability in the country; rampant corruption and inadequate supervision leave the banking system vulnerable to

money laundering. The lack of a developed financial system, however, limits the country's utility as a major money-laundering center (USCIA, 2009).

Guinea's active armed forces number 9,700, made up of an army of 8,500, a navy of 400, and an air force of 800. Paramilitary forces make up a republican guard of 1,600 and a 1,000-strong gendarmerie, in addition to a reserve people's militia of 7,000. Military service is compulsory, with conscripts estimated at about 7,500 in 2001, and lasts for two years (*Africa South of the Sahara*, 2009).

Like Côte d'Ivoire, Guinea is also on the Tier 2 Watch List for its failure to provide evidence of increasing efforts to eliminate trafficking in 2006. It demonstrated minimal law enforcement efforts for a second year in a row, while protection efforts in 2007 diminished compared to those in 2006. The government reported no trafficking convictions in 2007, it provided no shelter services for trafficking victims due to a lack of resources, and it took no measures to reduce the demand for commercial sexual exploitation (USCIA, 2009). Guinea's military expenditures comprise 1.7% of its GDP (USCIA, 2009).

Following a major rebel offensive against the Liberian capital, Monrovia, in June of 2003, the United Nations Security Council on August 1 authorized the establishment of an Economic Community of West African States (ECOWAS) peacekeeping contingent, the ECOWAS Mission in Liberia (ECOMIL), which was to restore security and prepare for the deployment of a longer-term United Nations stabilization force. The United Nations Mission in Liberia (UNMIL), which was officially established on September 19 and replaced ECOMIL on October 1, was mandated to support the implementation of a comprehensive peace agreement and a two-year transition administration. At the end of 2007, UNMIL numbered 13,335 troops, 199 military observers, 1,183 civilian police, supported by 502 international civilian personnel, 945 local staff and 245 United Nations volunteers. Following the completion of the disarmament program in January of 2005, a United States military commission arrived in Liberia to assist in the restructuring of the armed forces, and a 3,500-member police force was trained by UNMIL (*Africa South of the Sahara*, 2009).

Liberia is considered a transshipment point for Southeast and Southwest Asian heroin and South American cocaine for the European and United States illicit drug markets. Corruption, criminal activity, arms-dealing, and diamond trade provide significant potential for money laundering; but, like Côte d'Ivoire, the lack of a well-developed financial system limits the country's utility as a major money-laundering center (USCIA, 2009).

The armed forces of the Republic of Sierra Leone number approximately 110,500, with a navy of 200. In October of 1999, the United Nations Security Council adopted a resolution establishing the United Nations Mission in Sierra Leone (UNAMSIL), which was to supervise the implementation of a peace agreement between the government and the rebel forces signed in July of that year. Following the completion of disarmament in January of 2002, a new army, restructured with British military assistance, was established. The mandate of UNAMSIL ended at the end of 2005. Following a United Nations Security Council resolution in August, the United Nations Integrated Office in Sierra Leone (UNIOSIL) was established in the capital, Freetown, on January 1, 2006, for an initial period of one year, extended in December until the end of 2007. In December of that year, UNIOSIL's mandate was extended for a further 12 months. UNIOSIL is mandated to support state institutions and strengthen security in the country, and has 274 local and international staff and 24 United Nations volunteers (*Africa South of the Sahara*, 2009). Sierra Leone's military expenditures comprise 2.3% of its GDP (USCIA, 2009).

Sierra Leone considers excessive Guinea's definition of the flood plain limits to define the left bank boundary of the Makona and Moa rivers. Consequently, Sierra Leone continues to protest Guinea's continued occupation of these lands including the hamlet of Yenga occupied since 1998 (USCIA, 2009).

In sum, tremendous international support has been provided to the MRU region to develop and enhance its security capacity. As it is a well observed truism in international relations, however, the security of any nation or region hinges mostly upon that state's or region's own capabilities. The MRU states already have plenty of troops and an adequate amount of other military resources. What is needed is a coordinated strategy via a security cluster to keep the region secure and stable.

Transportation cluster

Côte d'Ivoire possesses 34 airports. Of these, seven have paved runways. It has a 102 km condensate, a 245 km gas and 112 km oil pipelines. It has railways totaling 660 km and an additional 622 km that extends into Burkina Faso. Its roadways total 80,000 km (6,500 km is paved and 73,500 km is unpaved); another 20,000 km of dirt roads are in poor condition and 150,000 km of dirt roads are impassable. Its waterways total 98 km of navigable rivers, canals, and numerous coastal lagoons. It also has three ports in Abidjan, Espoir, and San-Pedro. Guinea has 16 airports. Of these, five have paved runways. It has railways totaling 837 km. Its roadways total 44,248 km: 4,342 km is paved and 40,006 km is unpaved. Its waterways total 1,300 km navigable by shallow-draft native craft. It also has two ports in Conakry and Kamsar. Liberia has 53 airports. Of these, only two have paved runways. It has railways totaling 490 km. Its roadways total 10,600 km: 657 km is paved and 9,943 km is unpaved. Its merchant marine totals 2,204. It also has two ports in Buchanan and Monrovia. Sierra Leone possesses 10 airports. Of these, only one has a paved runway. It has two heliports. Its roadways total 11,300 km: 904 km is paved and 10,396 km is unpaved. Its waterways total 800 km (600 km year round). It also has three ports in Freetown, Pepel, and Sherbro Islands (USCIA, 2009).

There is no question that for the MRU states to benefit from intra-country and inter-regional trade, they must invest in their roads and transportation sectors. Efforts must be made through a transportation cluster to connect the transportation networks of all four countries to entice investors looking for economies of scale and to also boost inter-regional tourism.

Internationalization cluster

Côte d'Ivoire is a member of 52 international organizations such as the United Nations, the African Union, etc.; Guinea is a member of 48; Liberia is a member of 40; and Sierra Leone is a member of 44. The four MRU states are members of 38 of the same international organizations (USCIA, 2009). A unified agenda in these organizations will give the MRU states significant leverage in pursuing their regional interests. These countries also have embassies in many of the same countries (for listings of these countries, see *Africa South of the Sahara*, 2009). A careful consolidation of their diplomatic missions and services can save them tremendous amounts of money.

Despite the presence of over 9,000 United Nations Operation in Côte d'Ivoire (UNOCI) forces in the country since 2004, ethnic conflict still leaves displaced hundreds of thousands of Ivoirians in and out of the country as well as driven out migrants from neighboring states who worked in Ivorian cocoa plantations. The March 2007 peace deal between Ivorian rebels and the government brought significant numbers of rebels out of hiding in neighboring countries. Conflicts among rebel groups, warlords, and youth gangs in neighboring countries have spilled over into Guinea, resulting in domestic instability. As mentioned earlier, Sierra Leone considers Guinea's definition of the flood plain limits to define the left bank boundary of the Makona and Moa rivers excessive and protests Guinea's continued occupation of these lands, including the hamlet of Yenga, since 1998. Although civil unrest continues to abate with the assistance of 18,000 United Nations Mission in Liberia (UNMIL) peacekeepers, as of January 2007, Liberian refugees still remain in Guinea, Côte d'Ivoire, Sierra Leone, and Ghana. Liberia, in turn, shelters refugees fleeing turmoil in Côte d'Ivoire. United

Nations sanctions ban Liberia from exporting diamonds and timber. As domestic fighting among disparate ethnic groups, rebel groups, warlords, and youth gangs in Côte d'Ivoire, Guinea, Liberia, and Sierra Leone gradually abate, the number of refugees in border areas has begun to slowly dwindle. The United Nations Mission in Sierra Leone (UNAMSIL) has maintained over 4,000 peacekeepers in Sierra Leone since 1999 (USCIA, 2009).

What all this suggests is that MRU states have benefited from the international community's assistance in helping to resolve conflicts in the region. They have also served as staging grounds for one another's conflicts. A concerted effort among the four states through an internationalization cluster can help to minimize the potential for such conflicts and to better coordinate the goodwill of the international community.

Refugees cluster

Côte d'Ivoire has 25,615 refugees from Liberia and 709,000 internally displaced persons (IDPs), most of who are in the western region. Guinea has 21,856 refugees from Liberia, 5,259 refugees from Sierra Leone, 3,900 refugees from Côte d'Ivoire, and 19,000 IDPs from cross-border incursions from Côte d'Ivoire, Liberia, and Sierra Leone. Liberia has 12,600 refugees from Côte d'Ivoire and 13,000 IDPs. Its IDP resettlement program began in November of 2004. Sierra Leone has 27,311 refugees from Liberia (USCIA, 2009).

Serious negotiations on how to deal with the refugee situation among the MRU states is necessary through a refugees cluster. Of particular importance is developing modalities on how to accommodate the desire of those refugees who have found their new environments more hospitable and would prefer to stay there.

Health cluster

The life expectancy rate in Côte d'Ivoire for the total population is 54.64 years; it is 53.95 years for males and 55.35 years for females. The death rate is 11.17 deaths per 1,000 persons, and the infant mortality rate is 69.76 deaths per 1,000 live births total; 77.06 deaths per 1,000 for males and 62.25 deaths per 1,000 for females. The total fertility rate is 4.23 children born per woman. The HIV/AIDS adult prevalence rate is 7%, with an estimated 570,000 people living with the virus. The major infectious diseases are food or waterborne diseases (bacterial diarrhea, hepatitis A, and typhoid fever), vectorborne diseases (malaria and yellow fever), water contact disease (schistosomiasis), and animal contact disease (rabies). A highly pathogenic H5N1 variant influenza has been identified in the country. It poses a negligible risk with extremely rare cases among United States citizens who have close contact with birds (USCIA, 2009).

Guinea's life expectancy rate for the total population is 56.58 years; it is 55.12 years for males and 58.08 years for females. The death rate is 11.29 deaths per 1,000 persons, and the infant mortality rate is 67.41 deaths per 1,000 live births total; 71.02 deaths per 1,000 for males and 63.69 deaths per 1,000 for females. The total fertility rate is 5.25 children born per woman. The HIV/AIDS adult prevalence rate is 3.2%, with an estimated 140,000 people living with the virus. The major infectious diseases are food or waterborne diseases (bacterial and protozoal diarrhea, hepatitis A, and typhoid fever), vectorborne diseases (malaria and yellow fever), water contact disease (schistosomiasis), respiratory disease (meningococcal meningitis), and aerosolized dust or soil contact disease (Lassa fever) (USCIA, 2009).

Life expectancy rate in Liberia for the total population is 41.13 years; it is 39.85 years for males and 42.46 years for females. The death rate is 21.45 deaths per 1,000 persons, and the infant mortality rate is 143.89 deaths per 1,000 live births total; 159.5 deaths per 1,000 for males and 127.81

deaths per 1,000 for females. The total fertility rate is 5.87 children born per woman. The HIV/AIDS adult prevalence rate is 5.9%, with an estimated 100,000 people living with the virus. The major infectious diseases comprise food or waterborne diseases (bacterial and protozoal diarrhea, hepatitis A, and typhoid fever), vectorborne diseases (malaria and yellow fever), water contact disease (schistosomiasis), animal contact disease (rabies), and aerosolized dust or soil contact disease (Lassa fever) (USCIA, 2009).

Sierra Leone's life expectancy rate for the total population is 40.93 years; it is 38.64 years for males and 43.28 years for females. The death rate is 22.26 deaths per 1,000 persons, and the infant mortality rate is 156.48 deaths per 1,000 live births total; 173.59 deaths per 1,000 for males and 138.85 deaths per 1,000 for females. The total fertility rate is 5.95 children born per woman. The HIV/AIDS adult prevalence rate is 7%, with an estimated 170,000 people living with the virus. The major infectious diseases are food or waterborne diseases (bacterial and protozoal diarrhea, hepatitis A, and typhoid fever), vectorborne diseases (malaria and yellow fever), water contact disease (schistosomiasis), and aerosolized dust or soil contact disease (Lassa fever) (USCIA, 2009).

Evident from the preceding data is that all four MRU countries face serious health challenges. With very few exceptions, citizens of the countries are being infected by the same diseases, most of which are now curable. The Women tend to have many children out of fear that some of their children will not live past their first birthdays. Women also tend to live a bit longer than men.

Despite the challenging health problems, all four countries spend relatively little on healthcare: Côte d'Ivoire spends \$63 per head; Guinea, \$110 per head; Liberia, \$41 per head; Sierra Leone, \$41 per head. Thus, it is not surprising that these countries rank among the lowest in the world in terms of the Human Development Index: Côte d'Ivoire, 166 out of 177; Guinea, 160; Liberia, not available; Sierra Leone, 177 or last (*Africa South of the Sahara*, 2009). Given the fact that the health systems of all four countries are impacted by the same diseases, pooling their resources and their scientists engaging in serious collaborative research via a health cluster can help the MRU states find cures for and effectively combat these diseases.

Tourism cluster

The number of tourists that arrive in Côte d'Ivoire each year averages about 301,000. Of the 17 noteworthy countries whose tourists visit Côte d'Ivoire, only Guinea is a MRU member state. Receipts from tourism for Côte d'Ivoire average \$300 million per year. The tourist attractions comprise game reserves, forests, lagoons, coastal resorts, rich ethnic folklore, and the lively city of Abidjan. Côte d'Ivoire also has well-developed facilities for business visitors, including golfing centers (*Africa South of the Sahara*, 2009).

Guinea receives an average of 45,000 foreign visitors per year. Of the ten noteworthy countries whose citizens visit Guinea, two MRU member states are among them: Côte d'Ivoire and Sierra Leone. Receipts from tourism for Guinea average \$30 million a year (*Africa South of the Sahara*, 2009).

Liberia's natural assets, especially its beaches and the Sapo National park and other areas of primary tropical rainforest, have the potential to support a lucrative beach-based and eco-tourism industry. No such industry has ever been developed in Liberia, however, and tourism has been in total abeyance since 1990 due to the almost continuous civil conflict. The development of Liberia's tourist potential will remain hampered by high levels of violent crime and a tourism infrastructure which remains meager or lacking (*Africa South of the Sahara*, 2009).

The number of tourists that arrive in Sierra Leone each year averages about 40,000 and tourism receipts average about \$64 million per annum. The main tourist attractions in Sierra Leone are the coastline, mountains, and the game reserves. Civil conflict throughout most of the 1990s effectively

suspended tourist activity in the country. By 2006, however, tourist arrivals had increased to 40,023, compared with 10,615 in 1999 (*Africa South of the Sahara*, 2009).

It is quite evident from the preceding discussion and that on the geographical cluster that the MRU has a great potential for joint beach-based and an eco-tourism industries that will be very lucrative. Through a tourism cluster, well advertised cross-country tours in a peaceful and safe environment will attract many tourists to the region.

Religious cluster

Côte d'Ivoire's population is 38.6% Muslim, 32.8% Christian, 11.9% indigenous religions, and 16.7% non adherents. Also, the majority of foreigners, mostly migratory workers, are Muslim (70%) and Christian (20%). Guinea's population is 85% Muslim, 8% Christian, and 7% indigenous religions. Liberia's population is 40% Christian, 20% Muslim, and 40% indigenous religions. And Sierra Leone's population is 60% Muslim, 10% Christian, and 30% indigenous religions (USCIA, 2009). In sum, Muslims comprise the majority of the religious adherents in the MRU, followed closely by Christians and practitioners of indigenous religions.

There also exist many religious organizations in the MRU, comprising Islamic, Christian (Roman Catholic and Protestant) and indigenous ones. The constitutions of all four countries guarantee religious freedom, and this right is generally respected. Religious groups are required to register with the authorities, albeit no penalties are imposed on a group that fails to register (*Africa South of the Sahara*, 2009).

The multiplicity of religious views and the very large numbers of Muslims and Christians call for concerted efforts through a religious cluster to get all citizens to respect indigenous religions and to expose them to the connections between the Abrahamic faiths. Such efforts will help to prevent religious conflicts that beseech a country like Nigeria.

Conclusion

That a comprehensive and balanced cluster is required to expand the potentials of the regional development and competitiveness of MRU member states in the global market is hardly a matter of dispute. Thus, the process orientation and the application of times-technologies are the key factors for the development of an MRU E-cluster and for the realization of the innovation and growth objectives of the cluster.

To optimize the strategic process in an MRU E-cluster, the participation of all four member states is imperative. The determination of the vision, mission and strategy in particular requires the process of participation. From the cluster strategy, individual strategies and balanced scorecards of the various clusters can be deduced. The strategic network of all actors will decisively improve the competitiveness of an MRU E-cluster.

Indeed, an important issue in the implementation process of innovative actions is the existence of innovation management of tools necessary to support the innovation process from the generation of ideas to launching successful ventures throughout the innovation life cycle. The availability of regional innovation infrastructure and support tools becomes a crucial factor for the deployment of innovative actions in the MRU region. This action line will provide the necessary tools and methods needed to enhance the regional innovation capacity and the networking interoperability. These goals and tools should be widely and freely available to all regional actors using Internet technologies. The collective effort will take the form of a portal for innovation management, concentrated in supporting innovation actions.

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