

**Desertification Nation:
Echoes of French Colonialism in Senegal During Times
of Water Shortage**

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Desertification Nation: Echoes of French Colonialism in Senegal During Times of Water Shortage

Abstract

How have colonial practices and infrastructure contributed to current discourses around desertification? How did the development of French colonial infrastructure change the perceptions of water distribution during times of water scarcity in postcolonial Senegal? This paper argues that French colonial officers have played a central role in the implementation and distribution of drinking water infrastructure in Senegal during colonial and postcolonial times. French colonists established water infrastructure to improve their living conditions and economic efficiency. Access to infrastructure segregated the French from the Senegalese in Dakar from the mid 1800s to 1960. The French education system provided for the Senegalese eventually created a class of African elites. After Independence in 1960, the dynamics between colonizers and the colonized populations persisted between elite and poor Senegalese. This dichotomy of access between classes as a result of colonial precedents is most evident during times of water shortage within Senegal. Senegalese lower class efforts to understand drought reflect their distrust of governmental bodies that began during colonialism. Scientifically, drought is explained by the combination of anthropogenic and natural forces. Desertification, the permanence of drought, has been perceived by groups of Senegalese as a misallocation of resources by the French. The emphasis of one cause for desertification over the other depends on the perspective and invested interest of stakeholders. French neocolonial desires, expressed by the former French president Nicolas Sarkozy in 2007, are masked by the pretense of providing developmental aid. Distrust of the French presence within Senegal is linked to unequal access of resources, as expressed in the Senegalese book *Cycle de Sécheresse* (Cycles of Drought). Times of water shortage display the access inequality that fuels the distrust between colonized populations and former colonizers.

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Introduction

“Oh ! mer prodige, comme tu es forte,
Oh ! mer, comme tu sais bouger,
comme ton mouvement est majestueux.
Mais tu sais pourtant, mer, Que ce qui te fait bouger
Est beaucoup plus fort que toi ! ”

“Oh ! Marvelous sea, how you are strong,
Oh ! Sea, how you know how to move,
how your movement is majestic.
But yet you know, sea, that what moves you
is stronger than you”¹

The above is a traditional fishing song from Senegal that expresses reverence for the expansive ocean, and above all, for God. The ocean influences security in water, food, and shelter. In the opinion of many Senegalese, God influences the ocean. As will be discussed in this thesis, while the ocean and God provide explanations for individuals in the face of climatic disasters, the issues are complex and involve natural explanations as well as government interference. The discourses that particular populations use to describe causes of water shortage in Senegal are, in part, tied to social dynamics that started during French colonization. This paper will trace the development of water infrastructure in the Sahelian region of West Africa that began during French colonial history and continued to the present.

This paper addresses the various explanations for drought held by different subcultures within the Sahelian region through a historical lens. The dialect that surrounds water shortage in the Sahel is dependent on the access and understanding of drinking water infrastructure. The cause of drought in the Sahel is a combination of climatic and human patterns. As will be

¹ Cheikh C. Sow, *Cycle de sécheresse*. Collection Monde noir poche ; 17. (Paris: Hatier, 1983), 17.

discussed, the duality of natural and anthropogenic forces within the 20th century has changed the landscape of the Sahel, as shown by climatic reports done by the IPCC on desertification. The definition of desertification, or ongoing drought, is "land degradation in arid, semi-arid, and dry sub-humid areas resulting from various factors, including climatic variations and human activities."² Senegal's increased aridity has prevented the growth of water-needy crops that are part of the cultural history and necessary food products within the country. During these periods of drought, the Sahel has depended on support from international sources, especially France, to lessen the number of people without food and water.

Foreign food and water aid has exposed class tensions within Senegal due to power dynamics of distribution that began during French colonial rule. This paper will address the affect these dynamics have had on access to infrastructure. The French implemented water infrastructure during colonial rule for agricultural reasons as well as increasing living conditions in their neighborhoods of Dakar. The infrastructure was expanded in a way that benefited the French personal and economic pursuits, but was not sustainable to support the entire population living in Senegal. After independence, the dynamic of access continued. The "Frenchified" Senegalese were given power similar to the French colonist, while the lower classes were left without access to water, education or medical infrastructure. During times of drought, this tension between classes is most apparent.

This thesis will analyze colonial incursions in West Africa and hone in on French colonization. It will follow the history of French colonization in Senegal through independence with a focus on aforementioned tensions in Senegal during times of water shortage. The

² IPCC, 2007: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 10.2.6 Desertification [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

subsections will provide context via sociological concepts such as colonialism and postcolonialism, geological conditions such as aridity and desertification, and chronicle the population's response to climate changes within Senegal.

Two specific instances of water shortage in Senegal will be used as cross sections of interactions between French aid and Senegalese lower classes. The first is the drought of the 1970s that caused widespread famine, population loss and a need for international aid within the Sahelian region. The second explores the 2013 pipeline break that left the Senegalese capital of Dakar without water for up to two months.

The case studies serve as lenses to frame desertification narratives within Senegal and to show how water distribution has been affected by French neocolonialism. This thesis will use cultural timepieces to capture the opinions of French-Senegalese interactions. The former French president Nicolas Sarkozy's speech delivered in Dakar in 2007 displays the tension that is present between the former colonial power and the Senegalese. Sarkozy's speech was highly controversial for the claims that it made about the lack of development of Africa, as well as the desire for France to be a part of West Africa's future success. This speech provides an example of the ideal neocolonial relationship that France hopes to maintain in Senegal. The Senegalese book *Cycle de Sécheresse*, *Cycles of Drought*, gives insight to the various Senegalese opinions on neocolonialism. This book offers a voice to the unrepresented Senegalese during the 1970s droughts. Furthermore, it portrays the dynamics between traditional Senegalese culture, postcolonial Senegalese culture, and foreign influences. Interviews that the author conducted during her time in Senegal in 2014 provide the final section on narratives of French-Senegalese dynamics. These interviews include history professor Ibou Diallo, author Cheikh Sow of *Cycle de Sécheresse*, and a water treatment director for French water company Sénégalaise des Eaux.

In summary, the French colonial legacy of social and political power dynamics has played an instrumental role in shaping the development and access to water infrastructure in Senegal. Postcolonial relations between Senegal and France are most evident when the French government provides aid during times of water shortage. This paper will present the opinions on the French-Senegalese relationships through media, literature and select opinions. The history of human interactions within the Sahel paired with climatic data presented in this paper will ultimately prove the duality of human and non-human factors contributing to desertification

Drought Patterns In Arid Countries

Desertification and Vulnerability

Desertification is defined by the United Nations Convention to Combat Desertification (UNCCD) as "land degradation in arid, semi-arid, and dry subhumid areas resulting from various factors, including climatic variations and human activities." Drylands are defined "as areas in which the ratio between precipitation and evapotranspiration is less than 0.75. Drylands cover as much as 47% of the world and are home to over one billion people."³

The cause of desertification is a combination of natural occurrences such as drought and human pressures such as overuse of resources from agriculture or livestock needs. As a result of the two factors, land becomes less productive. Land degradation, in this context, is defined as "reduction or loss, in arid, semi-arid, and dry subhumid areas, of the biological or economic productivity and complexity of rain-fed cropland, irrigated cropland, or range, pasture, forest, and woodlands resulting from land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns, such as: (i) soil erosion caused by wind and/or water; (ii) deterioration of the physical, chemical, and biological or economic properties of soil; and (iii) long-term loss of natural vegetation."⁴ An area classified as arid, semi arid or dry subhumid has a ratio of potential evaporation to precipitation between 0.05 to 0.65. There is great debate as to the relative importance of anthropogenic and climatic factors that contribute to desertification, though both are undeniably factors.⁵

³ "Desertification, Land Degradation and Drought: Sustainable Development Knowledge Platform." Accessed November 30, 2014.

<https://sustainabledevelopment.un.org/topics/desertificationlanddegradationanddrought>.

⁴ IPCC, "10.2.6 Desertification" 2014

Desertification Vulnerability

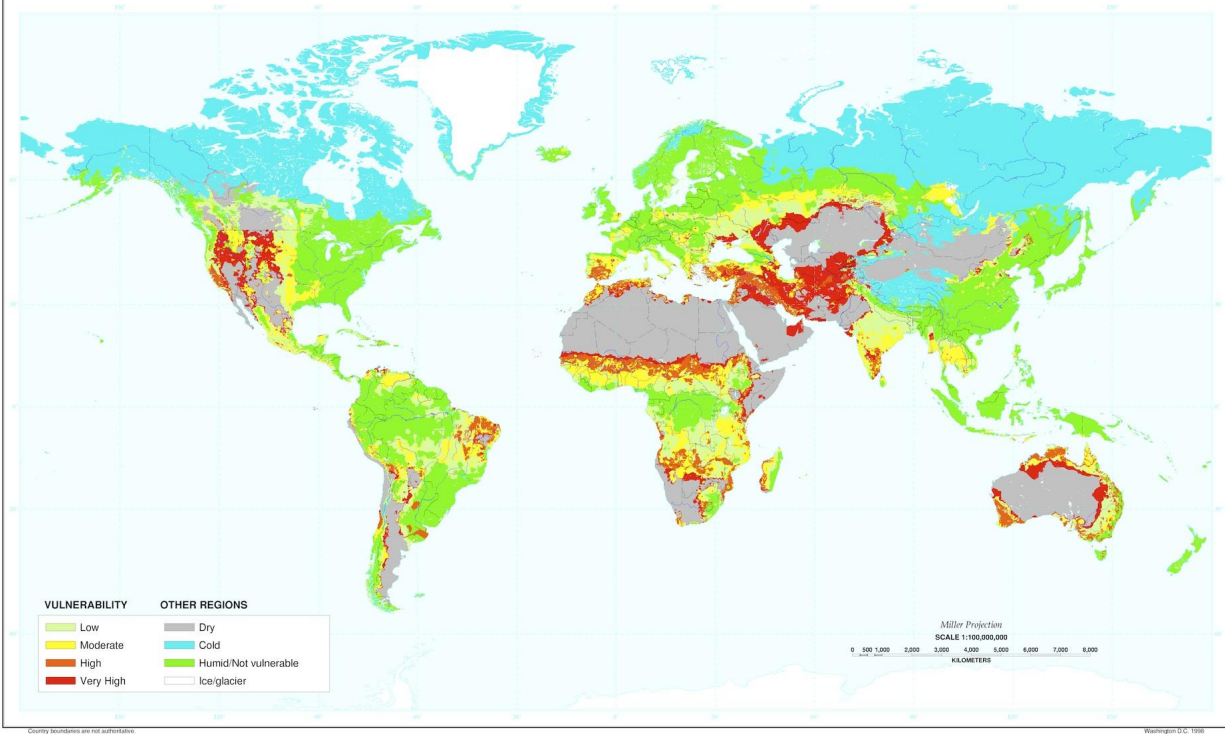


Figure 1. Global Desertification Vulnerability Map as defined by the USDA in Natural Resources Conservation Service in the Soil Survey Division of World Soil Resources in 1998.

As shown in Figure 1, there are areas that are classified as dry and there are other areas at risk for becoming drier. The legend has a scale of 1:100,000,000, distances are shown in kilometers. The graph is defined by vulnerability to desertification on a scale of low to very high. Low is a light green, moderate is yellow, high is orange, and very high is red. It also determines other regions that are not experiencing desertification. Dry regions are shown in grey, cold regions in light blue, humid/non vulnerable regions in bright green, and ice/glacier in white. The primary areas that are at high risk are the western U.S., Northern and Central Africa, China, Thailand and Australia. There is a correlation between areas that have a very high risk of desertification and areas that are already dry. Dry land may be permanently changed to desert in a future scenario of increasing temperature.

The definition of arid land applies to 43% of Africa's land area in which 40% of the continent's population lives. A non climatic force behind desertification includes unsustainable agricultural practices in which there is too short of a rotation of crops, unregulated use of fire and limited crop residue. Permanent removal of closed-canopy forests and trees that grow outside of forests can lead to desertification as well as over grazing. Overgrazing is defined as using fields for too many livestock in too short of rotations so that the ecosystem is unable to regenerate. United Nations Environmental Programme (UNEP) has determined that one third of the desertified areas worldwide are a result of unsustainable agricultural and forest practices.⁶

Figure 2, shown below, was made by the United States Department of Agriculture (USDA) and is based on global soil data.⁷ The areas that have shown changes in hydrology strongly affected by climate change for drought and food production in Figure 2 relate to the areas in Figure 1 of desertification vulnerability. These areas also correspond to changes in terrestrial ecosystems such as deforestation, one of the contributing factors of desertification. The observed impacts range in their causes from deforestation (a human induced event) to glacier melt (anthropogenic and cyclic causes). Figures 1 and 2 define the most at risk areas globally of desertification and the vulnerabilities that those changes will exacerbate.

⁶ "Desertification, Land Degradation and Drought: Sustainable Development Knowledge Platform." Accessed November 30, 2014.

⁷ United States Department of Agriculture. "Global Desertification Vulnerability Map." Natural Resources Conservation Service Soils. September 8, 2003. Accessed November 11, 2014.

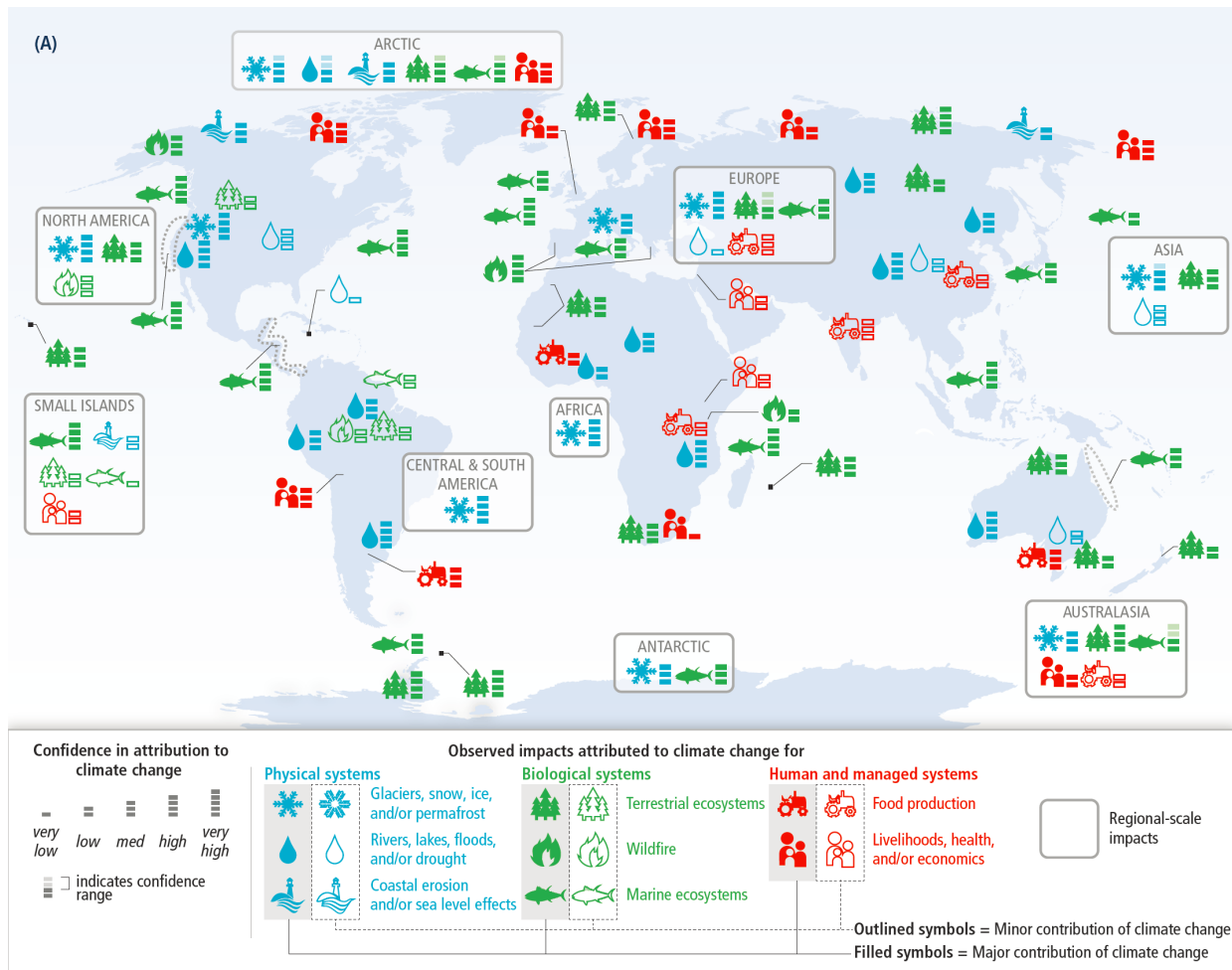


Figure 2. This figure shows global climate change impacts that have been observed since the 2007 IPCC report. Filled symbols represent region-scale impacts that climate change has played a major role in changing. The bars next to the symbols indicate the level of confidence for the attribution of the change to climate change. The outlined symbols reflect regional-scale impacts that have been affected by climate change to a lesser extent. The bars next to the outlined symbols show the level of confidence in the correlation. The areas of observed change range in size from a specific location to a river basin. The impacts on physical systems are colored blue, biological systems green, and human systems red.⁸

⁸ IPCC, “10.2.6 Desertification” 2014

Drought solutions in arid countries

Arid countries worldwide are facing problems when grappling with the many manifestations of climate change and drought. Governments have implemented a host of different techniques for managing water and drought. For example, since 2000 the Western US has been experiencing drought conditions that are marked by years of particular severity. Dry western states have managed drought conditions by pumping groundwater, constructing dams and reducing water needy crops such as lawns. Many climate change adaptations depend on technological innovations. One example is cottonseeds that are made to grow in semiarid climates.⁹ These genetically modified cottonseeds, called FiberMax, were initially developed in Australia by Bayer and have become one of the nation's leading cotton brands. The Department of Water Resources within the western states is encouraging farmers to move away from irrigated agriculture, although the vast majority of crops are still irrigated.¹⁰ There is tension within the arid states between urban growth and agriculture. Much of the development of American cities such as Phoenix, Tucson, and Las Vegas depend on water diversion from nearby rivers, such as the Colorado River.¹¹

As the current drought intensifies in California, this tension between urban growth and agriculture is evident in the removal of water allocation or farmers for the first time in US history. The large energy-intensive irrigation systems may have to shift because of their dependence on snowpack and rain. These dry trends, called "a new mega-drought" often occur in cyclic patterns. An atypically wet period, such as the 20th century, can serve as an indicator of drought that is to

⁹ "Why Cotton Matters to Us." Cotton. Accessed March 20, 2015.

<http://www.cropscience.bayer.com/en/Products-and-Innovation/Key-Crops/Cotton.aspx>

¹⁰ Eric Holthaus. "Welcome to the Thirsty West." *Slate*, March 6, 2014.

http://www.slate.com/articles/technology/future_tense/2014/03/drought_crisis_arizona_may_be_california_s_future.html.

¹¹ Eric Holthaus. "Welcome to the Thirsty West."

follow in many arid areas. This prediction for higher temperatures, less rainfall, and more people in many arid areas calls into question current practices and motivates innovations to lessen water use.¹²

In other arid parts of the world, shifts in farming practices have helped to increase income of farmers and combat some of the observed warming trends. For example, in Indonesia switching to cocoa plant cultivation from forestry for agricultural purposes has made the area more productive and drought resistant while “maintaining shade trees”.¹³ In Niger diversifying the agricultural production and switching to forestry for agricultural purposes with indigenous trees has created a more reliable practice in the face of drought.¹⁴ “Watershed development” for the drylands of India includes harvesting rainwater using soil and water conservation trenches that concentrate water and soil where trees can be planted.¹⁵ The use of groundwater recharge in India and the US shows the importance of specific crops, for example eucalyptus, in the system of groundwater recharge in place of runoff.

There are many techniques of combating desertification that are being employed globally depending on the specific climate. There is no single fix to support growing populations in arid countries, but better understanding climate patterns, agricultural practices and adaptation strategies help to mediate the needs of populations and the ecosystem.

History of Climate Shifts in Northern and Western Africa

¹²Eric Holthaus. “Welcome to the Thirsty West.”

¹³ Binternagel, N. B., Jührbandt, J., Koch, S., Purnomo, M., Schwarze, S., Barkmann, J., & Faust, H. (2010). *Adaptation to climate change in Indonesia-livelihood strategies of rural households in the face of ENSO related droughts*.

¹⁴ Haglund, E., Ndjeunga, J., Snook, L., & Pasternak, D. (2011). *Dry land tree management for improved household livelihoods: Farmer managed natural regeneration in Niger*.

¹⁵ Kerr, J. M., Pangare, G., & Pangare, V. (2002). *Watershed development projects in India: an evaluation*.

The Sahel extends from Senegal in the west to The Sudan in the east. It marks the transitional area between the Sahara in northern Africa (the largest hot desert on the planet) and equatorial Africa (south of the Sahel marked by its wet vegetation). The Sahelian zone can be further classified by smaller regions defined as hyper-arid, arid, semiarid and dry subhumid, as seen in Figure 3.

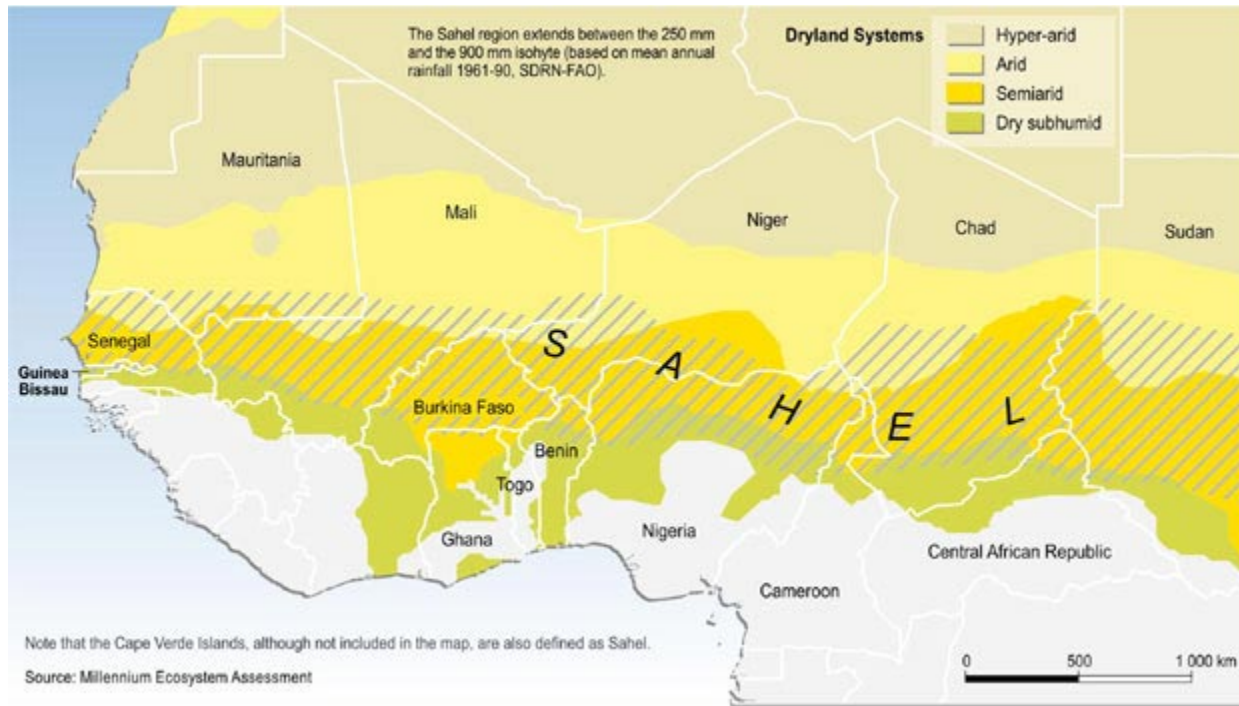


Figure 3. The Sahel Desert in West Africa. This graph shows the regions within the Sahel based on the aridness of the soil. This graph was created as a part of the Millennium Assessment report from 2005 as a case study.¹⁶

The Sahel has been marked by sudden ‘regime shifts’ that are defined by unexpected changes in environmental characteristics. One regime shift that mirrors the droughts of the 1970s occurred between 5,000 and 6,000 years ago. This was determined by the compilation of geologic data such as fossil lakebeds, pollen records, and skeletal remnants of animals that indicated a period of flourishing vegetation followed rapid loss of vegetation and a drop of lake levels. The

¹⁶ Stewart, Robert. "Desertification in the Sahel." Desertification in the Sahel. Department of Geosciences, Texas A&M University. January 1, 2008. Accessed January 30, 2015. <http://oceanworld.tamu.edu/resources/environment-book/desertificationinsahel.html>

geologic records suggest that the shift occurred over the course of a few centuries. The exact timeframe is hard to estimate due to the difficulty of obtaining well-dated sediment records that haven't eroded away within the past 5,000 years.¹⁷ DeMenocal, a scientist working on climate shifts in the Sahel, found more success using well-dated marine records of terrigenous sediments¹⁸ off the coast of Mauritania. The sediments are thought to mirror conditions in the western Sahara. The records show that approximately 5,500 years ago a distinctly abrupt transition occurred in the western Sahara from wet to dry conditions. This was determined from the low levels of terrigenous sediment present in the samples dating between 14,800 and 5,500 years ago. These samples indicated wet conditions, extensive vegetation cover, and low amounts of sediment from land. The abrupt increase in sediment, as shown by the core samples, suggested heightened levels of windborne sediment from land. This transition is inferred to have happened over a few decades or centuries.¹⁹

The causes for regime shifts are not clearly explained by one process or feedback loop. There are multiple hypotheses for the changes but none have been definitively held responsible for the observed climate changes. The first is the Milankovitch theory that attributes climate changes to changes in incoming solar radiation that vary based on slow shifts in the Earth's orbit. The variations in orbit include changes in the tilt, eccentricity and perihelion.^{20,21} Climate model simulators have confirmed the connection between changes in Earth's orbit and monsoonal

¹⁷ Foley, Jonathan A., Michael T. Coe, Marten Scheffer, and Guiling Wang. "Regime Shifts In The Sahara And Sahel: Interactions Between Ecological And Climatic Systems In Northern Africa." *Ecosystems* 6 (2003): 524-39.

¹⁸ As defined by Encyclopedia Britannica "Terrigenous sediment is deep-sea sediment transported to the oceans by rivers and wind from land sources."

¹⁹ DeMenocal, Peter, Joseph Ortiz, Tom Guilderson, Jess Adkins, Michael Sarnthein, Linda Baker, and Martha Yarusinsky. "Abrupt Onset and Termination of the African Humid Period: Rapid Climate Responses to Gradual Insolation Forcing." *Quaternary Science Reviews* 19, no. 2000 (2000): 347-61.

²⁰ As described by Merriam-Webster: the point in the path of a celestial body (as a planet) that is nearest to the sun.

²¹ Foley, Jonathan A., Michael T. Coe, Marten Scheffer, and Guiling Wang. "Regime Shifts In The Sahara And Sahel: Interactions Between Ecological And Climatic Systems In Northern Africa."

rainfall in the Sahel and Sahara during the middle Holocene.^{22,23} Though it is likely that the Milankovitch theory is a part of the regime shift, it does not account for the sudden change in climate considering shifts in the Earth's orbit happen over a longer timeframe. There are positive feedbacks that can amplify small changes over long time frames that create strong changes in short time frames.

Another hypothesis is correlation between atmosphere and vegetation cover within the Sahara. This correlation would explain variation in north African monsoon rains that are linked to expanded vegetation and wetland cover. The high levels of monsoon rains in the Sahara and Sahel would be initially triggered by changes in Earth's orbit and would increase vegetation cover, lakes, and wetlands.²⁴ This increased cover would lower albedo and strengthen the processes feeding the summer rains due to the increase in energy and moisture. Climate and vegetation vary between the two stable states of a "green Sahara" or a "desert Sahara" in northern Africa. By experimenting with climate models, this theory was confirmed using atmosphere-ocean-biosphere models with the slow changes of the Earth's orbit.²⁵ The models suggest that a "threshold" was crossed within the climate-vegetation system approximately 5,500 years ago that amplified the gradual reduction in rainfall due to land-surface feedback mechanisms.²⁶ In this circumstance, the "green Sahara" suddenly transitioned to the "desert Sahara" during the middle Holocene. This data is still hotly debated and more accurately dated paleoclimatic data is necessary to confirm the theories.

²² The middle Holocene is defined as a period between 7,000 and 5,000 years ago that had warmer climate than present day.

²³ "The Mid-Holocene "Warm Period"" NOAA Paleoclimatology Global Warming. August 20, 2008.

²⁴ Foley, Jonathan A., Michael T. Coe, Marten Scheffer, and Guiling Wang. "Regime Shifts In The Sahara And Sahel: Interactions Between Ecological And Climatic Systems In Northern Africa." 524-539.

²⁵ ibid

Variability in the rainfall regime and land cover in the Sahel can occur on much shorter time scales as well. The regime shift that occurred after 1969 has been one of the longest and severe droughts to hit the region in recent history with precipitation levels 25-40% less than the average between 1931-60. Changes in the climatic patterns of the land or ocean can affect monsoons, and can serve as explanations for such a significant shift from the “wet Sahel” of 1910-mid 1960s to the “dry Sahel” of 1969 onward are. Land degradation and “desertification” could affect the monsoon through changes in surface albedo, causing changes in the surface energy budget that would affect monsoon systems and lessen the amount of precipitation in the area. The second hypothesis suggests that changes in the ocean, specifically sea-surface temperatures (SST), would impact atmospheric circulation patterns.²⁷ There are established ties between SST and precipitation in the Sahel on a year-by-year basis, though there have not been studies proving correlation in the long term. Both the land and ocean explanations of altering monsoon patterns and triggering for the “dry Sahel” are somewhat insufficient to be fully accountable for the observed changes.

The most compelling explanation for the “dry Sahel” post 1969 lies in the feedback loop where heightened dust levels suppress rainfall in the Sahel; a positive feedback loop between land surface and the atmosphere. Clouds with large amounts of dust have water droplet sizes below the needed radius size for rainfall. Land degradation would increase the amount of dust in the atmosphere, which would reduce the amount of rain, lessen vegetation growth, and increase susceptibility of the land to degradation.²⁸

The above explanations for the sudden regime shifts both 5,500 years ago and after 1969 are still being researched and confirmed. More paleoclimatic data improved understanding of

²⁷ Foley, Jonathan A., Michael T. Coe, Marten Scheffer, and Guiling Wang. "Regime Shifts In The Sahara And Sahel: Interactions Between Ecological And Climatic Systems In Northern Africa." 524-539.

²⁸ *ibid*

feedbacks are needed to make more definitive conclusions. Though the causes of the sudden climatic shifts are not yet fully understood, it is confirmed that climate changes, like that in the late 20th century, are not unknown to the Sahel. The observed drought is part of a longer history of climatic periods marked by wet and dry characteristics.

Migration Due to Drought

In modern times, climate changes have forced migration and adaptation of the human population living in the Sahel to cities that provide more secure sources of food and water. For example, “[t]he recent flight of some pastoral people began as early as 1968 as hunger hit various areas of Mali, Niger, and Senegal. By 1972 the migrations were massive, ending in the refugee camps, new urban slums, or death.”²⁹ Climate patterns can shape the migration of communities that rely on natural resources to support their food and water needs. Among all of the droughts that struck the Sahel in the 20th century, the drought in the 1970s had the most severe consequences on the Senegalese population. With this drought, there was a mass migration to urban epicenters that provided more stability for food and water resources than rural parts of the Sengal.

During the 1970s, the poverty rate in rural regions in Sengal was 44.4% versus 16.4% in cities.³⁰ This disparity encouraged movement to cities where infrastructure provided more stable food and water. One of the few sources of data available on migratory patterns was a report done by the “Réseau sur les Migrations et l’Urbanisation en Afrique de l’Ouest” (REMUAO) in 1988. The report indicated a net negative migration from areas of the North and East of Senegal such as Saint-Louis and Louga and a positive migration towards urban regions like Dakar and coastal

²⁹ Chafer, Tony. *End of Empire in French West Africa : France’s Successful Decolonization?* Oxford, GBR: Berg Publishers, 2002. 60-65.

³⁰ Roquet, Dominique. “Partir pour mieux durer : la migration comme réponse à la sécheresse au Sénégal ?” *Espace populations sociétés. Space populations societies*, no. 2008/1 (June 1, 2008): 37–53.

towns like Ziguinchor.³¹ There were trends before the drought of moving to the cities during the dry months and living in the country to work on agriculture during the wet months. The great drought of the 1970s made some migrations more permanent due to the stability city life.³²

The cities of Senegal, particularly Dakar and St. Louis, were the most stable parts of the country in regards to food and water security. The infrastructure that was put in place by colonists was strategically placed to best serve their lifestyle. Most of the high-ranking colonists were positioned in cities. Steady access to water and food were prioritized over access of Senegalese villagers. During times of drought, Senegalese villagers wanted to move to urban areas that were better served than the countryside.

³¹ Roquet, Dominique. “Partir pour mieux durer : la migration comme réponse à la sécheresse au Sénégal ?” 37–53.

³² Roquet, Dominique. “Partir pour mieux durer : la migration comme réponse à la sécheresse au Sénégal ?” 45.

Francophone Colonization to Postcolonization of West Africa

The term colonization is defined as “a particular relationship of domination between states, involving a wide range of interrelated strategies, including territorial occupation, population settlement, and extraction of economic resources by the colonizing state.”³³ For this thesis, the focus is centered on colonialism associated with European powers entering territories in Africa under the pretense of “civilizing” the nations, extracting resources, and establishing themselves on a global stage. These powers invaded areas under the ruse that they were bettering the countries that were being invaded by bringing infrastructure, education and trade. In reality the infrastructure they were creating was for the benefit of the colonists. “Historically, colonialism also depended upon legal, cultural, and political justifications of the colonial project in the metropole and the colonized state.”³⁴ The campaign that colonial powers advertised of bettering the colonies excluded the political upheaval and destruction implicit to the people being colonized. Their culture was disrupted and their structures replaced. The legacy of colonialism today is best stated by, “[t]o be a colonialist is to be an exploiter.”³⁵

The term “colony” refers to the legal status of Roman citizens that was expanded to include citizens of conquered territories. During the sixteenth century, the term colonization was applied to other European powers such Portugal and Spain. During the seventeenth to the nineteenth centuries the Dutch, French, English and Germans were categorized as colonizers in areas of Africa, India, Asia and the Americas. The colonial era is considered to be over by the

³³ “Colonialism.” In *The Encyclopedia of Political Science*. 2300 N Street, NW, Suite 800, Washington DC 20037 United States: CQ Press, 2011. <http://knowledge.sagepub.com/view/the-encyclopedia-of-political-science/n267.xml>

³⁴ “Colonialism.” In *The Encyclopedia of Political Science*.

³⁵ Thornton, A. P. “Colonialism.” *International Journal* 17, no. 4 (October 1, 1962): 335–57. doi:10.2307/40198890. P.1

mid-twentieth century when many colonized nations became independent. Power relationships of economic exploitation by former dominant countries in previous colonies persist to this day.

Colonialism does not exclusively refer to European nations, though criticism of colonization generally excludes Persians, Chinese, Mongols, Russians, Ottomans, and Japanese. The Greek and Roman origin of the practice functioned mostly for trade and economic gain and growth. Eventually colonialism became indirect rule of one civilization over another via imposed laws. Colonialism benefitted the colonizers by increasing the number of soldiers for their military, the number of citizens they could tax, and the availability of raw materials. The colonizers' justification for exploitation was the benefit of instigating a stable government, economy, and cultural example to better the systems in place. Though in theory colonies would receive some benefits from the presence of stable European governments, the process was riddled with initial violence and continual rebellions until independence.

French Colonization in West Africa

The start of colonialism in Senegal began in the 15th century when Portuguese traders first reached the Senegal river estuary.³⁶ The open mouth of the Senegalese river and the estuary of the Gambia were enticing to traders with their deep channels and potential for colonial economic gain. By the 17th century, the French and British rivals became increasingly interested in the rivers. The French started trading posts at the mouth of the Senegalese river that included Gorée Island, the most western trading post in Africa. By 1895 there were up to six French colonies within West Africa that defined French West Africa until Senegalese independence in 1960.

Colonial Government

³⁶ Thornton, A. P. "Colonialism." 335–57.

The federation of French West Africa was ruled by the governor-general who reported to the Minister of Colonies in Paris. Starting in 1902, the governor-general was based in Dakar, the capital of the colony. Each of the eight territories that were linked had a governor that answered to the governor-general. The Four Communes (Dakar, Gorée, St. Louis and Rufisque) were separated from the larger territory of Senegal due to the fear of increased political influence of important Africans that were part of the Four Communes. The governor-general ruled over this area himself in hopes of controlling the political influence of the Communes.

From 1848 to 1939, citizens of the Four Communes held the right to elect a deputy to the French National Assembly in Paris as well as their own mayors. Senegalese residents of the Four Communes that were part of the colonial government also held French citizenship starting in 1916. By 1936, there were 100,000 citizens in the Four Communes and 2,400 citizens in the entire Afrique Occidentale Française (AOF). The remaining fifteen and a half million Africans were viewed as subjects that had no political rights.³⁷

At this point, French culture had only minimally penetrated the ‘traditional’ African society. Those who were able to attend French schools made up a new class of elite. These elite spoke French, had access to material goods, and were exposed to European ideas that were unavailable to others.

Africans would be retained in their traditional culture, which was in the past, and African societies would be allowed to evolve at their own pace and along their own lines, with the given important proviso that their chosen path of evolution did not threaten French dominance or offend French sensibilities. They therefore needed to be insulated from modern ideas so that they could be more easily controlled, although the underlying assumption remained that they would gradually become more *franchisé* (‘Frenchified’).³⁸

³⁷ Chafer, Tony. *End of Empire in French West Africa : France’s Successful Decolonization?* 28.

³⁸ Chafer, Tony. *End of Empire in French West Africa : France’s Successful Decolonization?* 29.

The new class of Senegalese had a dual status as representatives both of their country and of French sensibilities. They were more trusted by both the French and lower Senegalese than the respective parties, but were not fully part of either group.

Leopold Senghor, the first president of Senegal, is an example of a Senegalese who became a master of French culture and literary tradition in order to gain independence. Though he accomplished this, he did so in French defined terms. The French created a system in which they trained individuals to run the infrastructure that they established. French schools qualified Senegalese doctors and politicians so that their governance was not as necessary given the values they had instilled in the new Senegalese elite.

Andre Lorde, a feminist and civil rights activist that was active during the mid-late 1900s, wrote an essay entitled, *The Master's Tools Will Never Dismantle the Master's House*. Within this essay she addresses problems within feminist theory that were holding back progression because of the reproduction of oppression systems. Her theory applies to the power dynamics within the Senegalese government. The progress that was being made to give Senegalese more power was productive, but the same systems of oppression were intact. Senegalese were being promoted, but on French terms and in French roles. This dynamic was particularly present during French times of need when Senegal was required to aid the colonizer.³⁹

With the arrival of WWII in Europe, the French called upon its colonies to aid the motherland in its time of need. This loyalty started during WWI with calling up 180,000 black African soldiers for service in Europe. The wars solidified the French view of the 'loyal African' and the imperial link.⁴⁰ In contrast to the French feeling further bonds with their colonies,

[t]he war acted as a catalyst for members of the [African] French-educated élite to define for themselves an identity and political role within African society. Partly separated

³⁹ Lewis, Reina, and Sara Mills. *Feminist Postcolonial Theory: A Reader*. Routledge, 2003.

⁴⁰ Chafer, Tony. *End of Empire in French West Africa : France's Successful Decolonization?* 29.

from their own society by their acquisition of a French education, yet at the same time not admitted to full membership of European society, they were often considered and treated by French officials as *déclassés*.... [t]hey began to forge a new sense of identity, and to redefine their role, no longer simply as auxiliaries of French colonial power but as representatives of their people... not only were they the first beneficiaries of the new liberties granted to Africans by the Free French, but as French speakers they were the obvious candidates to represent their people in the various elected bodies that were established in the *métropole* and French West Africa at the end of the war.⁴¹

The French requirement of service in the war ostracized the Senegalese elite and spurred resentment. As a response in 1940, African colonies were given the opportunity to become citizens of European nations. Populations within French colonies were able to become citizens through residency in one of the Four Communes or through the state of becoming *franchisé*, or Frenchified. Being Frenchified was associated with fluency in the language, a French education, and French ideals. These ideals included religious views, marital practices, and lifestyle habits.

This racism of the colonized populations through the distinction between assimilated Africans and traditional Africans,

kept many French educated Africans on board the French colonial boat for longer than might otherwise have proved possible by re-creating the notion that French colonialism, republican style, was progressive and modernizing, and suggesting that it was through integration into ‘the one and indivisible Republic’ that African liberation would be ultimately be achieved.⁴²

This furthered the motivation of Africans to embrace colonial ideals and ideas. With assimilation to the colonial power, came privilege and French control.

Postcolonialism

Generally speaking, the period of Independence where many African nations transitioned from colonialism to postcolonialism began in 1950. Postcolonialism defines the period of time in

⁴¹ Chafer, Tony. *End of Empire in French West Africa : France's Successful Decolonization?* 48.

⁴² Chafer, Tony. *End of Empire in French West Africa : France's Successful Decolonization?* 47-49.

which former colonies gained independence via peaceful and violent acts. Postcolonial theories address the legacy left by social, economic and cultural practices that took place during colonial times. Often the transition into an independent state involved the redistribution of resources that had been partitioned in a particular way by colonists. The restructuring of the political system, implementation of infrastructure and introduction of European values caused dissonance within the colonized countries.

Countries seeking independence desired leaders from their own population. Many colonized countries rebelled against colonial leaders, only to be left in a vacuum of political turmoil and disorganization. The ideal of a functioning republic, as displayed in western models of governance, was difficult to transition to considering the resentment of the “common man” towards western influence. Despite the somewhat unfulfilled dreams of the independence rebels, postcolonial countries gained the ability to rule themselves and work out their own political systems.⁴³

The colonies were granted independence and had to rebuild their political and economic presence. This proved to be a harder, less peaceful transition than imagined by independence activists. The colonies were expected to transition and function within a new European based system. Actions towards economic reparation lacked the full understanding of harm that the colonized states endured such as the destruction of the precolonial social and economic structures.

The colonizers wished to maintain positive relations with their former territories in order to continue economic gains. Neocolonialism is the concept of “control of less developed countries by developed countries through an indirect means. The term was first used after World

⁴³ Wininger, Kathleen J. “Post-Colonialism.” In *Encyclopedia of Global Justice*, edited by Deen K. Chatterjee, 883–86. Springer.

War II to refer to the continuing dependence of former colonies on foreign countries.”⁴⁴

Colonizers controlled trade during colonial times and maintained a certain amount of control after independence. Some European leaders remained in advising positions after independence and colonies continued to trade in markets that were established during colonial rule. Even in independence, there was a dependence of the colonies on an outside conceptual framework for government. The countries technically gained independence from European rule but colonial dynamics remained through governmental ideals and power relations between classes.

Postcolonialism marks the time in which colonies navigate both independence identities and colonial legacy. Times of disaster are markers of interactions between governmental systems and aid distribution. One example of disaster is the increase of arid lands due to climate change.

Senegalese Independence

Dakar, Senegal, with the strongest French presence of the colonies became the capital city in 1902 and maintained its status as the center of the French West African Empire. Senegal’s first African deputy was elected to French parliament in 1914, providing the first representation of Senegal by a Senegalese.

In 1946 Senegal became a part of the French Union with Léopold Senghor as the socialist deputy for Senegal in the national assembly located in Paris. Senghor was one of the first examples of an African elite within politics. In 1958 Senghor aided in the writing of de Gaulle's new constitution that defined Senegal as an autonomous republic within the French Community.

⁴⁴ Halperin, Sandra. “Encyclopedia of Governance.” *Neocolonialism*. Thousand Oaks, CA: SAGE Publications, Inc., 2007.
<http://knowledge.sagepub.com/view/governance/n343.xml?rskey=S2BwaS&row=1>.

This act of partnership between France and Senegal during a time of Senegalese independence from France pointed to the ongoing association between the two countries.

Senegal was granted autonomy from France legally, but was doing so on French terms.

The devolution of power to Africans under the Loi-cadre^{45,46} belatedly enabled France to develop a new discourse of development to replace that of the ‘civilizing mission’. This new discourse on decolonization... was able to find new expression, and gain increased acceptance, in the shared language of cooperation and partnership for the promotion of African development... [s]uch a partnership was in the interest of France, which wished to maintain a sphere of influence in Black Africa after independence, and of the political leaders of newly independent Africa, who needed to consolidate their authority in a difficult economic and political environment. The new discourse of cooperation and equal partnership between sovereign nations thus served to legitimate, to both French and African opinion, the maintenance of close links between France and Black Africa in the post-colonial period.⁴⁷

The above excerpt describes the dynamics between the Senegalese elite that were gaining power and the French governmental officials that were shaping independence. The involvement of the French officials via Senegalese representatives disguised the agenda of the French to stay active in their colonies.

Senegal gained independence as part of the Mali Federation in June of 1960. Due to different ideals for governmental structuring, Senegal promptly left the Mali Federation. Senegal became an independent republic with Leopold Senghor as the elected president representing the Socialist Party rule in August 1960. In 1963, Senghor drafted a constitution modeled after de Gaulle’s that gives executive power to the president and ruled until he resigned at the end of 1980. He helped form two opposition parties in 1976 and held the first multiparty election in 1978 in which his own party (the Socialist Party) won.

⁴⁵ Loi-cadre The *Loi cadre* was a law passed in 1956 by the French National Assembly, which provided for universal adult suffrage for all African subjects in French colonies. The law ostensibly gave control over economic development, internal and international defense, and foreign policy to the French government, but allowed self-autonomy over other matters.

⁴⁶ “Loi Cadre.” *About.com Education*. Accessed February 27, 2015.
http://africanhistory.about.com/od/glossary/l/g/def_LoiCadre.htm.

⁴⁷ Chafer, Tony. *End of Empire in French West Africa : France’s Successful Decolonization?* 229.

The idea of “Françafrique” was introduced as an arrangement after African colonies gained independence in 1960. It is often used synonymously with neocolonialism in that it explains the relationship between France and their past territories. Following independence, French advisers remained influential in high political positions and reported to Charles de Gaulle’s chief advisor on African affairs. As the political upheaval of independence began to settle, Senegal was struck with a series of droughts.⁴⁸

Neocolonialism in West Africa

Senegal is a unique case among many examples of postcolonial countries. As the most important hub within French West Africa during the 19th and 20th century, Senegal holds the dual identity of traditional culture and French infused ideals. The independence of Senegal entailed a handing over of power from French officials to newly elected Senegalese representatives that remained closely connected. Leopold Senghor says, “colonization was a necessary evil” on the road to African socialism. Fifty years after independence, Senegal remains an independent nation that maintains ties to French ideals permeating food, dress, language and personal relations. The Senegalese identity is a combination of traditional precolonial culture mixed with French culture. As the country moves forward, it creates a new system amidst the various influences that includes its former colonizer.

Within Senegal, there have been many changes due to infrastructure that were established during colonial times. Senegalese who have little access to water resent the French infrastructural changes because they hold them responsible for the observed droughts. Complete information on climatic and societal events at play within Senegal and West Africa help to form a understanding

⁴⁸ Chafer, Tony. *End of Empire in French West Africa : France’s Successful Decolonization?* 60-65.

of vulnerability in Senegal as climate change continues to create more extreme weather patterns. Colonialism, as part of the history of development in West Africa, provides context for the ongoing aid and economic interest that France holds within planning for future water shortage.

French Colonial Legacy in Access to Senegalese Water Infrastructure

Water Distribution and Rights from the Colonial to the Postcolonial Era

In Senegal, drinking water is sourced from groundwater and surface water. The Casamance and Sine Saloum rivers are two national rivers that contribute primarily to drinking water as well as the lake of Guiers and Tamna. The water ranges from 1-400 meters underground and is found throughout the country. It is estimated that there is 7 million cubic meters of groundwater that covers 4/5 of the national territory.⁴⁹

In 1960, the first public-private partnership was formed as the *Compagnie Générale des Eaux du Sénégal*, which was an auxiliary to the French water company *Compagnie Générale des Eaux*. Contingent upon the lease, it was in charge of providing urban areas with water in Senegal. In 1971, Léopold Senghor nationalized a public water company called *Société Nationale d'Exploitation des Eaux du Sénégal* (SONEES). The formation of this company pushed for water to be free in rural areas. In 1995, SONEES was disbanded and the government decided to have a private lease contract system with the creation of three new water companies: the state asset holding company called *Société Nationale des Eaux du Sénégal* (SONES), private company *Sénégalaise des Eaux* (SDE) and public sanitation company *Office National de L'Assainissement du Sénégal* (ONAS). In 2001, the World Bank started the Long Term Water Supply Project that outlined six components of improvement and expansion, especially targeting areas that are “underdeveloped”⁵⁰. They provided most of the US \$300 million that was needed to fund the project. SDE in 2002 was certified by the French Association for Quality Assurance (AFAQ). The program has increased water production by 18% and provided 81,000 new household connections between 1996 and 2003. Before changes, the Senegalese government estimated that less than 56

⁴⁹Stewart, Robert. "Desertification in the Sahel."

⁵⁰ “Underdeveloped” refers to areas that are not currently connected through formal infrastructure

percent of the population was receiving potable water with a population of 1 million people in the city and 2.4 million in the Dakar metropolitan area. With the change to a public private partnership, “another government objective was to retain a degree of control over the assets, while simultaneously setting up the institutional arrangements for sustainable, well-run and expanding water supply services.”⁵¹

France has maintained a certain amount of control within Senegalese infrastructure due to the initial implementation and struggles with drought. France often regulates and approves plans for companies such as the SDE for quality assurance. Though the initiation of drinking water infrastructure was ultimately beneficial given the expansion of clean drinking water it provided,

[a]lmost no consideration is given to the fact that other peoples have completely different economic systems, social values, and survival strategies that will influence their perception of a situation and their response to any given change. As a result, the introduction of what is indisputably a technological ‘good thing’ in the sociotechnological mix of the ‘developed’ donor area may turn out to be the beginning of an ecological nightmare in its new context. Rather than come to grips with this fundamental problem and give the study the context it deserves, efforts now seem to be concentrated upon bypassing this fundamental aspect of the problem altogether and creating contextual islands to suit the innovation, such as seizure of large areas.⁵²

The French colonists had little understanding of the cultural practices and uses of water within Senegal before infrastructure was put into place. As a result, the richest parts of the countries gained further access to water in cities, while the poorest parts of the countries were restricted in their use of natural resources because of pipes and dams. During postcolonial times, the new Senegalese government had been shaped by the French education system and maintained many of the same power dynamics as before.

⁵¹ Dakar, Senegal Case Study (Water)." Special Unit for South-South Cooperation. November 1, 2012. Accessed January 30, 2015. http://www.esc-pau.fr/ppp/documents/featured_projects/senegal.pdf

⁵² Glantz, Michael H. *The Politics of Natural Disaster : the Case of the Sahel Drought*. Praeger Special Studies in International Economics and Development. New York: Praeger, 1976. 178.

Politics, Power, Infrastructure, Decision Making

In order to understand the present tensions within Senegal around water, it is necessary to have historical context. French colonization of Senegal brought formal infrastructure to the country. The French implemented property rights, sewer systems, drinking water pipes and electricity starting in the city of Dakar.

Immediately after the Second World War France had apparently made a good start in laying the foundations for its project of building a 'modern' Africa within a reformed colonial system. Between 1946 and 1950, however, no new policy initiatives of comparable significance were launched. Colonial officials in both Paris and Dakar wanted a period of stabilization and consolidation after the upheavals of the war and its immediate aftermath. But this was to ignore the impact of developments over the previous ten years, the combined effect of which was, on the one hand, to weaken French authority and, on the other, to deepen African resentment towards colonial rule and increase pressure for reform.⁵³

The initial implementation of infrastructure by the French gave them power to control resources, and therefore the Senegalese population. As the Senegalese gained more power post WWII, the infrastructure was a combination of French and Senegalese rule. Senegalese executives reported to the French but advised between themselves in decision making within the country. The desire to keep positive relations was evident from the actions of the French and the willingness of the Senegalese to collaborate. De Gaulle gave a speech in Dakar on December 13th, 1959 to acknowledge the independence of the Federal Assembly of Mali. De Gaulle advised them to maintain positive relations with France because the economy, even for established states, required interdependence. Part of his speech reads, "[t]here is no state, however great or powerful it may be, which can do without others. Nowadays, no policy can be carried out without

⁵³Chafer, Tony. *End of Empire in French West Africa : France's Successful Decolonization?* 180-183.

cooperation’.... [t]he language of ‘assimilation’ and integration thus gave way to the language of ‘cooperation’ and ‘partnership.’”⁵⁴

This speech was perceived as supportive, given he was granting independence, but was also cautionary. He implies that the government of Mali is not aware of the state of the economy they are entering into. De Gaulle belittles the Mali representatives subtly enough that it is not blatantly offensive. Words such as ‘assimilation’ or ‘integration’ that had been used to describe French relations with their colonies in the past, were replaced by hopes for ‘cooperation’ and ‘partnership’. Though the latter was more respectful of the newly independent states, the desire to exploit and benefit from relations was still present in French ideals. Like Mali, the transition into postcolonialism in Senegal was considered peaceful, but was slow to fully implement Senegalese representatives in government official roles. Once the Senegalese were integrated into the governmental system, they were faced with an economy that centered around Dakar and did not incorporate the majority of the country that was rural.

A half-century of French colonial rule did little to develop the stagnant agricultural and herding economies in the area. Without the natural resources or possible value of other colonies, the Sahel remained, after independence as before, a relative backwater of French involvement in Africa, its states sovereign but its predominantly rural population among the poorest in the world.⁵⁵

French colonialism left Senegal with basic infrastructure but did little to change the agricultural and rural lifestyle present in much of the countryside. This furthered the fission between the well served Senegalese in the capital and the rural poor population that had no access to infrastructure. The water pipeline, discussed in the case study of 2013, transported water across the country to ensure access within the capital. Colonialism created an infrastructure that clearly favored the partitioning of water to the areas that were most economically active. The pretense of

⁵⁴ Chafer, Tony. *End of Empire in French West Africa : France’s Successful Decolonization?* 180-183.

⁵⁵ Glantz, Michael H. *The Politics of Natural Disaster : the Case of the Sahel Drought.* 27.

the colonial ‘civilizing mission’ through sewers, piped water, roads, schools and hospital, did not disclose that the placement would be relative to the access of the colonists, not the majority of the Senegalese population. After Independence, the access for the lower classes did not change. Instead of colonists receiving the sole benefits of the infrastructure, the Senegalese elite were also included. The controlling class changes from the French to the Senegalese elite while the lower class remained the same. The Senegalese government continued to distribute water in a similar fashion to colonial times as well as expand to more rural areas. During times of water shortage, the areas with access to infrastructure benefitted.

Late 20th century Drought

As discussed, given the dry tropical climate, drought is not unknown to the Senegalese. Figure 4 shows deviations from the average rainfall during the 20th century for the Sahel. There are a number of drought years: 1912-1915 and 1940-1944, but none that compare to the exceptional drought starting in 1969 and continuing through 2014. During the drought years, precipitation levels are approximately 50-60% lower than average rainfall taken over the preceding decades. The drought from 1968-1985 was not significantly different than other droughts in low rainfall levels but it spread through all of the countries in the Sahel and equatorial Africa, from the Atlantic to Chad. This drought covered a larger area than previous droughts.⁵⁶

As seen in Figure 4, the most extreme drought years within the drought period of 1968-1985 were 1970-73, 1976-77, 1983-84, 1990, and 2002. From 1968-1973 it is estimated that 250,000 people died due to lack of food and water resulting from desertification. Along with

⁵⁶ Roquet, Dominique. “Partir pour mieux durer : la migration comme réponse à la sécheresse au Sénégal ?” 37–53.

human mortality there were huge vegetation and species loss. After 1972, the majority of Acacia trees within Senegal had died and significant loss of Mangroves and Palm Trees was observed.⁵⁷

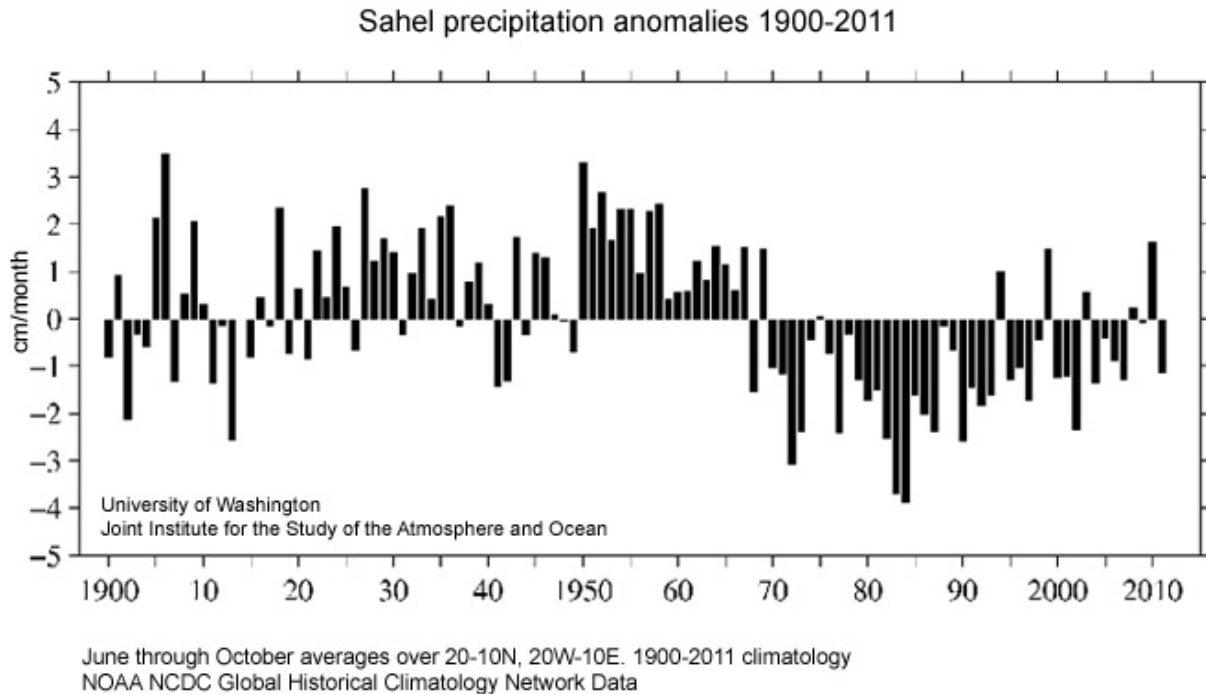


Figure 4. This graphs shows the rainfall anomaly in cm per month within the Sahel during 1900-2011. There is never a difference greater than ± 4 cm/month from the average. The most extreme wet years included 1907 and 1951. The extreme dry years were in 1972 and 1986.⁵⁸

The drought was originally believed to be a result of anthropogenic land resource management but has since also been attributed to increased ocean temperatures in the waters off the African continent and elsewhere. Increased ocean temperatures reduce the temperature

⁵⁷ Roquet, Dominique. "Partir pour mieux durer : la migration comme réponse à la sécheresse au Sénégal ?" 37-53.

⁵⁸ Stewart, Robert. "Desertification in the Sahel."

difference between land and ocean, which results in less precipitation. The drought is described as striking,

the Sahel with savage effect. From the spring of 1968 there were ebbing water supplies, chronic crop failures, and a recurrent need for emergency food shipments to a million or more people. The disaster was visibly etched in the ecology of the region. By 1971, Lake Chad was reduced to one-third its normal size. The great Senegal and Niger rivers were shrunken in many places to shallow streams. Each year the wasteland of the Sahara moved relentlessly southward across the 2,600-mile belt. Ten miles here, fifty miles there, the desert consumed the parched land without vegetation or moisture to hold it back.⁵⁹

This change in climate affected everyone, from farmers to herders to businessmen. The biggest economic losses occurred in agriculture. The wet season that allows for soil to replenish its nutrients typically lasts five months. The crops depended on this ratio of wet to dry months to grow. During the drought, the wet months were limited to two and a half to three months, not providing enough time for the soil to retain its nutrients or for crops to develop. Farmers were forced to use more arid land that was not as conducive to agriculture. This further depleted the soil and lengthened the ideal rotation time. Additionally, it decreased the amount of land for cattle to graze. Most tax revenue depended on the production of peanuts and palm oil in the Sahel and the governments lost an estimated 50% of conflating taxes and GDP. This crippled the governments so that they were not able to support their starving citizens.⁶⁰

The responses to the drought during the 1970s had international reach. The Sahelian countries of Senegal, Mauritania, Mali, Niger, Chad, Burkina Faso, Cape Verde, Guinea Bissau, and the Gambia created an organization with the French acronym CILSS which translates to the Permanent Interstate Committee for Drought Control in the Sahel. This group was started after the 1968-1973 droughts in order to lessen the effects of future droughts. Foreign aid came from a host of countries, such as the United States via the Sahel Development Program in 1977, but was

⁵⁹ Chafer, Tony. *End of Empire in French West Africa : France's Successful Decolonization?* 31-32.

⁶⁰ Chafer, Tony. *End of Empire in French West Africa : France's Successful Decolonization?* 31-32.

primarily supported by France. Members of the Sahel and countries that have provided aid have learned that increasing food production is not a realistic blanket solution. Instead, it is more important to effectively distribute food. Since the 1970s, food production per capita in the Sahel has declined and demand has increased resulting in an increase in imports (primarily cereals).

At the time of independence, the amount of food imports was close to nothing. By 1985, one third of cereal consumed in the Sahel was imported. Given the high amount of poverty in the region, the gap between food needs and commercial imports was filled by food aid. The imported food via aid consisted of surplus grains such as rice and wheat from other parts of the world. Rice and wheat have shifted into staple roles in urban areas, reducing the incentive for rural farmers to grow traditional millet and sorghum. Though the incentive for traditional grains is low, the soil and particular climate of the Sahel inhibits the growth of rice and wheat.⁶¹ The drought of the 1970s caused a breakdown of the independence of the Senegalese government when they were not able to support the starving population. It required aid from France, the US and the World Bank during times of disaster. Though there was a need for foreign aid, it was inconsistent. The hope for aid is described in the “Literature Review of *Cycle de Sécheresse*” section below. The transition from independence to the droughts is described below:

‘The French contributed to their own demise by creating African elites,’ said one scholar. ‘France stayed in the Sahel,’ another expert observed, ‘because she saw herself as a great power maintaining its influence, but the good times of the early sixties turned later to discontent on both sides and the realization that neither the French nor the Africans were getting much out of it.’ As the drought culminated in famine and social disruption in 1972-72, French support and involvement in most of the affected countries, never a major commitment, would be in many ways less than at any time since colonization.⁶²

The difference with the drought of the 1970s was that it hit just after independence when water distribution and infrastructure had recently been changed. The Senegalese narratives about

⁶¹ C. Hinman. *The Plight and Promise of Arid Land Agriculture*. New York: Columbia University Press, 1992.

⁶² Glantz, Michael H. *The Politics of Natural Disaster : the Case of the Sahel Drought*. 28.

the drought often were critical of the French and Senegalese governments. The infrastructure that was started during colonialism and continued to build after independence brought water to Dakar from some of the driest parts of the countryside. The criticisms of French and Senegalese governments during times of drought represent tensions between pre and postcolonial ideologies. Despite the fact that the drought took place after independence, the Senegalese people who were most affected by drought felt that there was a connection to colonial systems that persisted after colonial times. The people that were experiencing the biggest impacts from water shortage were never the Senegalese elite or the French officials. The populations within Dakar that had access to infrastructure were not ravaged by drought in the same way that people on the countryside were. This dynamic between the privileged and the rest of Senegalese society was most stark when drought hit and separated those that benefitted from colonial ties and those that suffered from infrastructure. The distribution of aid, both nationally and internationally, was influenced by prioritization of Dakar, given its coastal location.

Pipeline Break September 2013

On September 12th 2013, the pipeline that brings water from Northern Senegal to the capital of Dakar broke, leaving 40% of the 3 million people living in Dakar and its suburbs without fresh water. Dakar drinking water is carried by a pipeline from the Keur Momar Sarr water plant that is located 155 miles away next to Guiers Lake, close to Saint-Louis.⁶³ There was an underground section of the pipeline that was damaged due to wear and tear, though some experts claim it was poorly maintained, so that water was unable to reach Dakar. This water leak

⁶³ “Dakar: a City of Floods Without Any Water for Its Residents | The National.” Accessed October 31, 2013. <http://www.thenational.ae/world/africa/dakar-a-city-of-floods-without-any-water-for-residents>.

occurred on a bypass that led to the water hammer protection system.^{64,65} Many people within Dakar were left without water for three weeks though the shortage lasted for up to six weeks within the poorer parts of the city. This was the fourth water leak of the same type, though this event was significantly longer and more severe than past leaks due to multiple attempts to fix the leak before replacing the faulty piece. This leak took up to two months to fully fix whereas past leaks were repaired within a few days.

The citizens of Dakar blamed the water company SDE for the irresponsibility in not fixing the pipeline as well as the government for not taking action faster. "How can we stay for two weeks without water?" said 27-year-old carpenter Amadou Sow in Dakar. "If the government can't solve something as simple as the water supply, how can they solve more complex problems?"⁶⁶ The frustration grew the longer that the city was without water and culminated in street riots where tires were burned and citizens demanded direct attention to the issue. Citizen frustration bred conspiracy claims such as the water had been shut off to encourage buying bottled water. Citizens without means to buy bottled water relied on the limited water supply from wells. Others began digging wells on the beaches of Dakar in hopes of reaching fresh water or at least having water for household chores. This event created much vulnerability in the city and exposed citizens to unsafe drinking water and diseases such as cholera.⁶⁷

⁶⁴ "In pressurized water systems a very effective protection against water hammer damage is the use of hydropneumatic tanks. Similar to a surge protector for electronic devices, a hydropneumatic tank is designed for water storage and provides a pressurized air cushion needed to absorb or dampen the surge before it reaches the water treatment system.

⁶⁵ Anderson, Roger, and Matt Logan. "Protection Against Water Hammer Damage." *Compressed Air Best Practices*. January 1, 2015. Accessed March 27, 2015.

⁶⁶ Ba, Diadie. "Senegal Seeks French, Chinese Help as Water Crisis Hits Capital." *Reuters*. September 27, 2013. <http://www.reuters.com/article/2013/09/27/us-senegal-water-idUSBRE98Q0MS20130927>.

⁶⁷ Ndegwa, Humphrey Kariuki. "Water Crisis Hits Senegal, Capital in Danger of Cholera." *Humphrey Kariuki Ndegwa*. Accessed February 12, 2015. <http://www.humphreyndegwa.com/water-crisis-hits-senegal-capital-in-danger-of-cholera/>.

The frustration with the government for its poor distribution of water will be discussed in greater detail during my analysis of Sow's *Cycle de Sécheresse*. The unrest among the citizens over their lack of access has been mirrored throughout the history of water infrastructure. The sentiment rings through communities in need that a resource as basic as water should be prioritized. The government, in response, turned to international aid for support.



Figure 6.⁶⁸ This map shows the route of the pipeline that carries water from the water plant of Keur Momar Sarr to the capital of Dakar.

Four weeks after the pipeline break, the Senegalese president of the republic called for the assistance of French president François Hollande to bring technical expertise. The pipeline was

⁶⁸ Cheikh. “E-Gloo Média: Grande Pénurie D’eau à Dakar, Le Web Sénégalais Se Mobilise : Le Guide de l’e-Solidarité.” *E-Gloo Média*, September 27, 2013. <http://gloomedias.blogspot.com/2013/09/grande-penurie-deau-dakar-le-web.html>.

originally built by French colonists and there were hopes that French engineers would have more resources and experience. Additionally, China sent experts to Senegal to help solve the problem. A Senegalese diplomat commented, “Senegalese engineers will temporarily fix the problem, while a French company will build a new part that will be airlifted into Keur Momar Saar. [six weeks after break]”.⁶⁹ News coverage of the Senegalese water crisis lasted throughout the entirety. The press encouraged further training by Agro Paris Tech for local citizens.

Though Dakar is still experiencing water shutoffs, the 2013 event brought attention to the importance of maintenance on the pipeline.⁷⁰ The event also resurfaced tensions from past droughts over water access dating back to colonialism. The pipeline break was, in many ways, the opposite scenario of past drought because the capital was left without water and the countryside was unaffected. This places a more focused lens on dynamics within the capital as opposed to the country as a whole. During this event, the wealthier neighborhoods were only mildly affected by the water shutoff and the middle to low income areas experienced the long term struggles and risks. Between the lack of water and close living quarters apparent within the poorer neighborhoods, risk of cholera and other water borne diseases was greatly increased. The 2013 pipeline break gives insight into the underlying tensions over class and resource distribution within Senegal that are present during postcolonial times.

⁶⁹ Ndegwa, Humphrey Kariuki. “Water Crisis Hits Senegal, Capital in Danger of Cholera.” *Humphrey Kariuki Ndegwa*. Accessed February 12, 2015. <http://www.humphreyndegwa.com/water-crisis-hits-senegal-capital-in-danger-of-cholera/>.

⁷⁰ Ba, Diadie. “Senegal Seeks French, Chinese Help as Water Crisis Hits Capital.” *Reuters*. September 27, 2013. <http://www.reuters.com/article/2013/09/27/us-senegal-water-idUSBRE98Q0MS20130927>.

Opinions of Neocolonialism in Senegal

Sarkozy's 2007 Dakar Speech

The following section analyses a speech given in Dakar, Senegal during August 2007 by the newly elected president of France, Nicolas Sarkozy. His speech addressed French and Senegalese relations from a viewpoint that was not consistent with modern day opinions. This speech provides insight to the topic of Franco-Senegalese opinions because his proposed ideas were shockingly reminiscent of French colonial viewpoints. Though this speech cannot be used to represent the average French opinion, it provides context for some of the lasting perspectives that originated during colonial times. In Sarkozy's efforts to unite the two countries, he successfully managed to alienate officials and citizens alike. His disastrous approach to addressing colonial history left the country seething. Sarkozy starts by saying "he [the colonist] stripped the colonized of his personality, of his liberty, of his land, of the fruit of his labor." His initial criticism of the colonizers remains abstract with the exception of land. The colonist stripped the colonized of his personality and his liberty, both ideas that are broad and untraceable. In contrast, "the colonizer took, but I want to say with respect, that he also gave. He built bridges, roads, hospitals, dispensaries and schools." Sarkozy points out the much more concrete benefits that colonization provided. There is evidence in the infrastructure of Senegal to show for the benefits of colonization.

Sarkozy continues by saying, "He turned virgin soil fertile." He states here that African soil was virgin before and that it needed European seed to become fertile. This gives power to Europe and the ability to dominate the virgin Africa. Furthermore, it implies that without Europe, Africa would still be infertile. "He [colonists] gave of his effort, his work, his know-how."

Sarkozy implies that Africans didn't know how to develop their agricultural or infrastructure. "I want to say it here, not all the colonialists were thieves or exploiters. There were among them evil men but there were also men of goodwill. People who believed they were fulfilling a civilizing mission, people who believed they were doing good." Sarkozy is referring here to the idea of colonists implementing schools and bettering the colonies through the superior European education. This practice was the birth of the Senegalese elite within Dakar. "They [the colonists] were wrong, but some were sincere. They believed to be giving freedom, but they were creating alienation."^{71,72} This alienation occurred initially between the French and the Senegalese but later took place between classes within Senegal of those influenced by the French and those who were not.

Within Sarkozy's speech, he implies that there was an exchange in which the French took but also gave. He does not admit that what the French "gave" in terms of roads and waterways was for the colonists benefit to increase efficiency for taking away resources. The hospitals and education system was structured so that the French could ensure local administration by the Senegalese would adhere to French ideals. He concedes that the French did strip the Senegalese of their identity, but states that ultimately it was beneficial because it was holding them back. Sarkozy continues by explaining the problems that Africa, the continent in its entirety, is facing, "The tragedy of Africa is that the African has not fully entered into history." He says that Senegal had not entered history before the French arrived, so despite the atrocities that occurred, it was

⁷¹ "Il a dépouillé le colonisé de sa personnalité, de sa liberté, de sa terre, du fruit de son travail. Il a pris mais je veux dire avec respect qu'il a aussi donné. Il a construit des ponts, des routes, des hôpitaux, des dispensaires, des écoles. Il a rendu fécondes des terres vierges, il a donné sa peine, son travail, son savoir. Je veux le dire ici, tous les colons n'étaient pas des voleurs, tous les colons n'étaient pas des exploiters. Il y avait parmi eux des Hommes mauvais mais il y avait aussi des Hommes de bonne volonté, des Hommes qui croyaient remplir une mission civilisatrice, des Hommes qui croyaient faire le bien."

⁷² "Africa, Le Pauvre." *Kwani.org*. Accessed March 30, 2015.
http://www.kwani.org/editorial/report_essay/37/africa_le_pauvre.htm.

ultimately worth it for the Senegalese. He expresses a completely idealistic view of the Senegalese life before colonization, “The African peasants, who for thousands of years have lived according to the seasons, whose life ideal was to be in harmony with nature, only knew the eternal renewal of time, rhythmized by the endless repetition of the same gestures and the same words.” This image minimizes the life and the ideals of the Senegalese. He constructs the most basic mindset of the African peasant implying that this ideal was not possible and that it is too simple to live “in harmony with nature” because the only reward is rhythm and stability. He criticizes the traditional farming way of life present in parts of Senegal and claims that the rhythms of nature inhibit the African from progressing. Sarkozy establishes that, “The problem of Africa, and allow a friend of Africa to say it, is to be found here. Africa’s challenge is to enter to a greater extent into history. To take from it the energy, the force, the desire, the willingness to listen and to espouse its own history. But we cannot express this will (desire) for you.”⁷³ He implies that without technology and modernization, the African will remain separate from the future. Furthermore, he calls France a friend, which gives him the inside status to criticize. In theory, because of the friend status, there is an assumed trust and closeness.

Sarkozy reflects a colonialist attitude that overlooks the lack of trust and is blind to the resentment felt within Senegal. He poses a challenge to Africa to “enter a greater extent into history”. Within this challenge, he negates the presence that they already have in history. He further expresses that Africa must have the desire to enter this next phase of progression. This plea for Africa’s desire for progression once again negates the desire that has already been shown and the progression that has been made. He asks condescending questions to the youth of Africa, “African youth, you want development, growth, a higher standard of living?... If you want this then France will be at your side to demand it, but no one is going to want it in your place... Do

⁷³ “Africa, Le Pauvre.” *Kwani.org*.

you want that there should be no more famine in Africa, never again a single child who dies of hunger?” These questions are offensive in the obviousness of the answers African youth would give. It shows a lack of respect for the ideals that are inherent in every community leader or community member.

Sarkozy posed another challenge, “Then find a way to be self-sufficient in food production. Develop food. Africa has firstly the need to produce food to feed itself.” Sarkozy does not acknowledge the difficulty involved in food production. He states this solution as if the Senegalese had not already been making an effort in food production. He also does not recognize that most countries are not self-sufficient in food production, including France. Sarkozy continues by saying, “ If that is what you want, youth of Africa, you hold between your hands the future of Africa and France will work with you to build this future. What France wants to do with Africa is co-development...[w]hat France wants to do with Africa is to prepare the advent of Eurafrique, this great common destiny that awaits Europe and Africa.”⁷⁴ Sarkozy makes big claims and assumptions about the autonomy of African nations and then encourages them to partner with France. His speech mirrors the speech of De Gaulle declaring the independence of Mali. Both presidents initially voice support of independence and pride needed within African countries and then suggest partnership with France in order to succeed. Sarkozy’s speech is not a representative opinion of the average attitude of the average French citizen or the average French politician. It provides an example of a neocolonialist view that exists during postcolonial times and mirrors the more common opinions of colonial officers during French colonial rule of Senegal. The response to Sarkozy’s speech was shock and anger in both Senegal and in France.

Achille Mbembe, a Cameroonian philosopher and political scientist responded to Sarkozy’s speech by saying:

⁷⁴ “Africa, Le Pauvre.”

Today, among Francophone Africans whose servility towards France is particularly marked and who are seduced by the sirens of nativism and victimization, many know pertinently that the continent's fate, or its future, does not depend on France. After half a century of formal decolonization, young generations have learned that from France, like from other world powers, one should not expect much. Africans will save themselves or they will perish.^{75, 76}

In this passage, Mbembe expresses his frustration and lack of trust for France and other world powers. He points out the Francophone African population that has been seduced by the potential aid that European countries offer without follow through. He makes the clear statement with pride that the continent of Africa's fate is not linked with France. He challenges his fellow Africans that they will either save themselves, or perish. This theme of aid promised by the French is a main premise that Sow addresses in *Le Cycle de Sécheresse*.

Literature Review of Le Cycle de Sécheresse (Cycle of Drought)

Le Cycle de Sécheresse was written in 1983 by Charles Cheikh Sow, just after the devastating droughts of the 1970s. His book gave faces to the 250,000 people that died during the drought. The book grappled with power relations such as Senegalese-French, Senegalese-Senegalese, rural-city and poor-elite. The book contains a multitude of stories that are relevant to drought, postcolonial relations, and policy. The stories display the feeling of powerlessness in the face of the inexplicable changes. The Senegalese Fishing Song, shown in the introduction of this thesis, represents the feeling of water issues as seeming too large and abstract to understand on a practical level. The role of mysticism is helpful in grappling with the philosophical ideas behind

⁷⁵ “Aujourd’hui, y compris parmi les Africains francophones dont la servilité à l’égard de la France est particulièrement accusée et qui sont séduits par les sirènes du nativisme et de la condition victimaire, beaucoup d’esprits savent pertinemment que le sort du continent, ou encore son avenir, ne dépend pas de la France. Après un demi-siècle de décolonisation formelle, les jeunes générations ont appris que de la France, tout comme des autres puissances mondiales, il ne faut pas attendre grand-chose. Les Africains se sauveront eux-mêmes ou ils périront.”

⁷⁶ Ba, Diadie. “Africans Still Seething over Sarkozy Speech.” Accessed February 27, 2015. <http://uk.reuters.com/article/2007/09/05/uk-africa-sarkozy-idUKL0513034620070905>.

drought that can be attributed to religion, supernatural forces or the government. The most clear understanding of drought stems from the direct effects it has on individuals. These individuals often look to a high power such as the ocean, or ultimately God to give meaning to disasters. Three stories within *Le Cycle de Sécheresse* were chosen for their ability to display the overlap of water shortage, international aid, and tradition within Senegal. Additionally, these stories show the effects of the Dakar-centric water policies on rural populations in the postcolonial era, as discussed above.

The text is fictional but represents the general sentiments of the time in each of the settings that the stories portray. They show the confusion and distress of the common man within in the face of drought and the assumptions that are made about the source of the drought. The first story, “Cycle 3”, is that an older woman and a young girl in a village that is facing drought in the eastern part of Senegal and their search for fresh fish during a time without food. “During all of the months of drought, she hadn’t eaten fish besides dried fish, and even then, rarely.”⁷⁷ The structure of this phrase exemplifies the hunger and lack of food. The girl had never seen drought like this and trusted her family that had seen drought. She followed the old woman in search of fresh fish, because she knew there had to be some explanation for where the fish she was seeing was coming from, or if it was a figment of her imagination. Much of the explanations for the drought were mystical. The presence of religion within Senegalese society helped to explain natural forces that seemed inexplicable. Upon observing the old woman scaring the pelicans who were then dropping the fish, the old woman turns to the girl and says “Eh, come from your hiding place, I saw you follow me here and spy on me. Do you understand now, she who is curious? Go, thank God for the gift. Tonight you and your family will eat fresh fish. Did you know that the sky,

⁷⁷ “Durant tous ces mois de sécheresse, elle n’avait mangé que du poisson sec et encore, rarement” (13).

kingdom of the birds, is nothing more than a reflection of the waters?”⁷⁸ The old woman provides comfort to the young girl during this time of distress by showing her a food source and helping her to “realize the miracle of nature.”⁷⁹ In this story, human savvy finds a solution via creative thinking that is needed to explore alternate solutions in order to survive.

This story shows the struggle of hunger that the people of the Sahel were facing. Not only was there the physical pain of hunger, but the pain of losing the fertile home that they once had. The struggle of deciding to move or remain in the degraded lands of the past is one that many of the characters experience. This struggle is a display of the wisdom and traditional methods of survival that have allowed the population to persist, despite the climatic extremes they were facing. Furthermore, this story is a display of the connection between culture, land, and sea. The young girl and the wise woman are described in detail so that they are more than faceless individuals that are in need. This story publicizes the comfort that mysticism provides when government fails to distribute aid. The framing of this interaction is cultural, religious and spiritual but in the end comes back to the human desire to fight for survival.

The second story examined, “Cycle 5”, is the tale of a cow herder who is in desperate search of water as he wanders, after leaving his village, to support his flock. This story is of the desperation that the drought brought. “This country had become dry, dry; incredibly parched and abandoned.”⁸⁰ The repeated words “dry, parched, and abandoned” show the extremity of the situation. “In the stories of the elders, the herder heard the ancients talk of terrible droughts; but he had always perceived them like the other terrible things in mythology; terrible but distant. And

⁷⁸ “ Eh ! N’Goné M’Baye, fille de M’Backé, sors de ta cachette, je t’ai vue me suivre et m’épier ; tu as compris maintenant, curieuse ? Allons, viens ramasser le don de Dieu. Ce soir, toi et les gourmands de M’Baye, vous mangerez du poisson frais à la sauce claire. Savais-tu que le ciel, royaume des oiseaux, n’est que le reflet des eaux ? ” (18).

⁷⁹ “L’esprit enchanté de la fille n’avait pas encore réalisé le miracle de la nature que la vieille Codou, à quelques pas de là, se mit à pousser des cris percants » (17-18).

⁸⁰ “Ce pays était devenu sec, sec ; incroyablement desséché et abandonné” (22).

yet what he had lived during the past two months wasn't anything of stories; he lived a much more terrible reality."⁸¹ This comment shows the cyclic nature of drought, but this drought was worse than the elders had experienced. This drought was a more terrible reality. The difference between this drought and droughts of the past included the potential factor of the government worsening the situation. The area knew drought, but this drought, this time, after independence, was worse. This story, once again shows the struggles of thirst and the displacement it forced on humans and animals. The physical depiction of the herders search for water mirrors the political unrest that was present between the people of Senegal and the government. The herder finds water with his cows, but it is paved over and held in a large cistern. The herder bangs on the cistern with a bar of metal and releases the pressure that was building from within, sending a flood of water. The individual releasing the pressure that was building mirrors the pre independence revolutionary mentality that was accumulating within the masses. The pressure was manifesting within individuals in their frustration with the system and also within the system of resource misallocated by the government. The water was controlled by the government and distributed via pipes to the cities, despite the increased drought around the cities. People in the countryside, the area most affected by drought, were unable to access this water that had been paved over and controlled. The herder states, "This water here that collects at my feet is the water of our land. The water that has never belonged to anyone besides the ram god. This water goes to the city where it is sufficient to just open the tap to drink, bathe and to waste water unnecessarily on useless flowers or to wash cars that we will never drive."⁸² His observations show the tension

⁸¹ "Jadis, dans les récits des veillées, Yoro avait entendu les anciens parler de terribles sécheresses ; mais il avait toujours perçu cela comme les autres terribles choses de la mythologie ; terribles mais lointaines. Et pourtant ce qu'il vivait depuis deux mois n'avait rien des contes et des récits ; il vivait une bien plus terrible réalité" (23).

⁸² "Cette eau-là, qui coule sous mes pieds, est eau de notre terre. L'eau n'a jamais appartenu à personne d'autre qu'au Bélier Céleste. Cette eau va en ville où il suffit d'ouvrir un robinet pour en boire, se baigner

between the drought as a mythical occurrence within stories and the reality of the detrimental government distribution policies. There is a large discrepancy between the water that is needed in the countryside to live and the waste that occurs in the cities. Not only will the water go to useless acts such as ornamental flowers, but it will go to cars that the majority of the Senegalese population will never have the chance to drive.

This story ends on a mystical note with the celestial ram declaring, “It’s me who gave water! It is me who gave water! Ah, ah, ah! The water belongs to me! All water belongs to me!”⁸³ This deity was “born” from the hardship of survival and fight. The water that belongs to this god gives hope to the masses because he represents survival. He represents the people who are fighting drought to survive. If he can bring water, then the masses will receive water if they fight the struggle of thirst. This story ties into the reality of unequal water distribution in Senegal during the 1970s and represents the brewing frustration within the lower classes. Government resentment is stirring and continues in “Cycle 6”.

“Cycle 6” is a story of interactions between youth and elders during the drought as well as interactions with governmental aid. It is set on the coast of Senegal in a fishing town where a father and son go for a walk on the beach and observe the unloading of food aid by white men into the ocean. They are encouraged by the white men to take some food and they go back to distribute it to their village. In the beginning of the story the boy asks, “how do you share misery?”⁸⁴ when describing the effect of the drought on the people in the inland. One time the young boy was told by his father, “[d]o you know that even the fish need rainwater? If rain is

et meme la gaspiller à arroser des fleurs inutiles ou à laver des voitures où nous ne monterons jamais.” (26).

⁸³ “C’est moi qui donne l’Eau! C’est moi qui donne l’Eau! Ah, ah, ah! L’Eau m’appartient! Toute l’Eau m’appartient ! “ (28).

⁸⁴ Et comment échanger la misère? (29).

scarce, they disappear into the salty sea. Rain is a sign to all living things!”⁸⁵ They had experienced a drop in the number of fish, which worsened their ability to trade. He didn’t know why they received the food from the white men, but they were hungry. Their confusion about aid, the effects of drought on the coast, and the role of the government are apparent in their excitement, but bewilderment with aid. “It is us who have hunger, not the politicians that always use [the resources] for themselves when it is destined for us. Warn everyone, get the big boats, a mountain of rice on the beach of dolphins.”⁸⁶

This story shows the resentment towards the Senegalese government as well as the appreciation and positive depiction of the white man as the aid provider. There was evident tension between state-level discourses on aid, both in their acceptance and in their rejection of it. If they rejected the aid then the people most affected by drought were not served. If they rejected it because of a desire for autonomy from other countries, then the people making decisions would have lesser effects than the common man. The men with flowers and fancy cars are never the men that starve. This story gives a voice to the “common man” and his hope for aid. They had for so long heard that aid would come, but didn’t know how or from where. The story shows a reverence for the ocean and the comfort that it brings knowing that they live near water, despite not being able to drink it. The story ends with the fisher song of gratitude for the ocean (viewable in the introduction of this thesis)⁸⁷. Even when the ocean doesn’t provide fish, it provides aid in the

⁸⁵ Sais-tu que même les poissons ont besoin de l'eau des pluies? Si la pluie se fait rare, ils disparaissent dans la mer salée. La pluie est signe pour tout ce qui vit ! (29).

⁸⁶ C'est nous qui avons faim, pas les politiciens qui utilisent toujours à leurs fins personnelles ce qui nous est destiné. Prévenez tout le monde, sortez les grosses priogues, une montagne de riz nous attend sur le banc des dauphins. (31).

⁸⁷ “Oh ! Marvelous sea, how you are strong, Oh ! Sea, how you know how to move, how your movement is majestic. But yet you know, sea, that what moves you is stronger than you”

form of ships bringing boxes and food from others.⁸⁸ The stories within *Cycle de Sécheresse* compile the many opinions of drought within Senegal.

Sampling of Opinions- 2014 Interviews by the Author

The informal conduction of these interviews gave the writer perspective on the viewpoints of three individuals who lived through the postcolonial era of Senegal and experienced the droughts. They represent a small sampling within Dakar and are all experts within their fields.

The following is a description from notes I took while discussing Franco-Senegalese relations with Ibou Diallo, a history professor in Dakar, Senegal.

The city of Dakar was created in 1857. It was a peaceful European takeover because European traders had goods that the Senegalese wanted. In 1862 all of the land wasn't in the name of one person or another but in the name of the government, which meant that France owned 95%. The idea of houses was that they would last at most, 1-2 years for the Senegalese whereas the French built houses to last a lifetime. Before Europeans there was no money or evidence of infrastructure beyond trade. This cannot be confirmed because there is no written history, only oral. The current system is completely based on European sensibilities so of course there is poverty!

The French came into Senegal and introduced ideas to the Senegalese that they hadn't considered before. They were told that the land belonged to the French and that they had to move. With the invasion of the Europeans there were many diseases that spread. The Europeans thought that the problem was simply hygiene and the Senegalese felt it was due to bad spirits. With the high number of people living in close quarters there were many smells and sounds that accumulated. The French were displeased with this proximity and the French set up two parts of the city. One part was for the French colonists and the other part was the 'no-man's land'.

There were many differences between the Senegalese and the French that caused tension and furthered the desire to live separately. It makes sense to segregate within a system because you are living intimately with them and often there is more in common with people of the same culture. Property, health and ideals for a village were not compatible. These differences were rectified by the French with laws that were enforced with punishments. The Europeans had more power in the economy because they were the Senegalese connection to Europe. They controlled safety in Dakar because they established prisons, laws, a police force, and lights within the city. The French imposed education on the Senegalese and required certain health standards. For example, it was required to look clean and to maintain the area in front of the house (enforced with fines for those who failed to adhere). The Europeans brought disease and pests creating fear within the Senegalese that associated such things with evil spirits. With yellow fever

⁸⁸ Sow, Cheikh C. *Cycle de sécheresse et autres nouvelles*.

running rampant within the population, people were displaced from the city to other living arrangements. If the Africans left their homes to get treatment in quarantine, they were often unable to return to their homes if they were in desirable neighborhoods. There was a vacant area between the French quarters and the Senegalese living area in which no one could live.

Lastly, the colonists set up streets, sewers, electricity and running water in Dakar for themselves. The lower classes within Senegal have less access to water and spend more time and money trying to acquire it than the rich. There is less access to running water and bottled water is more expensive. This is injustice. The population of Dakar continues to grow rapidly and the government tries to find solutions but the capital is deteriorating in appearance and education opportunities. The legacy of colonialism and the future of Senegal is to become more European because the economic system is European and the rules of society are starting to change.

The economy of Senegal is fragile, affected by unfair trade, agricultural, based on specialty products, dependent on the prices in richer countries, obliged to take on taxes of products that ensures the persistence of poverty. Poor countries take on debt to produce products that rich countries buy but in the end, the poor countries remain in debt because they need the technology and consumers from the rich countries.

The parts that struck me most about this interview were the ways in which infrastructure was developed. The implementations by the French were primarily done to better the city for the colonists so that Dakar was a more hospitable living situation and the tensions that arose from this were voiced in the stories of *Cycle de Sécheresse*. There were huge differences in ideals for the city and for lifestyle between the French and the Senegalese, causing tension and separation. The French had the clear advantage over the Senegalese because they were in control of the economy, government and police force. The French created systems that still persist during postcolonial times. The transfer of power from the French to the “Frenchified Senegalese” maintained the uneven power dynamic that were criticized by the Senegalese lower classes. There was a disadvantage for the Senegalese within the French system because it was foreign to the culture that was present before French involvement. This ongoing enslavement is still present in the agricultural system in Senegal where the farmers are continually in debt to the technology of the western world.

When faced with technological problems, people look to the ideal of the simple agrarian lifestyle that functioned in the past. This theory is expressed by Thoreau in *Walden*, “[b]ut he warned that often with these ‘modern improvements’ there is ‘an illusion about them; there is not always a positive advance.... Our inventions are wont to be pretty toys, which distract us from serious things. They are an improved means to an unimproved end.’”⁸⁹ Thoreau expresses his skepticism with technological advances and their distractions. He feels that technology brings people away from serious things and create this illusion of progress. His lifestyle suggests that rejecting modern technology would bring about a more positive lifestyle.

In contrast, the essay “Evolve” written by Michael Shellenberger and Ted Nordhaus in the book *Love Your Monsters*, states

The solution to the unintended consequences of modernity is, and has always been, more modernity — just as the solution to the unintended consequences of our technologies has always been more technology. The Y2K computer bug was fixed by better computer programming, not by going back to typewriters. The ozone-hole crisis was averted, not by an end to air-conditioning, but rather by more advanced, less environmentally harmful technologies.⁹⁰

This essay encourages the adoption of new technology in order to find progress from broken systems. The ideal of reverting back to times when life was more idyllic, in theory before colonization in Senegal, is not the solution. Senegal cannot revert back to a precolonial system because they have already been shaped by history. Instead, “Evolve” would challenge the Senegalese to progress in a way that was sustainable to the longevity of the community. Ibou Diallo challenges Senegal to escape the influence of French technology, but also to avoid the Thoreau lifestyle that is unrealistic. The ultimate goal is progression towards a more independent and efficient lifestyle where more Senegalese citizens are supported through infrastructure.

⁸⁹ Henry David Thoreau, ‘Walden’ in Carl Bode (ed), *The Portable Thoreau* (1982) 295.

⁹⁰ Shellenberger, Michael. *Love Your Monsters: Postenvironmentalism and the Anthropocene*. “Evolve”, Breakthrough Institute, 2011.

The following is an interview with Cheikh Sow, author of *Cycle de Sécheresse* based off of notes taken during his talk of his book:

This book is a representation of the people of Senegal that experienced drought as told by characters created that are found in every village and township. These are the voices of the nameless in the news. These stories explain the struggle of independence. There is an identity struggle in Dakar between wanting the lifestyle of the French and being tied to Senegalese roots. There is a struggle for the nuns in watching people die before they can help them. Young girls and boys struggle to navigate sexuality during a time when traditional and new ideas were clashing. This book is a snippet of ideals, problems, struggles and relations during drought in a newly independent nation.

Talking with Cheikh Sow gave me an understanding of the importance of *Cycle de Sécheresse* as a representation of society within Senegal during the 1970s. His stories give the perspective of many different viewpoints and the multitude of ways that independence and drought affected Senegal. He expresses both the plight of the French elite as well as the frustration of the common people with the power dynamics post independence. He describes the seduction of the French lifestyle in the security it gives. The French and eventually the Senegalese elite enjoyed luxuries such as stable homes, nice cars, gardens, tap water and western clothes. In contrast, the poor in the countryside were hoping that people in the cities would make decisions that would bring aid to the starving. His use of language between old Senegalese mysticism and new ideas of change and rebellion show the multiplicity of Senegalese identities at the time. “Cycle 5” as described within the literature review section of this analysis uses ideas such as the celestial ram to represent the new ideas of one’s own will and the ability to survive with a fight. Sow created a timepiece that captured many opinions around a disaster that affected all classes in some way. His book provides a class-conscious narrative of the political struggle of the 1970s that gave the poor of Senegal a voice along side the rich.

In order to understand the dynamics of the countryside that I knew had been most impacted by drought, I followed an SDE worker who checked the sanitation of the water in the

small village of Sokone. Sokone is located in the center part of Senegal within the delta region called “Sine-Saloum”. This region has experienced intense desertification from warming climate and from deforestation. The day that I was an SDE shadow started at sunrise when we boarded a small motorbike and rode across the countryside to check two water pumps and sanitation sites. The first two sites pumped ground water that was transported to a third site that treated and stored 300,000 liters of water for the town of Sokone. The water comes into the treatment plant through two pipes and a third pipe releases a set amount of bleach. This site provides water to the part of Sokone that has piped houses and is able to pay for water. The rest of the village relies on wells that are located in each of the smaller communities.

When asked about the ownership of SDE, the head of the Sokone office made it clear that SDE is owned by the French but is fully represented by Senegalese in Senegal. From this experience, I was able to observe the growing access to piped drinking water within the Senegalese countryside. Additionally, I was able to see the pride of Senegalese workers that were able to bring clean drinking water to their fellow community members. This experience showed great improvement in access for small villages to secure drinking water sources. The plight of SDE to expand to more parts of Senegal, as described in the section “Water Distribution and Rights from the Colonial to the Postcolonial Era”, has been met. The majority of infrastructure within small townships is mainly accessible in the “downtown”, though they are hoping to continue expanding to include more and more villages and remote communities. The ownership of SDE by French sources was not apparent during my observations and the workers in Sokone were proud that all workers and most officials were Senegalese.

Conclusion

During times of vulnerability such as during the drought in the 1970s and the pipeline break of 2013 the Senegalese government was faced with decisions surrounding the acquisition of foreign aid to help alleviate citizens suffering from drought. The climate in Senegal is variable as a result of the aridity of the land and the sensitivity to climate feedbacks. During times of drought, the legacy of France is apparent in the dynamics between classes that mirror colonial dynamics. The ongoing involvement of French companies in the water system is a motivator for the French government to provide support to the Senegalese government. French aid is necessary to alleviate Senegalese suffering within the middle and lower classes from water shortage, but is not without an economic agenda.

Throughout Senegal, there are many accounts for the cause of drought. Desertification is a combination of anthropogenic practices and natural cycles. Despite the scientific rationalization for water shortage, the information is not available to all populations within Senegal. The distribution of information that has shaped people's understanding of drought is representative of the class dynamics that were established during colonialism.

Within rural parts of the Sahel, religion is used as an explanation for the observed changes. God and gods are held responsible for the availability of water and food. The celestial ram, described in "Cycle 6", is known to bring water to the people if they fight enough against the struggle of thirst. In "Cycle 3", the old woman attributes the fish "falling from the sky" (in reality from the scarred Pelicans) to God.

Within the capital of Senegal, the government is seen as the main culprit for the lack of water. The power dynamics between the Senegalese elite and the less privileged communities are most evident within the compact space of a city. Frustrations and resentment of the underserved

populations turn towards the upper classes when there is a discrepancy in the access to water. This was evident within “Cycle 6” when the father describes the water being used for flowers and nice cars while other people in the countryside die of thirst and hunger. During the drought of 2013, the lower classes who were without water for weeks blamed the Senegalese government and were suspicious of the cause of drought. They felt that it was a ploy for bottled water companies to make more money. The Senegalese government was accused of failing its citizens by not solving the problem in a timelier manner.

Colonial rule of the French set up a dichotomy between France as the ideal and the villain. The assimilation of the Senegalese to French values was rewarded by access to education and power. This increased access to privilege made the French lifestyle an ideal within Senegalese culture. In contrast, adopting French traditions could be seen as a rejection of traditional Senegalese culture. “Colonial rule was not a straightforward, dichotomous ‘us’ and ‘them’ situation, but a constant process of negotiation in which the colonizer and the colonized became implicated in which they were mutually shaped by each other.”⁹¹ The image of the Frenchman as the enemy that disrupted the peaceful, agrarian life is contrasted with an ideal image of the French living lives of privilege. The French colonist as depicted in two extremes represents the views of the two classes in Senegal towards the former colonists. The lower classes viewed the colonizer as the enemy and the upper classes viewed his life as the goal.

Though France no longer occupies Senegal, there is still a consistent influx of information that connects Senegal to European sensibilities. Tension between ideal views of traditional Senegal and ideal views of the French lifestyle create problems within political decisions. The

⁹¹Chafer, Tony. *End of Empire in French West Africa : France’s Successful Decolonization?* 20.

Senegalese government is presented with the decisions of working with foreign aid or working to be autonomous at the expense of the poor.

The issues related to drought in Senegal are complex and involve multiple issues. While it is convenient to blame colonialism for all the problems in West Africa, there are other contributing factors such as historic cyclical weather patterns, increase in population, changes in the use of the land from small-scale farms to larger export crops. There is no one factor that can be blamed for desertification, as the definition established.

Discussion-Neocolonialism in Infrastructure

Though water shortage is a specific example within Senegal that represents persistent colonial social dynamics, there are many areas of study to which these circumstances apply. The situation in Senegal of colonial shaped infrastructure is not unique to water distribution, nor is it unique to French colonies. Many postcolonial cities can trace their infrastructure development to colonial times. In serving colonial cities, the landscapes of rural areas were changed to support particular crops and streamline the transport of resources. The dynamics between colonizers and colonies are evident in the distribution of infrastructure in postcolonial times.

The development of roads was another aspect of the “civilizing mission” that was disguised as being beneficial to the Senegalese, while in reality it was more beneficial to the streamlining of export of goods for the French. The roads within West Africa have seen little improvement since colonization. In October 2012, China partnered with the Economic Community of West African States in an agreement for economic cooperation and infrastructural development⁹². Part of the project is to build a highway that starts in Dakar, Senegal and connects to Lagos, Nigeria. This road construction sets up a new dynamic where there is financial backing of infrastructure within West Africa without the benefit of governmental control for the financier.⁹³

In addition to road infrastructure, France is responsible for the implementation of the education system within Senegal. The public university in Dakar was originally built to house and

⁹² Sotunde, Olywabusayo. "China, ECOWAS Sign Agreement On Infrastructural Development." Ventures Africa. October 26, 2012. Accessed March 24, 2015. <http://www.ventures-africa.com/2012/10/china-ecowas-sign-mou-on-infrastructural-development/>

⁹³ Duffield, Andrew. "Chinese Infrastructure Investment: Paving a New Road in West Africa? | Africa Portal." Chinese Infrastructure Investment: Paving a New Road in West Africa? | Africa Portal. November 27, 2012. Accessed March 24, 2015. <http://www.africaportal.org/blogs/community-practice/chinese-infrastructure-investment-paving-new-road-west-africa>

educate up to 7,000 students. It was established in 1957 by French colonial government.⁹⁴ At the time of independence in 1960, there were just over 1,000 students enrolled. In 2015, there are over 60,000 students. There are ongoing strikes that shut down the university for months over the tuition fees. Students feel that they should not be required to pay tuition fees whereas the Senegalese government feels it is necessary to improve the university. This dilemma poses a new opportunity for Senegal to establish a self-sustaining system for education. It allows for the Senegalese to shape their own education system with potential money they will generate from taxes and tuition fees. With an influx of funds, Senegalese students will be able to establish their own ideals for education, as opposed to a strictly French system.⁹⁵

Colonial relations continue to impact infrastructure, regardless of the resource discussed. Access to roads and to education is based on class. The poorest parts of Dakar are slums that function without running water, sewers, or established schools. The areas of the city that are attended to by governmental systems such as trash pickup, police forces and water are the areas that were previously occupied by the French colonists.

The dynamic of infrastructure catering to colonists is present in areas outside of Senegal. In Mali, French colonists created irrigation systems that supported industrial cotton agriculture. In the late 1800s, the price of cotton grown in the United States increased. Imports from the US made up 75% of cotton in France. The price increased weakening the French buying power of cotton. British colonies were supported by their cotton industries in Egypt and India. Cotton was grown on a local level in present day Mali, a former French colony. World War I exacerbated the price of cotton so that between 1914 and 1918 it increased by 500 percent. To stabilize the

⁹⁴ "Projects in Senegal." Accessed March 30, 2015. http://web.idrc.ca/es/ev-83062-201_104882-1-IDRC_ADM_INFO.html.

⁹⁵ Polgreen, Lydia. "Africa's Storied Colleges, Jammed and Crumbling." *The New York Times*, May 20, 2007, sec. International / Africa. <http://www.nytimes.com/2007/05/20/world/africa/20senegal.html>.

availability of cotton as a raw material in France, the colonists introduced US cotton strains in present day Mali. In order to support the water intensive crops, French colonists implemented an irrigation system that uses two branches of the Niger River and distributes the water into three canals. The Markala Dam was built by French colonial authorities between the years of 1934 and 1945. The stored water was used for colonial crops such as cotton and sugar cane. This particular distribution of water limited the ability for growth of traditional crops by local tribes.

Furthermore, the cotton industry mandated particular living habits such as the number of hours individuals were required to spend in fields, where houses could be built, and what populations were given responsibility. The cotton industry started by French colonists has shaped the landscape of Mali in both physical and social realms. The way that water was used still determines the way that water is distributed during postcolonial times given the particular structures put in place.⁹⁶

Like Dakar, Bombay, modern day Mumbai, was occupied by the British. The particular infrastructure that was created within Bombay was done so in an effort to sanitize the people along European standards.

The view that British models should be developed was echoed across the Bombay municipality over time; as Gandy (2008) points out, water engineers like Hector Tulloch argued in the early 1870s that if the technical issues, borrowing capacity and powers of the municipality could be resolved, then an integrated hydrological system such as London's or Paris' could be developed. The colonial mode of measuring improvement through comparison meant that there was little attempt to develop workable practices more in line with popular activities (Headrick, 1988).⁹⁷

⁹⁶ Beusekom, Monica M. Van. *Negotiating Development*. Portsmouth, NH : Oxford : Cape Town: Heinemann, 2001.

⁹⁷ McFarlane, C. "Governing the contaminated city: infrastructure and sanitation in colonial and postcolonial Bombay." *International journal of urban and regional research*. 32 (2). (2008). 415-435.

The city of Bombay received water infrastructure, sewer systems and mandated health codes during British colonial times. Though these changes were advertised as benefitting the masses, they mostly served the rich colonial eras. This is described by McFarlane as, “In the latter half of the 19th century, the city’s European inhabitants increasingly abandoned the Fort to commerce, and moved to the less crowded, coastal environs at Colaba and Malabar Hill (Tindall, 1992). The functionalist city-wide urban metabolism that some reformers sought ultimately served the elite and reinforced existing patterns of inequality in the city.”⁹⁸ Within Mumbai, like Dakar, infrastructural inequalities between classes have persisted through modern times. The access that was established by the British is still present, whereas people in the slums of Mumbai battle against cholera and disease without water infrastructure.

Though many cross-sections of infrastructure are accurate representations of colonial power dynamics, this thesis aimed to show how access to infrastructure continues to be affected by colonial legacies through neocolonialism. The particular structures that were established during colonial times have created an inequality that is most evident during times of resource shortage. Times of shortage make disparities between populations that do not have access to resources and those that do. The underserved people experience the greatest impacts while the upper classes have the luxury of distributing aid. In postcolonial countries, separation between classes holds remnants of colonial relations wherein the upper class mimics the access of colonists and the lower class remains in the role of the colonized. This separation is most evident in the distribution of resources through colonial infrastructure.

⁹⁸ McFarlane, C. “Governing the contaminated city: infrastructure and sanitation in colonial and postcolonial Bombay.” 415-435.

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