

## Lesson Title: Francophone Africa

**Lessons Summary:** Students will identify the former French colonies of Africa as a region. They will compare data of this region, including HDI, infant mortality rates, death rates and GDP, to other regions in Africa and the world. They will also compare this data with data on natural resources reserves for the region.

**Lesson Objective:** Students will use geospatial data to identify, describe, compare and analyze the relative “health” status of former French colonies in Africa. They will use this information to hypothesize as to the relationships between the data.

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Before you begin using this module, you will need to know about using a Web-based GIS viewer. You can do this by watching the tutorial video or working through the tutorial. The tutorial video, student activity, and Web-based GIS Tutorial Viewer can be found at <http://gis.lanecce.edu> → “Modules” tab → “Tutorial” link. The activity works best with a high speed Internet connection.

**Prior Skills:** You will need to know how to turn layers on and off, use the ID tool and, zoom in and out of the map, toggle from layers to the legend, and perform a search (Boolean) query.

**Remember,** computer steps are indicated by a ► symbol and questions you need to answer are numbered.

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- Open your browser and go to the following web site

[http://www.archidev.org/article.php3?id\\_article=376](http://www.archidev.org/article.php3?id_article=376)



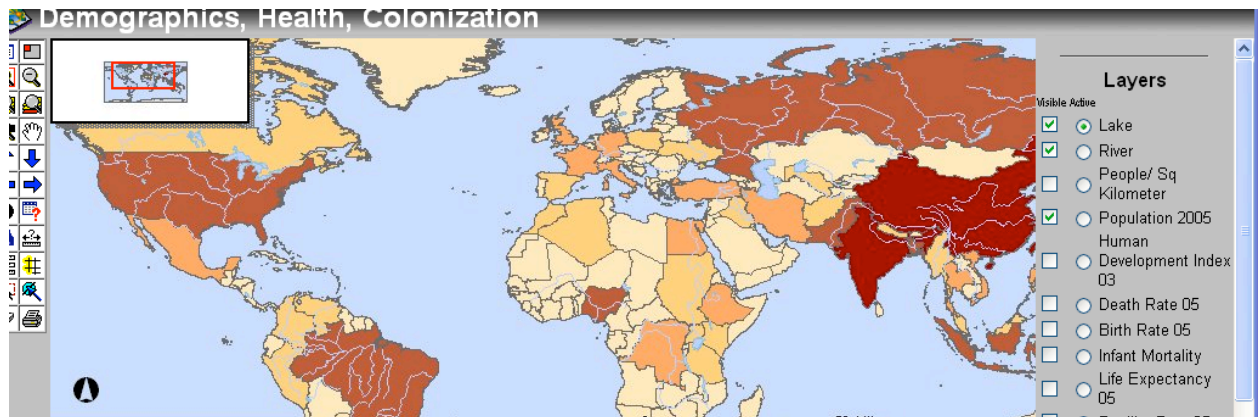
The screenshot shows a website with a green header labeled "Asia Link" and an Indian flag. On the left is a navigation menu with links: APS p3a resources, bibliographies, Indicators - Statistics, links to useful websites, Mumbai, online documents, and Pune. The main content area has a breadcrumb trail "> Asia-Link" followed by the title "indice de développement humain (i.d.h) , notion" and the source "source : BRISES, Banque de Ressources Interactives en Sciences Economiques et Sociales,". Below this is an asterisk and the word "Lexique".

- Read the link

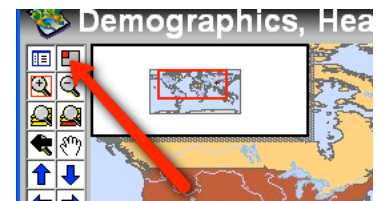
Q1) *Resumez en français, dans vos propres mots, ce que représente i.d.h..*

- ▶ Now open the following link in your browser to <http://arcgis.lanecce.edu/website/healthdemog/viewer.htm>

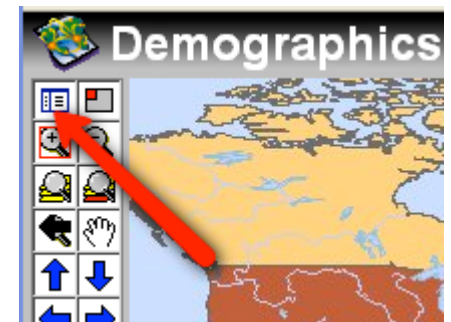
You will see a map of the world that looks like this.



- ▶ Click the minimize button in the top left hand corner to hide the view locator window.

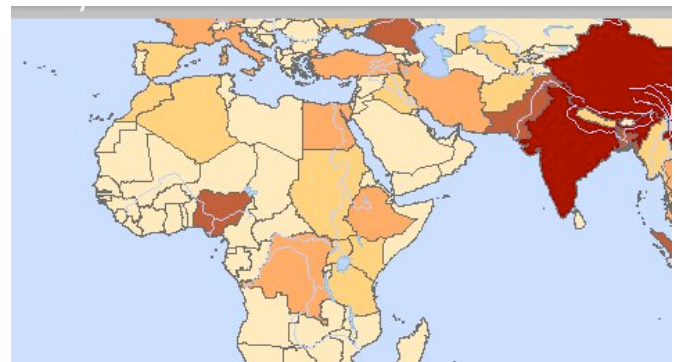


- ▶ Click the “Layers/Legends” button on the top left hand corner and observe how the right hand side of how window displays either the layers available to work in, or the descriptive legend of the active layer. You will find this button very useful as you work today. The “Layer” tells you which layer of information is visible on the map. The “Legend” will help you interpret the color-coded information in relative (if not absolute) terms.



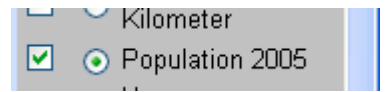
- ▶ Now get the “magnify” tool from the tool box. 


- ▶ You can use it to draw an area around the African continent and “zoom in” so your display will look like this:



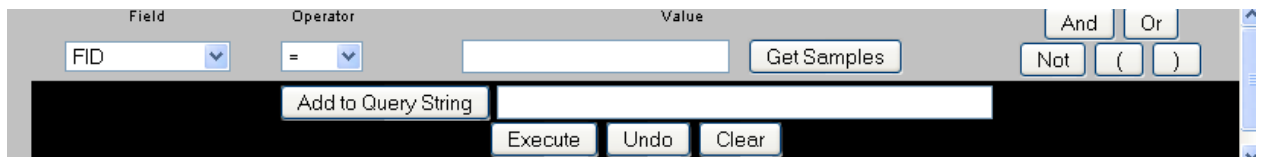
One of the first tasks we need to accomplish is to identify actual former French colonies. We can do this by using the “**query**” tool.”

- ▶ Make Population 2005 layer is **Visible** and **Active**, then **Refresh** the map.

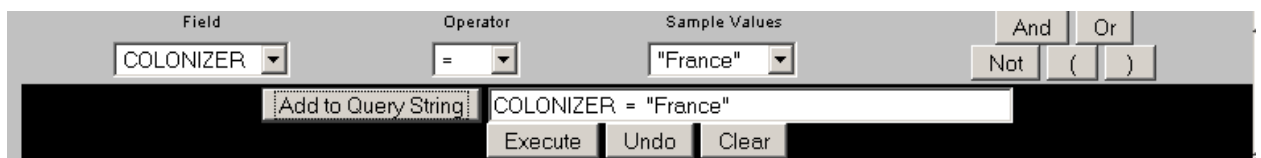


- ▶ Click the query tool. 

Notice when you click the query tool, the bottom of your screen is now displays a panel where we can make requests to highlight specific information.



- ▶ Pull down the “**Field**” menu bar and choose “colonizer.”
- ▶ The operator pull-down menu should be “=”.
- ▶ Now click on the “**Get Samples**” menu. It will flash, and then you will be able to choose “France” from the pull down menu.
- ▶ Now click the “**Add to Query String**” button and “**Execute**.” Your map should redisplay with former French colonies outlined and clearly visible.



- ▶ Look at the print out of the political map of Africa which has been provided to you.

Q2) Identify the former French colonies on the map. Describe where they are in Africa. Are they clustered or dispersed? Is there a physical connection between them?

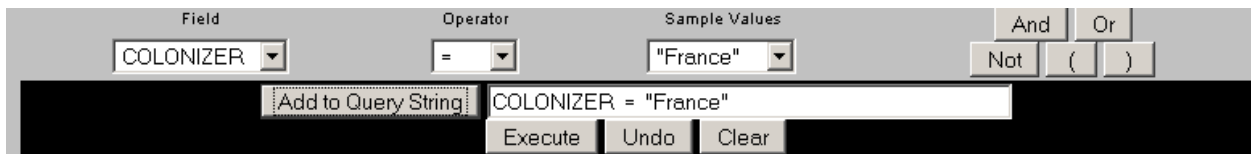
- ▶ Next, using the **zoom out** tool,  zoom back out so that you have a world view of your map.

You are going to evaluate several demographic variables to see if there are patterns between colonization and these variables.

- ▶ Make the Development Index 03(HDI) active and visible.
- ▶ Make sure no other country layers are visible.
- ▶ Refresh the map.
- ▶ Repeat your query to select the French colonies.
- ▶ Click Execute



- ▶ Toggle back to the Legend Menu



Q3) How does the HDI of the former French colonies –heightened in blue -compare to other areas/regions of Africa? Describe any patterns you are seeing. How do these former colonies compare to other regions of the world? Are there any observable spatial patterns?

The next demographic variable you will examine are the death rate, infant mortality, Life expectancy, and GDP

**The death rate** is the average annual number of deaths during a year per 1,000 population at midyear; also known as crude death rate. The death rate, while only a rough indicator of the mortality situation in a country, accurately indicates the current mortality impact on population growth. This indicator is significantly affected by age distribution, and most countries will eventually show a rise in the overall death rate, in spite of continued decline in mortality at all ages, as declining fertility results in an aging population.

**The infant mortality rate** number of deaths of infants under one year old in a given year per 1,000 live births in the same year. This rate is often used as an indicator of the level of health in a country.

**Life Expectancy** is the average number of years to be lived by a group of people born in the same year. Life expectancy is also a measure of overall quality of life in a country and summarizes the mortality at all ages.

**The GDP** (gross domestic product) or value of all final goods and services produced within a nation in a given year.

- ▶ Repeat the process with Death Rate 05.
- ▶ Turn off Development Index. Make Death Rate active and visible and refresh the map.
- ▶ Set up your query to select French colonies.

Q4) How does the death rate of the former French colonies compare to other areas/regions of Africa in each one of these categories? Describe any patterns you are seeing. How do these former colonies compare to other regions of the world? Are there any observable spatial patterns?

- ▶ Repeat the process with Infant Mortality

Q5) How does the Infant Mortality of the former French colonies compare to other areas/regions of Africa in each one of these categories? Describe any patterns you are seeing. How do these former colonies compare to other regions of the world? Are there any observable spatial patterns?

- ▶ Repeat the process with Life Expectancy 05

Q6) How does the Life Expectancy of the former French colonies compare to other areas/regions of Africa in each one of these categories? Describe any patterns you are seeing. How do these former colonies compare to other regions of the world? Are there any observable spatial patterns?

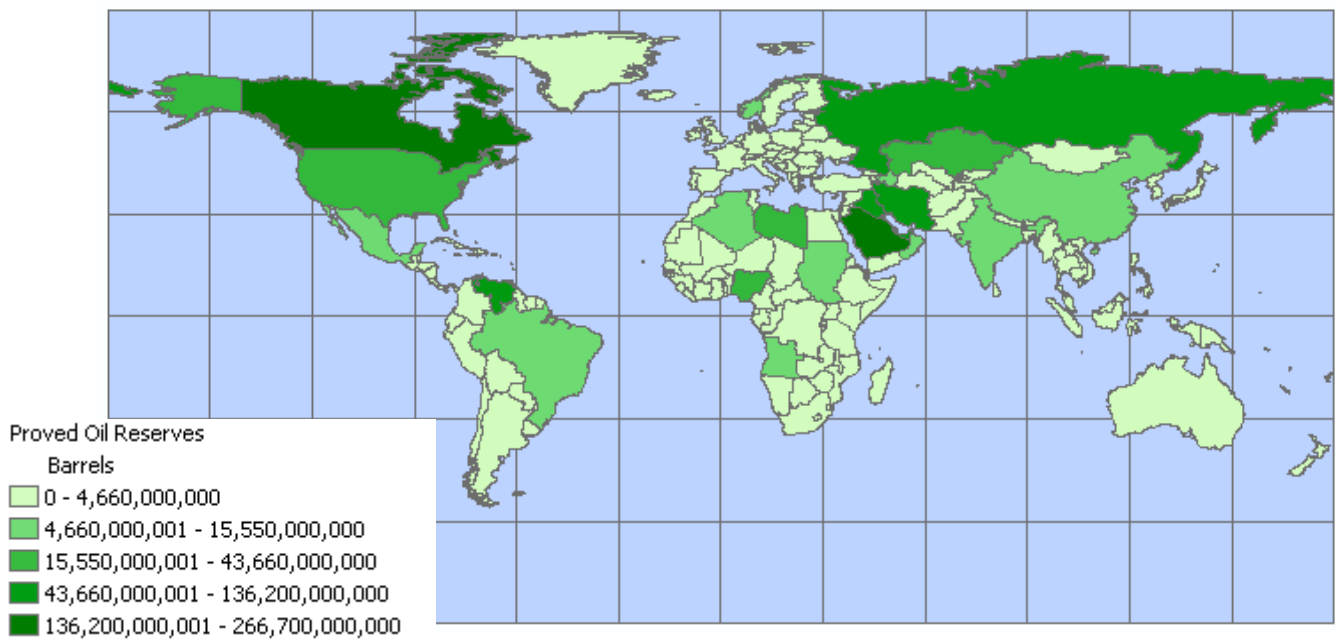
- ▶ Repeat the process with GDP 2003

Q7) How does the GDP of the former French colonies compare to other areas/regions of Africa in each one of these categories? Describe any patterns you are seeing. How do these former colonies compare to other regions of the world? Are there any observable spatial patterns?

Q8) Are there any observable relationships between the patterns you see on one layer and another? If so, can you speculate as to how these data are inter-related? If there are countries within the African region doing well (or better) than the former French colonies in general, can you hypothesize as to why?

The map below – created with CIA World Fact Book data - shows the 2009 estimates for the stock of proved reserves of crude oil in barrels (bbl). Proved reserves are those quantities of petroleum which, by analysis of geological and engineering data, can be estimated with a high

degree of confidence to be commercially recoverable from a given date forward, from known reservoirs and under current economic conditions.



Compare this map with information you have been observing previously.

Q9) Does this add anything of value to help you with speculating or hypothesizing about the general “health” of some of the former colonies you have been looking at? Does it help explain any of the “anomalies” on the African continent? If so which ones?

### Career Extension

- ▶ Go to the website <http://esri.com/industries.html>
- ▶ Find a career from the list that is of interest to you. For example: In the Natural Resources list, there is a link to forestry. In the forestry link, there are several job descriptions.
- ▶ List four ways GIS is used in the career you choose.
- ▶ Conduct an internet search to find information about salary ranges and possible job locations.