NIGERIAN AQUACULTURE EXPANSION UTILIZING AN EXCLUSIONARY BASEMAP FOR IMPROVED SPATIAL PLANNING

Nigeria is Africa's' most populated nation with a current population of approximately 190 Million with a median age of 18.4 years. It will surpass 300 million by 2050. The countries population has shifted away from Agricultural Subsistence Farming to a more urbanized population dependent on food imports requiring foreign exchange for payment. The oil sector accounts for 35% of GDP, 90% of export revenue, and 96% of its foreign exchange. Nigeria needs economic diversification if it is to continue towards a long-term path of prosperity. The Price of Oil has been week for the last decade. Nigeria implemented an import substitution policy to slow the outflow foreign reserves to pay for the inflow of imports and improve economic diversification. The policy tool of zero fish import quota , will help accomplish the task if areas of the country can be identified that are sustainable for Aquaculture Production and are economically viable based on world price of fish. Spatial Planning is first step in the process of building an infant Aquaculture Industry. Import Policy provides the breathing room by isolating the industry from the competitive World Price of fish.

Initial background research on the country's endowments lead to the determination that a more unified approach in visualizing where the development should occur is needed . Simply put, knowing the aggregated amounts of the countries endowments is not adequate for the task at hand. To expand Aquaculture in Nigeria, analysis of how the endowments are distributed through the country needs to occur. Producing an Exclusionary Base Map is the first step in determining how Aquaculture is to expand in Nigeria.

Ideally, research would be accomplished by contacting one of many credible governmental agencies within Nigeria to download the various shape files, raster files and Geo- databases from which analysis could occur. Countrywide analysis in this instance is far less than ideal. Initial web-based searches for the Ideal data has proven unfruitful. The data that has been gathered is not unified or is somewhat lacking relevance for the initial exclusionary areas .

Narrowing the Data using a list of key weighted variables will filter the total available land area down to a manageable development area . The initial data analysis is simple raster-based landform and population data. Shorty preliminary questions were posed to experts in the field of Aquaculture Research in Nigeria and a generalized academic review of the industry expansion issues occurred.

A credible expansion map for Aquaculture will require a multitude of variables and several industry opinion surveys at various levels of the production and consumption paths. Each variable and opinion survey need targeted local data collection.

Groundwork is underway for follow-up questions with local Nigerian experts. A preliminary limited variable Aquaculture Development Map provides the local experts insight to the intended approach method of producing a refined Aquaculture Development Map. Each summation of local expert opinions improves the variables list and narrows the potential area by exclusion. This is necessary due to the difficulty at acquiring credible data on a Countrywide scale. The preliminary Development Map is only based on

Landforms, (based on growing vegetation types), waterways, elevation and slope of land ,population distributions, and known Conflict Hazard Areas . The preliminary Map using limited simplified variables

production resources (Feed mills, Hatcheries), known Environmental Hazard Areas, and known Political Hazard Areas shall be utilized in narrowing the Aquaculture Industry Area. The results of the process is to only narrow the potential research area for further local analysis