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A Survey on the Agricultural Prospects and Potentials of the Niger Delta, in a Post Oil Era

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Keywords: *niger delta, agriculture, crops, products.*

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A Survey on the Agricultural Prospects and Potentials of the Niger Delta, in a Post Oil Era

Uche Chima ^α, Ajje Eunice N ^σ & Familusi I. C. ^ρ

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Keywords: niger delta, agriculture, crops, products.

I. INTRODUCTION/BRIEF HISTORY

The history of Nigeria as a nation to a great extent swings around the Niger Delta. For many centuries, even before the discovery of crude oil, the Niger Delta region has always played prominent role in the fiscal history of Nigeria. Wikipedia (2016) reports that the Niger Delta covers 20,000km² within wetlands of 70,000km² formed primarily by sediment deposition and home to 20million people of 40 different ethnic groups, making up 7.5% of Nigeria's total land mass and the largest wetland and, the third- largest drainage basin in Africa. The Niger Delta environment has been classified by some scholars into four ecological zones: coastal barrier islands, mangrove swamps, freshwater swamps,

and lowland rainforests. The region has sandy ridge barriers along its coasts, rivers, rivulets, streams, mangroves, low land rain forest and numerous creeks.

The Niger Delta Region is inhabited mainly by the minority tribes of Southern Nigeria which comprise of the states of Rivers, Bayelsa, Cross River, Akwa Ibom, Edo and Delta. For political and fiscal convenience and reasons, the region is redefined to include the neighbouring three other oil producing states of Abia, Imo and Ondo. This map may still expand as Lagos and Enugu States have joined the league of oil producing states.

According to Tamuno and Edoumekumo (2012), long before independence, the Niger Delta region has been, to a reasonable extent the fiscal stay of the Nigerian economy, asserting that the Nigerian economy depended on the enormous agricultural potential of the region and was sustained by it from 1558-1855(about 297 years) with palm oil produce before the amalgamation of the Nigerian State.

For some time now, agricultural activities in the Niger Delta have been at very low ebb. This is the resultant consequence of oil exploration in the region, degraded environment and polluted farm lands and waters by oil spills. Ike and Ekanem (2010) have also noted that the massive land taken by the oil companies has diminished the available land for agriculture. Wikipedia (2016) painted another worrisome picture of the Niger Delta land when it reported that the region can experience a loss of 40% of its inhabitable terrain in the next thirty years as a result of extensive dam construction in the region, a visible threat to agriculture. This is Nigeria's Niger Delta.

II. STATEMENT OF THE PROBLEMS

In spite of Nigeria's viability in terms of agricultural activity, Nigeria still imports significant amount of what it can produce locally because of neglect and inconsistent policies in the past. This has put enormous stress on the economy. Presently, the Niger Delta region as an entity risk food shortage, escalating economic tension and significant threat to social harmony induced by avoidable unemployment. The oil, ironically has failed to install the economic boom many initially envisaged. However, according to Ubom, et al (2010), the presence of crude oil and the agricultural potentials of the Niger Delta region suggest the region has economic comparative advantage.

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However, they believe the agrarian communities that make up over 50% of the region have some disadvantage in terms of prospect for agricultural growth and development (caused by apathy to significant agricultural practice, environmental degradation and inconsistent government policies). This portends a bleak future for agriculture which has been the people's primary occupation and culture before the discovery of oil in the region. Azam and Morrison (1999) also share this opinion. Any region in contemporary politically and ethnically polarised Nigeria that is not food-secure, or practice sustainable agriculture is in danger of food sabotage. A significant proportion of the foods eaten in the Niger Delta come from outside the region including fish ironically. In the case of a reverse in oil fortunes which in recent time is becoming a reality, this region may suffer food shortage.

In another consideration, can the Niger Delta be economically self supporting outside the oil and gas resource or survive the imminent post-oil and gas era? In the words of Uduaghan(2013) "The entry of the American shale oil, new crude finds in otherwise fallow regions and the coming of alternative sources of power-green energy, have only helped in complicating matters for the mainstream oil industry". Sooner than later, the demand for fossil fuel may decline significantly, other regions of the nation have reasonable and identified resources outside agriculture yet untapped and unexploited that they can fall on in a post-oil era, what will be the prospect of the Niger Delta then whose agricultural lands have been polluted significantly or, in extreme cases destroyed beyond immediate remediation?

III. JUSTIFICATION FOR THE STUDY

Tamuno et al (2012) have alerted that analysts have raised alarm that the oil of the Niger Delta region will soon dry up. In the event of this, some have bothered to ask, how can the Niger Delta region forge ahead economically without a visible economic blue print in place at the moment? The Niger Delta nevertheless is endowed with resources outside crude oil which can sustain the region for a significant number of years. These resources include, Lime stone, Manganese, Glass-sand, Kaolin, marble, and Bitumen amongst others. Outside these, the region has good agricultural lands that can support the production of both food and cash crops. All that is needed is development of these resources and exploitation.

The Niger Delta coastal and swampy lands are the most important ecosystems in the world besides being rich in minerals and organic matter that support plant growth (Imogie et al, 2012). Wikipedia (2010) believes this well endowed region contains one of the highest concentrations of biodiversity on the planet in addition to supporting abundant flora and fauna, arable

terrain that can sustain a wide variety of crops, lumber or agricultural trees, and more species of freshwater fish than any system in West Africa pointing out that with the PH level of 4.6 to 5.3, the soil is suitable for palm oil, coconut, plantain(in extension bananas), pineapples, and sugar cane production since these crops thrive in acidic soils. The freshwater swamps and there seasonal flooding support the Raphia Palms growth (a novel nectar producing plant). Some major foods crops grow significantly well in the region and include: maize, yam, rice, cassava, sugarcane, pineapples and plantain (Ike and Ekanem, 2010).

It is plausibly obvious, many scholars believe, if the leaders of this region will insist on proper resource management, practical environment remediation and protection, the Niger Delta can enjoy a robust agriculture based economy and become a net exporter of agricultural produce.

IV. METHODS AND MATERIALS

The study was on a survey of the prospects and potentials of the agricultural sector of the Niger Delta region of Nigeria. The Niger Delta covers 20,000km² of wetlands out of 70,000km² formed of sediment depositions. This environment is home to 20million people of 40 different ethnic groups. Principally a flood plain, it makes up 7.5% of Nigeria's total land mass. It is the largest wetland and maintains the third- largest drainage basin in Africa (Wikipedia, 2016).

This research sourced information through primary and secondary sources. These pieces of information and statistical data spread across the six core Niger delta States. The choice of secondary data became necessary because of so many contemporary researches and data on the agricultural status of the Niger Delta region. The researchers therefore made use of a few secondary data that had no bias reportage. The study and survey focused on the agricultural potentials and produce from the Niger delta as reported by some researchers and evidenced in field survey. Analyses were mostly descriptive.

V. ANNUAL YIELDS OF DOCUMENTED FOOD CROPS IN THE COASTAL WETLANDS OF THE NIGER DELTA

The Niger Delta technically, should be the most endowed of the regions in the Nigerian federation in terms of good agricultural land and resources. In the agricultural sector, informed assessment suggests it may be the richest. Its soil is almost the best with rich deltaic deposits that has made the soil very fertile. The soil can effectively support a variety of crops that ordinarily could not grow well in some other parts of the country. All the commercially viable agricultural produce can be effectively produced in the Niger Delta except a few. Even the groundnut has been demonstrated to

grow and produce under good management in the area. The table below is a documentation of the major crops that are grown in the Niger Delta as published by Ike and Ekanem (2016) citing Adedipe(2010). This array of crops is not all inclusive and does not however, include the numerous edible wide forest fruits and vegetables that are yet to be domesticated and commercialised.

Table 1: Mean potential annual yields of food crops in the coastal wetlands of Niger Delta region

Food Crops	Mean yields(metric tonnes/hectare)
Cassava	13.0
Yam	12.1
Cocoyam	5.5
Maize	1.6
Paddy Rice	1.7
Cow pea	0.7
Pepper	1.2
Melon	0.41
Tomatoes	2.8
Okra	0.94
Leafy vegetable	1.04
Plantain	12.3

Source: Adedipe et al, 2010(as reported by Ike and Ekanem, 2016).

It should be noted that this level of output was achieved under traditional and non-mechanized methods of production and mostly unscientific application of inputs. It is also observed that most farmers here seldom use fertilizers which are very common in some regions of Nigeria. Scholars suggest the region can produce significant amount of what Nigeria consumes under good and modern practices and management. Unfortunately however, some researchers have reported deficits in the quantum of output because of neglect, focus on petroleum and inconsistent government agricultural policies. The table suggest the region can be a viable agricultural zone in a post-oil era if supportive policies are enacted and the damage inflicted on the environment through oil exploration and exploitation are remediated and early enough. Other food/vegetable crops produced in the Niger Delta but not mentioned by Ike & Ekanem (2016) include; water melon, cucumber, onions, garlic, pineapples, potatoes, cocoyam, bananas, cabbage and soya beans amongst others however, on a subsistence scale as observed in the field and few research farms.

VI. DOCUMENTED OUTPUT DEFICITS OF MAJOR FOOD CROPS IN THE NIGER DELTA

Evidences of food insecurity in contemporary Niger Delta are apparent. Olaniyi (2011), states that food security is physical and economic access to adequate food by households without the risk of losing the access. Citing FAO documentary, Olaniyi(2016) commented that food security exists when people have

physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for a healthy life. The supply of food or food availability in this region is practically inadequate especially from indigenous sources. This is evident on the very high prices of the available ones which many believe is the effect of demand pressure. Every form of food supply deficit or shortage denotes food insecurity. Physical and economic access to adequate food is eluding many households because of limited supply of foods. Production apathy presently witnessed requires concerted efforts in both public and private sectors to reverse. Below is a table culled from Adedipe et al (2010) as reported by Ike and Ekanem(2016) revealing the extent of deficit in the production of food crops that can be produced in the region. The statistical report covering 2010 is shown in table 2 below.

Table 2 : Estimated yield and demand for some food crops in the coastal wetlands of the Niger Delta region in 2010

Crops	Supply/MT	Demand/MT	Deficit/MT
Cassava	14,897	24,413	-9516
Maize	1,774	4,602	-2,828
Yam	12,462	24,475	-12,013
Plantain	3,385	8,473	-5,788
Vegetable	7,766	13,554	-5,788
Fruits	8,752	14,839	-6,087

Source: Adedipe et al, 2010(as reported by Ike and Ekanem, 2016)

Mechanized agriculture is not a very common feature in most Niger Delta farms. Subsistent agriculture is still the norm and mostly practiced in the rural areas under conditions of significant drudgery , also visible is the neglect by both the government and individuals hence, the production deficits with respect to demand. Also, some areas in the Niger Delta region have been witnessing reasonable influx of people because of the presence of the multi-national oil companies; this has put pressure on the limited farm produce with no option than to import what could be locally produced. This could be remedied by agriculture friendly policies and the development of commercial and mechanized farms. Information accessed through the Agricultural Development Programme(ADP) of the ministry of agriculture, Rivers State of 2013 and 2014 farming season vindicates the perceptions of informed minds about the state of the agricultural sector in the region and shown in the tables below.

Table 3: Estimates of Output of selected crops in metric tonnes in the south-south zone(Niger Delta) of Nigeria in 2013/2014 production season

Crops	2013 Output	2014 Output	% Change
MAIZE	872.0	925.2	6.09
RICE	509.3	567.6	11.45
GINGER	0.0	0.0	0.0
YAM	7512.8	8351.3	6.61
GROUNDNUT	19.8	22.9	3.10
MILLET	0.0	0.0	0.0
CASSAVA	12166.4	12167.3	0.008
COWPEA	88.7	93.1	4.89
COCOYAM	709.3	710.5	0.17
SOYBEAN	0.0	0.0	0.0
OKRA	1229.3	1229.3	0.0
TOMATO	43.7	44.0	0.3

Source: *Agricultural Development Programme, Rivers State, 2016*

A critical view of the table shows that even among the crops produced in the region, deficits still exist in output of the crops. Except in the production of cassava, production level is still lagging behind with respect to demand as shown in table 2. All that will be required is right policies and discriminatory attention in favour of the agricultural sector.

VII. CASH CROPS GROWN IN THE NIGER DELTA AGRICULTURE

According to Wikipedia (2016), a cash crop is grown for sale to return a profit. It is typically purchased by parties separate from the producer. They are most often grown for export and monetary gain rather than for domestic consumption. The Niger Delta is naturally endowed with numerous cash crops whose optimum exploitation could turn the regions fortunes around. The table below shows an array of cash crops grown in the Niger Delta region of Nigeria and there economic uses.

Table 4: Cash Crops of the Niger Delta Region

Cash Crop	Derivatives/Uses
Oil Palm	Palm oil, palm kernel oil, animal feed, palm wine, fibre
Rubber	Latex
Cocoa	Cocoa bean powder, beverages, wine
Raphia Palm	Palm wine, fibre
Cashew	Cashew nut, fruit juices
Ground Nut	Edible oil, ground nut cake, animal feed
Coconut	Oil, juices
Ginger	Spices

Source: *field observation, 2016.*

a) Oil Palm

According to Ike and Ekanem(2016), the soil type and weather conditions in the Niger Delta support oil palm production and also ranks as one of the highest producers of oil palm and oil palm products in Nigeria.

Both wild and hybrid species exist and are sources of different subsidiary products. From their statistical estimates, the wild population is put at 600,000 hectares of land and hybrid/plantation species 37,000 hectares in 1980. They state that palm oil was a predominant feature that successfully boosted the economy of Nigeria at a time. History records that Nigeria was a leading nation in oil palm and palm oil production. Surprisingly, Nigeria now is lowly rated in palm oil production been overtaken by Malaysia, a country that obtained her seedlings from Nigerian. Today, Malaysia is a world leading producer of palm oil (Nigerian observer, 2016). According to Tamuno et al(2012), the Niger Delta's 9 states produce about 57% of total Nigerian palm oil production made up largely of collection of palm fruit from wild groves (74% of area and about 50% of supply), this they say is augmented by production from private plantations (small, medium and large farmers, 19% of area and 34% of supply of fruit) and large corporate and government owned plantations (about 7% of area 25% supply of fruits).

b) *Raphia palm*

The raphia palm, a novel plant to many is a tree crop that is mostly found in Rivers, Bayelsa and Akwa Ibom States largely and grows mostly in fresh water swamps. The raphia palm has social and economic value to the people of the Niger Delta. Some products of the Raphia palm include palm wine, raphia fibre, bamboo poles for building amongst others (Ike & Ekanem, 2016). This novel crop can be developed further under well articulated agricultural policies for its exotic wine which is good beverage. With a significant amount of the Niger Delta land mass been fresh water swamps, this region under good management may be in for a monopoly that may positively impact her economy since the raphia palm is largely found in this area.

c) *Rubber*

Significantly, the Midwest region was noted for its rubber plantation and was quite a huge success as the crop played its role as a major economic plant (Nigerian Observer, 2016). The rubber plant is one of the principal ingredients in the manufacture of tyres and other rubber based products.

d) *Cocoa*

According to the Nigerian Observer (2016), in the 1960s, each region of the country was noted for the production of some cash crops in commercial quantities. The South Western region was popular for cocoa production for export and the proceeds from cocoa contributed immensely to the infrastructural and economic development of the region. The Niger Delta fortunately can produce cocoa conveniently. In reality, there are several small cocoa farms in several smallholdings in the region. The features for

commercialization are favourable. All that is needed is a policy statement and the framework to actualize it.

e) *Coconut*

Wikipedia (2016) has reported that coconuts are known for their great versatility, evidenced by many traditional uses, ranging from food to cosmetics. It constitutes part of the diet of many people and beginning to make its way into the fruit juice industry for its delicious nectar. The coconut palm is grown in the Niger Delta for its many culinary and medicinal uses. Every part of the coconut palm is useful and of economic value. Dotting the coasts of this region are coconut trees growing in the wild. In many communities are different domesticated (agric) species of exotic qualities. What had stopped the commercialization of this economic crop remains an issue of debate.

f) *Cashew*

Apart from being a cash crop, cashew also has health benefits. It is surprising though that most people are ignorant of these health benefits (Okpala, 2016). Like coconut, this plant is one of the condiments of many exotic fruit juices. In this region, they grow luxuriantly even in the wild. Observations show that little has been done to tap this resource and reap its dividends.

g) *Ginger*

Ginger is prominent in many cuisines and food menus of this region, its production is still very insignificant and the ones consumed are imported from outside the region largely. Ginger has been a famed crop for centuries in the world and still in high demand. Ironically, despite its luxuriant growth in this region little is done to produce it except in experimental or school farms. Ginger is an export material that has a reasonable demand worldwide.

h) *Groundnut*

Also called peanut is a crop of high economic importance. Largely grown in the northern part of Nigeria, also does well in the Delta region. However, its production is limited to few areas on a subsistent scale. While its production in the region is not considered an issue remains a debatable factor.

VIII. FRUITS OF THE NIGER DELTA AGRICULTURE

According to Foraminifera (2016), Fruits are natural staple food of man, containing essential nutrients in adequate proportion and excellent sources of minerals, vitamins and enzymes. Easily digested and have cleansing effects on the blood and body. Outside being a source of food, fruits also serve as medicine. A large percent of fruits consumed in the globe come from the tropics. The Niger delta has a conducive climate for fruits to thrive and produce in significant proportion and

remains one of Nigeria's most conducive environments for some of the most popular fruits in the country – citrus, pineapples, bananas, mangoes, cashew, pawpaw and many others. Despite the regions huge potential in fruits production for the population, a lot are imported from outside the region. What is lacking is the ability to process these and turn them into job creating industries. However, in spite of these potentials very few large scale fruits and vegetable processing industries are operational in the Niger Delta.

Some wild berries and fruit bearing trees are never considered as economic in most discusses here, however, they are novel areas to be explored and exploited. The beverage and soft drink industries know the importance of this array of fruits. For now, there is no available large scale production of these fruits except the pineapple and the recent Songhai farm and banana plantation established by the Rivers State government. Informed minds believe that incidences of militancy and youth restiveness in this region are unemployment induced and could be tackled through the development of the agricultural sector such as this. Is the unemployment situation in this region self inflicted? Some researchers believe so considering the volume of agricultural resources at the disposal of the region yet to be developed and exploited. Fruits juice production is a viable project as raw materials are readily available in every part of Niger Delta. Raw materials for fruits juice are oranges, lime, lemon, pawpaw, guava, pineapple, mangoes, etc. These grow with relative ease in most Niger Delta regions and waste away during the production season. There is every assurance that any production plant installed here will work round the year as constant supply of raw materials (fruits) is guaranteed. Iwuoha (2016) has made a strong case on the importance of developing the fruit juice industry, stating that each year, Nigeria imports orange concentrates worth over US\$140 million for local fruit juice production and intimates that global market for fruit and vegetable juices is growing fast and is forecast to exceed 70 billion litres by the year 2017. He confirmed that there is a rising preference by individuals for healthy drinks (like fruit juices) over soft drinks and also a rising demand for organic, super fruit and 100 percent natural fruit juices without any sweeteners and preservatives. The table below shows the array of fruits that grow naturally in the region.

Table 4: Fruits of the Niger Delta

Fruits	Derivatives
Oranges	Juices, Eaten raw as snack,
Mangoes	Juices, Eaten raw as snack
Pawpaw	Juices, Eaten raw as snack
African Star Apple	Eaten raw as snack
Sour Sop	Juices, Eaten raw as snack,
Bread Fruit	Delicacy(porridge), snack
Bush Mango	Eaten raw as snack, soup thickener
Plum	Juices, Eaten raw as snack
Tangerine	Juices, Eaten raw as snack
Lime	Juices, Eaten raw as snack
Peach	Juices, Eaten raw as snack
African Pear	Eaten as snack
Grapes	Juices, Eaten raw as snack
Guava	Juices, Eaten raw as snack,
Pineapple	Juices, Eaten raw as snack
Banana	Juices, Eaten raw as snack,
Avocado	Eaten raw as snack
Cashew	Juices, Eaten raw as snacks

Source: field observation, 2016.

The information gathered so far shows the Niger Delta has enormous potentials yet unexploited. The result portrays the region as a domain for fruit trees. This implies many agro-based industries may not lack raw materials should this sector of the agricultural industry be developed and mass production encouraged. The juice producing industries in particular may not lack raw materials if the sector engages in large scale production and commercialisation. In addition to this, the springing up of subsidiary firms to service these industries will generate so many jobs for the teeming idle hands. African countries like South Africa make up to 6 billion Rand (nearly \$600 million) every year from fresh citrus fruits exported to the USA and Europe. Because these fruits are a very rich source of vitamin C, they are also used in pharmaceutical industries to make dietary supplements (.Iwuoha, 2016).

IX. CONCLUSION

The perceived agricultural limitations in the Niger Delta region are self inflicted a consequence of poor leadership and inconsistent policies. The presence of crude oil in the region is a visible distraction that may have plagued the region for years. The agricultural environment is good and can support several crops not presently considered for cultivation by individuals and corporate organizations. Expert opinions suggest the region can adequately produce enough to feed the country and even export (the study did not exhaustively detail all the crops produced in the region but only pointed to the ones that are considered popular with reasonable demand.). The study also, did not consider the livestock sectors which have been showing considerable progress of late. The region will luxuriantly survive a post oil era if, the right policies are put in place and things are done right.

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