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MASS COCONUT PRODUCTION AND ITS ASSOCIATED REFINEMENT INTO PRODUCTS THAT CAN BE OBTAINED FOR THE DEVELOPMENT OF GHANA AT NSUTEM – EASTERN REGION.

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Abstract

Coconut (Cocos nucifera) a member of the palm tree families has many purposes which includes for food, fuel, folk medicine, building materials, charcoal, cosmetics, oil for frying and anointing, drinks, making soaps, furniture making and used as materials to make a variety of products for furnishing and decoration. Coconut is produced in Ghana in an infinitesimal quantity of about 0.012% which is an insignificant percentage when it comes to world coconut production. Coconut has an economic value and plays major roles in countries like Indonesia, India, Philippines and Sri Lanka when it comes to country growth and development. Ghana, a West African Country is no exception when it comes to the use of Coconut for local consumption and export but in small quantities. This calls for the need for mass production of coconut by Ghanaians to boost the economy in the direction of export to the international market and local refinement into consumable products both locally and internationally. This is the reason for this research work in Nsutem in the Eastern Region of Ghana. It is established from this research that, mass production will boost the economy after the establishment of a Coconut Research Institute of Ghana (CCRIG) comparable to Cocoa Research Institute of Ghana (CRIG), Oil Palm Research Institute, Soil Research Institute, Water Research Institutes, Plant Genetic Resources Research, Animal Research Institute etc. all in Ghana. The Coconuts will be used and processed into the products indicated above for national use and export which will generate Billions of Pounds Sterling and Cedis for the country Ghana and the world market. Establishing such a research Institute will result in the engagement of experts from medical research/clinical trials on the health benefits of coconut oil and heart disease, diabetes, Alzheimer's disease, HIV/Aids and others.

Keywords: Coconut, export, mass production, Research Institute, Cocoa, Oil Palm, Oil, Fuel, Food, Soap, heart diseases, HIV/Aids.

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1 INTRODUCTION

1.1 Coconut as a natural resources for development

Coconut production in large quantities is a national assert for countries like Indonesia, Philippines, India and Sri Lanka since it is generating Billions of Pounds Sterling and cedis after export whiles given gainful employment and meaning to life to millions of citizens in these world leading coconut production countries. The coconut palm has been called the "Tree of Life" because it is the source of many raw materials essential to traditional life-styles in the Pacific region. Coconut leaves are used for roofing and mats; the trunk provides wood for furniture; the coconut meat is used as food, as feed, in the production of soap and cooking oil; the husks are used to produce ropes and mattresses; the shell is used to produce charcoal; and even the roots are used in dyes and traditional medicines, building materials, for aesthetics etc. It is also used for fuel production. This is the reason for treating the coconut industry in Ghana as a natural resources which will generate Billions of pound sterling and cedis for the economy if produced on a mass scale in Ghana.

1.2 Background on Coconut in Asia Pacific

The coconut is considered the “Tree of Life” and is a symbolic crop for the Asia Pacific Region both economically and biophysically, providing the poor people not only with food and economic livelihood but also environmental protection to the threats of climate change (FAO, 2014). Coconut farmers in many parts of the world including Asia find it difficult to sustain their families’ livelihoods from coconut income. They often face limited landholding, declining productivity and volatile coconut prices, resulting in poverty, food insecurity and a low nutritional status. To address this problem, a coconut-based integrated farming system is often viewed as a sustainable alternative farming system particularly on small and marginal lands. The common coconut-based integrated farming observed in the Asian countries are 1) livestock integration (cow, goat, poultry, duck, rabbit, pig, etc.), 2) agriculture/tree crops integration (multiple species crops, mixed crops sequential, fruit and timber yielding trees, etc.) and 3) integration of aquaculture (shrimp farming, fish farming, prawn culture, etc.). The economic well-being of a farmer depends not only on the quantity of food produced but also on the effective product and by-product utilization as well as the importance assigned to on-farm integration and waste utilisation (Ruddy et. al., 2011).

The palm’s non-branching solitary stem and the effective spatial arrangement of its lush foliage provide beneficial shade to the intercrops planted underneath while allowing enough sunlight to pass through for their nutrition. As the planet’s temperatures are going to rise due to climate change, coconut-based farming systems will thus stabilize environmentally fragile agriculture landscapes. It will also give the opportunity of using coconut

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farming to save degradable lands resulting from illegal mining in the study area and Ghana. The coconut is environmental friendly as it serves as an effective carbon sink, contributes towards control of erosion of mountains and coastal soils due to its massive and extensive fibrous root system, and help support watersheds in water-deficient communities. Coconuts planted along the coast serve as windbreak and protect inland areas from strong winds/ typhoons. According to Magat (1997), among fruiting commercial crops, the coconut is one of the best crops that could be commercially grown in the coastal zones as it could tolerate salty soils and yields of up to 15 percent higher than in the inlands and the poorest people live along the coast. Aside from providing food, nutrition and livelihood to millions of coconut farmers and their families, in rural communities, the coconut can be used in non-food applications and, lately in the biofuel industries. Products from the coconut kernel, husk, shell, water and even stem could be produced at the community level and sold to generate income for poor coconut farmers (FAO, 2014).

2 REVIEW OF RELATED WORKS ON COCONUT WORLD WIDE

2.1 Global Coconut Strategy

Symbolic, aesthetic and strange, the coconut palm (*Cocos nucifera*) has long been valued by many civilizations, and has been endowed with multifaceted symbolisms and positive cultural references, reflecting its great genetic diversity and multiple uses. A global strategy to conserve such diversity can therefore serve as a basis for its sustainable use. However, coconut's complex biology poses particular challenges for researchers and curators working in both conserving and using coconut genetic resources (Congent, 2018). Poynesian tradition has the notion that coconut palms are able to grow very well when they are able to hear the sea or human voices. But, studies and good farming practices has increased coconut production leading to economic growth and development and leading producing countries in economic development and industrialization.

At the global level, coconut research remains at an infinitesimal level with regard to the social, economic and cultural importance of the plant in a country like Ghana and most African countries. Coconut is cultivated globally on about 12 million hectares, but countless home gardens also grow a few coconut palms each, to provide food; water and sap to drink; oil for culinary and nonedible uses; leaves for thatching and fencing;

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sugar, vinegar and alcoholic beverages from sap; timber and wood for construction; fuel from the husk, leaves and shells; materials for artefacts, traditional medicine and ritual purposes; attractive landscaping and shade, both for people and inter-crops. The custodial role of farmers, together with these hundreds of millions of gardeners, was and remains crucial for creating new varieties and transmitting seednuts through their social networks (Congent, 2018).

Consider coconut sector development as a high priority Programme in the National Development Plan and provide adequate budget support for government investments in the coconut sector as stated by FAO (FAO, 2014). There is the need to provide a policy environment to encourage joint ventures (JVs), promote local and foreign investments, and Public-Private Partnerships (PPPs); provide financial incentives and access to credit assistance, especially for small and medium scale enterprises (SMEs); support market promotion activities, including awareness campaigns on the health benefits of coconut to increase domestic demand/utilization and export; strengthen the National Coconut Extension Service; facilitate and support the formation of economically viable coconut farmers' Cooperatives, Coconut Producer Societies or Coconut producer companies; facilitate the formulation of their respective coconut industry strategic plans and roadmaps; and facilitate periodic agricultural surveys to ensure evidence-based policy formulation and program planning (FAO, 2014). Coconut in Tonga is regarded as the "Tree of Life." Its importance in Tongan life is reflected in Tongan mythology and the products derived from the coconut are used in a variety of ways. The total annual nut production is about 29.4 million (FAO, 2014).

2.2 Origin and history about Coconut

Coconut center of origin is, however, unknown; small coconut-like fossils, between one and 15 million years old, have been found in New Zealand (*Cocos zeylandica*) (Alan, 1991). Evidence suggests that the coconut and its related species already had a wide distribution during the Eocene to Oligocene eras (28-44 million years ago). At the dawn of agriculture (around 10,000 years ago), it appears to have been restricted to a region extending from South-east Asia to near Oceania and to the south of the Indian sub-continent. It is feasible that when humans started to harvest coconuts for consumption and multiplication, this initiated a long and progressive domestication process (Congent, 2018). It is likely that within archipelagos and on islands, the spread of coconuts was based on a very small initial sample size, considering the bulk of the seed material and that the coconut reproduces by seed. The natural adaptation of coconuts to a dispersal mode by flotation means that sample size may have been limited to only a few nuts being the founders

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of populations on small islands and atolls (Congent, 2018). During this worldwide dissemination, these continued 'bottleneck events' have resulted in enormous genetic drifts in the founding populations. This process, facilitating a fragmentation of coconut genetic diversity, was overlain by ritual and commercial exchanges of seeds, which tended to homogenize populations at a regional scale. The results of these partially opposed tendencies need to be analyzed further because they have significant implications regarding the current genetic distribution of coconuts, in particular when being collected for conservation and multiple uses (Congent, 2018).

In Somoa, an estimated 90 000 hectares of coconut plantations are recorded; a growing number of these trees are becoming senile and declining in yields. Recent provisional data from the 2009 Agricultural Census Tabulation Report has estimated that only 28 000 hectares of coconut are reportedly being maintained and harvested by farming communities (FAO, 2014). As observed, most of the coconut plantations are situated around the coastal areas and low-lying areas. Some plantings are done further inland at the higher elevations and are less productive. Reports have indicated that coconut is grown in almost all inhabited areas of Samoa. However, only about 31 percent of the coconut growing area is actually being maintained and harvested by farming communities. Coconut, being a major traditional tree crop, is an integral part of the agriculture activity (FAO, 2014).

In Fiji, Total coconut plantation in Fiji is estimated at 10 million including scattered coconut palms and plantation crops which cover an area of approximately 65 000 hectares. Around 70 percent of Fiji's coconut palms are more than 100 years old and are of the Fiji Tall Variety, while 6 percent of the coconut tree population is expected to be about 50 years old, comprising about 4 000 hectares each of Fiji Tall and Malayan Dwarf (FAO,2014). Coconut hybrid varieties make up 10 percent of the coconut tree population and cover up to 2 000 hectares while coconut trees of mixed varieties comprise 14 percent of the total population and are a little under 30 years old (FAO, 2014). The average nut production is 25 - 30 nuts per tree per year for older trees, while younger palms below 40 years yield around 50 - 60 nuts per tree per year. Copra yields range from 1 to 2 tons per hectare, depending on the variety, age of palm, soil fertility, and farming system adopted. Established coconut producing areas are concentrated in the Eastern Division, the Northern Division and the coastal areas of the main islands (Viti Levu) (FAO, 2014).

In Vanuatu, Approximately 24 000 households or 69 percent of those engaged in agricultural activities, are reported to have coconut sub-holdings. These sub-holdings are composed of 39 348 land parcels comprising 96 000 hectares. An estimated 9.7 million coconut trees were planted in these sub-holdings; about

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91 percent are bearing trees with 82 percent of the bearing trees aged between 5-49 years while 18 percent were estimated to be 50 years and over. Copra production provisional figures for the December quarter in 2012 decreased in volume by 50 percent from 11 291 to 5 666 tons over the December quarter of 2011. Copra producer's price recorded a decrease of 36 percent from Vt46 000 to Vt29 000 in the December quarter of 2012 over the corresponding period in 2011 and 19 percent over the previous quarter (FAO, 2014).

In Solomon Islands, the total area under coconut cultivation in Solomon Islands is around 58 938 hectares, with an estimated 9 to10 million trees planted. The major coconut provinces in the Solomon Islands are Western, Isabel, Central Islands, Malaita, Guadalcanal, Makira and Temotu. Nearly 65-70 percent of the total population directly depend on the coconut industry for their economic and social well-being (FAO, 2014). The coconut industry contributed 7 percent to the national export earnings of the country. The value of copra and coconut oil exports doubled in 2011 reaching $216 million compared to $98 million in 2010. There are several factors affecting the level of coconut production in the country. These include: the increasing number of senile coconut trees and no replanting programme; low and unstable local prices of copra and coconut oil; and the scattered nature of the islands requiring an efficient land transportation network, shipping and infrastructure (FAO, 2014).

In Indonesia, Coconut plantations in Indonesia can be found in almost all regions of the country with the largest area in Sumatra which occupies 32.43 percent of the total area followed by Java (23 percent); Sulawesi (19.65 percent); Bali and Nusa Tenggara Barat (7.82 percent); Moluccas and Papua (9.7 percent); and Kalimantan (7.3 percent) (FAO, 2014). The total coconut plantation area in 2011 was estimated at over 3.8 million hectares and 98.16 percent belongs to smallholders and the rest is owned by the private sector (1.69 percent) and the government (0.14 percent). The Indonesian coconut plantation area is the largest in the world. However, with respect to production, it is still below its potential (FAO, 2014).

In Philippines, For the period 2009-2011, the average production was estimated at 14 743 billion nuts or 2.813 million MT copra equivalent. There is an increasing trend in the coconut sector due to massive planting and replanting. The total coconut area is estimated at of 3.564 million hectares with 1.122 million hectares or 31.49 percent in Luzon; 683 511 hectares or 19.17 percent in Visayas and 1.759 million hectares or 49.34 percent in Mindanao. There is also an increasing trend in coconut areas due to massive planting and replanting. There are 340 million bearing trees and the non-bearing trees below 6 years in age was estimated at 30 million (FAO, 2014).

In Sri Lanka, Coconut production in 2012 was estimated at 2.9 billion nuts or 554 493 MT copra equivalent. The area under

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coconut was estimated at 417 000 hectares or 20 percent of the total agricultural land in Sri Lanka. The major coconut growing areas are in the Coconut Triangle in parts of Western and North Western Provinces and in the Mini Coconut Triangle in Matara, Hambantota Districts in the south. The constraints/issues, problems and threats related to coconut production are identified as follows: adverse weather conditions and anticipated impacts of climate change on production; widely fluctuating farm gate prices, local market prices and global prices for coconut products; increasing input costs (production costs); susceptibility to pests and diseases; emerging new pests and diseases (black beetle, coconut mites, Asiatic palm weevil, slug caterpillar and the Weligama Coconut Wilt and Rot Disease); ineffective utilization of advanced technologies for production; insufficient usage of fertilizer and other inputs; fragmentation of coconut lands for industrial and urban development; and trends towards converting coconut lands for other economic purposes (FAO, 2014).

In Thailand, Coconut production in 2012 was estimated at 844 million nuts or 218 metric tons copra equivalent. The area planted to coconuts was estimated at 213 000 hectares. Coconuts are predominantly planted in the Southern Region of Thailand, mainly in the provinces of Prachab Kirikhan, Chumphon, Surat Thani and Nakorn Si Thammarat. Constraints related to coconut production and productivity include: senility of palms; pest and disease damage (mainly by the coconut hispine beetle – Brontispa longissima, coconut black-headed caterpillar, Oryctes rhinoceros, Rhynochophorus, ferrugenus or the Asiatic palm weevil); and competition with more economically profitable crops like oil palm and rubber (FAO, 2014).

In Viet Nam, Coconuts in Viet Nam are mainly grown in the Mekong Delta region of the South and in the Central region with extent of about 147 210 hectares. Production is about 818 000 000 nuts/ year (equivalent to181 800 metric tons of copra). The Mekong Delta region contributes more than 75 percent of Viet Nam's coconut production. This also is the center of the coconut industry in Viet Nam (FAO, 2014). The total production area in the Mekong Delta is approximately 110 000 hectares and Ben Tre has the greatest concentration of coconuts with 50 000 hectares of production land, almost 40 percent of the area of the Mekong Delta. The two main regions that produce coconut have different agro-ecological conditions. The Mekong Delta is characterized by water logging, fertile soil but often flooded and pre-disposed to salt-water intrusion, while the Central region is characterized by poor sandy soil and at times is affected by severe droughts or typhoons. In general, the Mekong Delta is more suitable for coconut cultivation in Viet Nam and many coconut processing facilities are located in this region (FAO, 2014).

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2.3 Climate Requirements for coconut production

The coconut is essentially a crop of the lowland humid tropics for production coming from within the zone 20°N and 200S latitude. It has been grown successfully at an elevation of over 1,000 m near to the equator, but is rarely planted in quantity at altitudes above 300 m. In Jamaica, at 180N, the crop is said to be unprofitable if planted above 120 m (Alan, 1991). Ideally the average temperature should be in the range 27-32^{o}C with a diurnal variation of not more than 7^{o}C. Annual rainfall requirements may range between 1,000mm and 2,500mm depending on seasonal distribution, the water retaining capacity of the soil, the depth of the water table and the availability of additional sources of water, e.g., by lateral percolation. Ample sunshine is required, preferably in excess of 2,000 hours, though total solar radiation is more important than hours of bright sunshine. In Ghana, it can vividly be seen that, coconut is grown in all the sixteen (16) regions especially in the Southern part because of the two seasonal rainfalls experienced each year.

2.4 Soil Conditions for Coconut production

The coconut tolerates a very wide range of soil conditions, from the almost pure coral found on atolls, to peats and acid swamps. In some circumstances it may be the sole economic crop at the farmer's disposal. Although the highest yields are probably obtained on fertile alluvial and volcanic soils the coconut may not then be the most profitable crop that can be grown. Under these conditions it is frequently found as one component of a multicrop system. The traditional tall varieties are better suited by their stature and habit of growth to multicrop systems than the dwarf varieties and some of the dwarf hybrids (Alan, 1991).

3 RESEARCH AREA

The research area for this study is in Nsutam in the Eastern Region of Ghana. The people of Nsutam are involved in gold mining, farming and trading. Some of the farm products produced includes coconut, cocoa, plantain, yam, cassava, sugar cane and all kinds of vegetables produced during the farming seasons. The huge amount of gold discovered in the community has resulted in all kinds of illegal gold mining activities destroying water bodies, forest and lands. The community has a population of about 7000 (2021 population census) with the majority being immigrants due to the gold mining business, Linda Dor and Paradise Tourist operations in the community. The destroyed land needs reclamation process in order to restore the infertile lands back to more fertile rich soils which will support plant growth in order to support the hydrological cycle and exchanges of oxygen and carbon dioxide between man and plants. Restoration of the degraded lands will also promote

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afforestation and wildlife existence in the future for future generation. It will also promote tourist attraction when vegetation's are groomed and protected with the existence of wildlife's. **Fig 1** below is a view of the study area in the Eastern Region of Ghana where coconut is in mild production to boost livelihoods within the community.

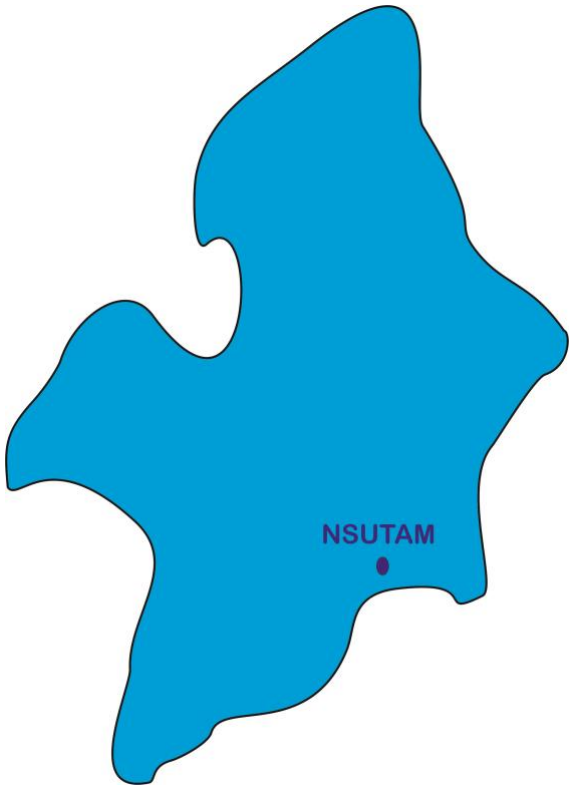

Fig. 1: Map of Fanteakwa South showing the Study Area

4 COCONUT AS A NATURAL RESOURCE FOR DEVELOPMENT AND BOOSTING THE GHANAIAN ECONOMY.

4.1 Coconut as a natural resource like cocoa for national development

The world of discovery, modification and readjustment to meet human needs and towards development depends mainly on natural resources. A countries ability to discover, abstract, harness and refine such products into consumable goods for the local and international market generates Billions of dollars, Pounds sterling or cedis for the economy. Some of this natural resources includes oil for fuel, water, gold, bauxite, copper, manganese, land etc. Coconut is one such national treasures as its mass production, harnessing and processing or refinement into consumable productions generates Billions for Pounds sterling to support economy and promote national growth. Some of the countries in this position includes Indonesia, India, Philippines and Sri Lanka. Coconut is a resources which has the following potentials; for food, fuel, folk medicine, building materials, charcoal, cosmetics, oil for frying and anointing, drinks, making soaps, furniture making and used as materials to make a variety of products for furnishing and decoration hence its need as a natural resource. Ghana has a lot of natural resources but still seen as middle income country with most of

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citizens facing economic hardships. There is the need for serious learning and probing into the coconut industry worldwide by experts and technologies employed to produce coconut on a mass scale to boost the economy as can be seen in Indonesia, India, Sri Lanka, and the Philippines.

4.2 Types of Coconuts in Ghana

There is only one species of coconut palm tree in the world and this is *Cocos nucifera*. However, many cultivars exist within this species, which bear a wide variety of different types of coconut. The Coconut palm cultivars are split into two groups namely dwarf varieties and tall varieties. Coconut varieties in India includes West coast tall, East coast tall, Chandrakalpa, Andaman ordinary, Tiptur Tall, Kera Sagara, Kerachandra, Chowghat Green Dwarf and others includes orange dwarf coconut, Malayan Yellow dwarf coconut, Fiji dwarf coconut . The West coast Tall coconut trees bears fruit in 6 – 7 years and produces around 60 – 80 coconuts per palm each year. This is when grown, are eaten as edible foods or refined into consumable products for the well-being citizens and economic growth.

Plate 1: Tall coconut variety at Nsutem – Ghana.

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4.3 Soil condition supporting coconut production

Ghana has a rich soil classification that supports all kinds of farming and sand winning processes for building. In the southern part of Ghana, all the soils are rich in nutrients due to the two rainy seasons experienced each year. It's the northern part of Ghana which experiences one rainy season in June – July hence getting rich moist soil during that period. The land being dry and void of rich nutrients during the second part of the season in the northern and by that requiring all kinds of soil conservation methods in order to enrich the soil to support crop production. The coastal savanna zone has an abundance of soil types, which includes tropical black earths, tropical gray earths, acid viesols and sodium viesols. Except for the clays, most of these soils are of a little importance agriculturally. The soil in Ghana are classified into four types namely sandy soil, silt soil, clay soil and loamy soil and all these soil types will support coconut palm tree production to boost the Ghanaian economy for future generation. Hence the need for mass coconut production in Ghana like the cocoa industry.

4.4 Water condition supporting coconut production.

Ghana has the opportunity of experiencing and using the three water sources; water from above, surface water and underground water. The southern part of Ghana has two rainy seasons and the northern part only one and they all in a position to support coconut palm tree production in Ghana. Even though most of the surface water bodies have been destroyed due to illegal mining practices in Nsutam, rain water, ground water and other treated surface water will help in the growth of coconut in Ghana.

4.5 Coconut Research Institute of Ghana (CCRIG) to boost Employment in Ghana

Ghana has various research institutions which are involved in research in finding solutions to problems in these fields. Some of the fields includes Cocoa Research Institute of Ghana (CRIG), Oil Palm Research Institute, Soil Research Institute, Water Research Institutes, Plant Genetic Resources Research, Animal Research Institute. There will be the establishment of Coconut Research Institute of Ghana (CCRIG) comparable to others to do more works in the Coconut field constituting of trained professionals in the field of Agriculture and coconuts. This will generate thousands of graduates into the sector hence boosting economic growth for Ghana and the world, whiles solving a percentage of the unemployment problems in Ghana.

4.6 Production of coconut on mass scale for consumption

Most of the lands in Ghana have been degraded by the removing of the top soils rich in nutrients to support plant growth. Illegal

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gold mining activities in Ghana is the main cause of this problem. These degraded lands will be enriched with all kinds' nutrients if farming practices in Ghana are improved. Once these lands are enriched by good farming practices, coconut will be grown on these vast destroyed lands and harvested in large quantities to support the growth of the economy. This is comparable to cocoa farming in Ghana where cocoa are grown and harvested in large quantities, exported and/or processes to support the Ghanaian economy.

All great performing economies worldwide greatly depends on export and import of goods to boost their economies as can be seen in the case of gold, timber, oil, cocoa etc. in large quantities. This generates Billions of cedis and pound sterling to enrich the economy and so will be coconut when large quantities and grown in Ghana.

4.7 Processing and Refinement into consumable products for export

A countries ability to discover natural resources, process or refine it, export some, store and utilize the rest nationally by citizens is the wealthiest thing towards a countries independence and sustainability. This is what great countries are doing and boosting economic growth in all directions. Ghana is no exception and therefore the need to process and refine the coconut into products that are consumable to lead to economic growth and achieve greater height on the international market. Some of the products that can be obtained from coconut includes oil for frying and anointing, drinks, making soaps, furniture making, used as materials to make a variety of products for furnishing and decoration, food, fuel, folk medicine, building materials, charcoal, and cosmetics. Ghana is a country rich in natural resources but its problem is processing them into consumable products and, storage and maintenance of the natural resources.

Plate 2: Harvested coconut fruits for sale

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4.8 Coconut Farming to reclaim lands destroyed by illegal gold mining activities in Ghana

Coconut is a long season plant which bears fruits after 6 to 7 years having a life span of about 60 – 70 years. So once they are grown, take feet and get well established in the soil, they have the ability to stand harsh weather conditions hence will be footed for more years. This is will give a long term sustainable project or work of country Ghana. By this, CCRIG can harvest the fruits and do other processing and refinements to generate income. Individual farmers can also be supported in the growing of coconut on individual lands and the bought be CCRIG just like cocoa. Most of the lands in Ghana have degraded as a result of illegal gold mining business in Ghana. Coconut farming together with practicing of good agricultural practices such as mulching and application of fertilizer will help enrich the degraded lands for the future generation and coconut production.

Plate 3: Degraded lands to be enriched by mass coconut production

4.9 Stakeholder participation in coconut farming to reclaim destroyed lands

Every country boast of its natural resources which when harnessed well generates billions of pounds sterling for national development and helping other countries. Mass production of coconut and its associated refinement will also add to the natural resources of the country. In life, in unity together we

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stand as one. There is the need for stakeholder collaboration by all sectors in this coconut Research Institute of Ghana formation program to help reclaim all the degraded lands. Stakeholders such as Water Resources Commission, Ghana Water Company, Ministry of Food and Agriculture, Forestry Commission, Fisheries Commission, Municipal and District Assemblies, Owners of Stools and Lands, Kings, Security Services, Water Research Institutes needs to collaborate and work together towards mass coconut production and the reclamation of the lands which is a natural resources for the now and future generations. All these stakeholders need to play their role in the reclamation process.

5 CONCLUSION

Every countries growth and income generation for projects and developments depends on its natural resources refinement, usage and management. Ghana boast of natural resources such as gold, bauxite, oil, manganese, lands, water resources etc. which are helping the nurturing of the country. Coconut fruit is enjoyed by Ghanaians in all endeavors but has not been regarded as a natural resources which when grown in large quantities, can be used to generate billions of pounds sterling and cedis to boost the growth of the Ghanaian economy in all directions. Some of the importance of the coconut includes refinement into oil for frying and anointing, making drinks, making soaps, furniture making, used as materials to make a variety of products for furnishing and decoration, for food, used as fuel, for folk medicine, for building materials, charcoal, and for cosmetics as seen in countries like Indonesia, India, Philippines, Sri Lanka etc. Coconut can be produced on large scale to boost the economy comparable to Cocoa production in Ghana which is seen as a national assert used in the development of Ghana. By this assertion, it can be seen clearly that producing coconut on very large scale will give Ghana another natural resources to add to Cocoa, oil, Gold, Palm oil, water, land, manganese, bauxite etc. to enrich the Ghanaian economy while given gainful employment to the unemployed graduates and individuals to better their lives. It will also add to the agricultural sector after the formation and implementation of Coconut Research Institute of Ghana. This will give gainful employment from the level of doctors to laborers.

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