Abstract
The occurrence, harvesting and processing of rattan is a major topic of discussion in most parts of Africa and Asia in view of its role in poverty alleviation, employment generation and foreign exchange earnings. While the rattan sector has been a major foreign exchange earner in many countries in Asia and some parts of Africa most especially Central Africa, Ghana and Cameroon, the contrary is the case with Nigeria. The rattan industry in Nigeria is constrained by poor finished products which are occasioned by the harvesting and processing methods employed. Most rattan operations are carried out without any form of mechanization and without following standard processing procedures. This reduces quality of out and their inability to compete with export market. To remove the challenges facing rattan development locally, it is important to improve the harvesting and processing methods. As rattan harvesting and processing are carried out by hand by artisans in Nigeria, government should facilitate their access to investible funds. This will promote access to modern processing methods by operatives within the sector. Likewise, sustainable management of rattan stands, plantation development and research and development into rattan silviculture and ecology, plantation technology and innovative technologies for low cost mechanization and automation within the sector has become imperative. To foster sustainable development of the sector and ensure it becomes a virile substitute or complementary raw material to wood in the wood sector of the national economy, government should mainstream the sector into the industrial sector of the economy. This initiative will enhance mechanization of the sector, promote innovation through training, and enhance the marketing of product globally. This will also assist in the provision of infrastructure.

Keywords: Rattan, mechanization, innovation, clusters seasoning, progenies.

Introduction
The occurrence, processing and utilization of rattans are major topics of discussion in most parts of Africa in recent times in view of their perceivable role in poverty alleviation, employment generation and foreign exchange earnings. Africa and Asia export rattan products worth about US $6.5 billion per year (ITTO, 1997), although, majority of the export originate in Asia (Sunderland, 2002). More recently, there is a significant increase in the export of African rattans. According to Sunderland (2002), Cameroon and Gabon export rattan products to France while Ghana is supplying a high proportion of the United Kingdom market. In Central Africa, the commercial trade in rattan products worth more than US 10 million dollars per annum (Sunderland et al 2008). In Nigeria, annual internal trade in rattan products is about US$2.5m while the export of finished products generates less than US$ 2m as a result of poor quality of finished products (RMRDC, 2006).

In view of the employment generated locally by rattan harvesting, transportation and processing, several studies have been carried out rattan occurrence, harvesting and utilization in Nigeria. Under technical assistance of Breda, Netherlands, a study was conducted on rattan site assessment at Ejirin and Lagos peninsular in the 80’s (Omiyale, 2003). Several other studies have also been carried out on rattan occurrence and distribution. RMRDC (2006) reported a national survey on rattan resources availability and distribution in Nigeria. Likewise, Oddo (2008), reported a study carried out on the ecology, production and utilization of
Several other authors have also reported work done on various aspects of rattan development in the locally. Adewole and Onilude (2011) observed rattan to be abundantly available in Bayelsa, Akwa Ibom, Cross River and Rivers States. Likewise, Lucas and Dahunsi (2004) studied the rattan species occurring in the western Nigeria and reported that *Calamus deerratus*, *Erymospatha macrocarpa*, *Oncocalamus manni* and *Laccosperma secundiflorum* are abundant in the region. The average stem densities per plot of 100 m³ were reported as 6, 22, 12 and 18 clumps for *L. secundiflorum*, *C. deerratus*, *E. macrocarpa* and *O. manni* respectively. Lucas and Dahunsi (2004) further observed the diameter of the rattans to range from 7.2 to 17.8 mm for small stemmed rattan species such as *C. deerratus*, *E. macrocarpa* and *O. manni* and from 12.5 to 38.5 mm for the larger diameter, *L. secundiflorum*. While several studies have been carried out on occurrence, harvesting, processing, and to some extent, properties of rattans in Nigeria, none has dealt extensively with the problems facing the rattan industry in the country. This paper therefore examined the rattans of Nigeria and the challenges facing their production, harvesting, and processing. The options available for mainstreaming the industry into the formal sector of the economy are also examined.

### Rattan occurrence

About 600 species of rattan occur throughout their natural range in the tropical forests of Asia and Africa. Its distribution is limited to tropical and subtropical Asia and the pacific where ten of the 13 known genera are endemic. In equatorial Africa, four genera occurs of which three are endemic (Sunderland, 2002). Survey of published works indicated the presence of four genera of rattans in West Africa (Hutchinson and Dalziel, 1968; Dahunsi, 2000; Olubanjo, 2002; and Morakinyo, 1993). These are *Laccosperma* (formerly *Ancistrophylum*), *Calamus*, *Erymospatha* and *Oncocalamus*. Dahunsi (2000) listed the ten species of rattan identified so far in Nigeria as shown in Table 1.

Table 1: Rattan Species found in Nigeria with their Local names

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Species</th>
<th>Local Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><em>Laccosperma secundiflorum</em></td>
<td>Ukpa (Ijaw), Apa (Kwale), Apasa (Ikale)</td>
</tr>
<tr>
<td>2.</td>
<td><em>Laccosperma leave</em></td>
<td>Itunibia (Ekuri)</td>
</tr>
<tr>
<td>3.</td>
<td><em>Laccosperma apacum</em></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td><em>Eremospatha hookeri</em></td>
<td>Eninaboru (Ijaw)</td>
</tr>
<tr>
<td>5.</td>
<td><em>Eremospatha wendlandiana</em></td>
<td>Eghomka (Ekuri)</td>
</tr>
<tr>
<td>6.</td>
<td><em>Eremospatha macrocarpa</em></td>
<td>Boru (Ijaw), Ekakieri (Ekuri), Iri (Urhobo), Ikan / Pankere (Yoruba)</td>
</tr>
<tr>
<td>7.</td>
<td><em>Calamus deerratus</em></td>
<td>Akain (Ijaw)</td>
</tr>
<tr>
<td>8.</td>
<td><em>Calamus bateri</em></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td><em>Oncocalamus manni</em></td>
<td>Iboh (Ekuri)</td>
</tr>
<tr>
<td>10.</td>
<td><em>Oncocalamus wrightianus</em></td>
<td></td>
</tr>
</tbody>
</table>

Source: Dahunsi (2000)  
NB: Names in brackets are the dialect local names given to the rattan species.

The main rattan species collected for trade in Nigeria are *C. deerratus*, *L. secundiflorum*, *L. opacum*, *L. leave*, *O. manni*, *O. wrightianus*, *E. hookeri*, *E. wendlandiana* and *E. macrocarpa* (RMRDC, 2006 and Dahunsi, 2000). Currently, no re-planting carried out in the country to replace the harvested rattans (RMRDC, 2006; Sunderland, 2002; Olubanjo, 2002, and Adewole and Onilude, 2011), and there are no local regulations and practices in existence for managing the available rattan stock (Sunderland, 2002).

### Rattan distribution

RMRDC (2006) revealed that rattan is widely distributed in mangrove and high forest vegetation zones of the Southern parts of Nigeria. RMRDC (2006). The levels of rattan concentration in each state of the federation were classified by RMRDC (2006), as abundant in states where at least 10% of the natural vegetation replace with rattan plant,
frequent, if 6.0 to 9.0% of the natural vegetation is of rattan ecology and occasional if it is between 3.0 to 5.9%. Any state where the natural vegetation is made up of less than 3% of rattan, level of rattan abundance is considered as rare.

Using the above classification, RMRDC (2006) considered rattan as abundant in seven states of the South south and South east of the country. The state includes Bayelsa, Edo, Delta, Imo, Anambra, Rivers and Cross River. These areas represent the mangrove and high forest vegetation of the Southern Nigeria. Among the states with frequent occurrence are Ebonyi and Abia. Rattans are classified as occurring occasional in many states of the Southwest as well as middle belt area extending towards the Northeast area of the country. The states include Oyo, Ogun, Osun, Ondo, Ekiti, Lagos, Kwara, Kogi, Enugu, Benue, Taraba, Gombe, Bauchi, Yobe and Borno states. All the other states of the federation are classified as having no occurrence of rattan canes existing in them.

Sunderland (2002) reported the commercially important species in Eastern Nigeria as Laccosperma robustum, Eremospatha macrocarpa and to a lesser extent, Laccosperma secondiflorum. In Western Nigeria, the commercially important species are Laccosperma secondiflorum, Eremospatha macrocarpa and to a lesser extent, Eremospatha hookeri and Calamus deerratus (Sunderland, 2002). The most important rattan species in the South south zone are Laccosperma secondiflorum, Eremospatha hookeri, E. macrocarpa (Adewale and Onilude, 2011).

**Rattan harvesting and processing**

The method used to harvest rattan for commercial use in Nigeria is highly labour intensive. The process is very tedious and precarious in view of the thorny nature rattan stands. There is no official permit required for rattan harvesting. Most of the commercial undertake the work as a secondary occupation, mostly when they require extra revenues to meet occasional needs (Sunderland, 1998 and Profizi, 1999). Most of the commercial harvesters are also collectors. They are subsistence farmers and landless traders. The harvesters are unable to expand and integrate because of several economic factors which include weak financial base and lack of modern knowledge and expertise.

Rattan harvesting takes place from the wild in the natural forests or community lands, as well as from government owned forest reserves. The basic tools employed are cutlasses and files while hand gloves, caps and protective shoes are required for safety. Rattans are harvested in a four stage procedure which includes selection of rattans, cutting from the base, drawing of rattan after cutting and trimming to commercial lengths of 12ft. After this, the rattans are bundled into packs, stacked, air dried for few days and sold (RMRDC, 2006). The volume of rattans harvested is mostly determined by needs rather than the capacity of the harvester. Some of the harvesters sometimes process the harvested rattan into low quality and poorly finished household furniture items for local consumption.

On arrival at the workshops, the outer leaf sheaths are removed with knife and the old sheaths are systematically scraped off to leave the fresh, clean, workable cane beneath. The stems are left to dry for a few days after which they are cut into dimension stock for further processing. Large diameter canes may be heated with flame to facilitate their manipulation into desired shapes. Sometimes, a bench with a specific bending rig is also employed to facilitate the bending curvature desired. The scorch marks left by the blow torch are usually add to the aesthetic value to the final product. Once the desired bent curvatures are attained, the furniture item will be assembled and the final finishing operation or activity will be carried out. Any insect infested rattan materials are discarded rather than being treated with chemicals (Sunderland, 2002). In Nigeria, rattan processors are located in the urban centres. Two of such notable concentration points for cane processing in southern Nigeria are Mende (Maryland) in Lagos, Lagos State and Obrikom in Onelga Local Government area of Rivers State. They are large, highly organized centres with some levels of sophistication in the products manufactured from rattan (RMRDC, 2006 and Adewale and Onilude, 2011).

**Challenges of rattan development in Nigeria**

A number of constraint which varies from technical, economic, policy and marketing, militate against successful development of the rattan industry in Nigeria. In view of the economic,
ecological and socio-cultural importance of the sector to more than half a million people that are involved in rattan harvesting, processing and marketing in Nigeria, steps have been taken to ensure increased profitability and productivity of rattan enterprise in the country. Also, sustainable development of the rattan sector will strengthen income that is presently being generated from the wood sub sector in Nigeria (Cropper, 2006). Some of the major constraints mitigating against rattan development are subsequently outlined.

Inadequate method of harvesting and processing
Despite the fact that rattan canes have been used for hundreds of years, the harvesting and processing methods applied are still labour intensive as they are mostly carried out without mechanization. Most processors do not follow the optimal procedure which includes drying for about 2-3 weeks, curing in oil, bleaching, deglazing to remove silicified epidermis and fumigation (Liese, 2002). The moisture content of fresh stems varies between 130 and 160 percent, requiring about two to three weeks air drying to be reduced to about 20%. Closely allied with this, is curing, which is the immersion of canes in a hot oil bath to prevent deterioration by stabilizing the moisture content (Bhat and Dhamodran, 1993; Silitonga, 1989 and Liese,2002). In countries where rattans products are exported, curing and deglazing are integral parts of the processing line. Deglazing is important in species such as Calamus which have theirepidermis encrusted with amorphous silica. Grading is another important step that influences the final product. In most cases, grading rules and procedures differ from one country to country. However, unification among producing countries had been advocated by Bhat (1996), as application of general grading rules would lead to increased trade, market standardization and wastage reduction (Liese, 2002).

In countries where rattan products are exported, most processors follow a defined secondary processing stage which involves peeling, splitting, steaming, dyeing, sanding and finishing. Steam chambers are often used to soften the stems so that they can be bent. To improve the surface appearance, gray-brown canes are also bleached with hydrogen peroxide or other chemicals for a better finish. Discoloured canes are often coloured artificially with wide a range of colour. Melamine coating are used for a smooth finish while fumigation with sulphur dioxide assist in sterilizing the canes and improve their surface quality.

Technological issues
In recent years, many technical developments have taken place in the manufacture of rattan products in countries such as Malaysia and other parts of Asia. Some of these consist of mechanization of the process techniques and development of improved technologies for cane preservation and seasoning. In Nigeria most processors still depend on simple tools, old fashion designs and limited skilled workers (Liese, 2002), thus, their access to export market is restricted by the inferior quality of their products (Belcher, 1999; IFAD; 1991, UNIDO,1983 and ESCAP, 1991).

Nonavailability of investible funds
Despite the various monetary, fiscal and industrial policy measures which the government has embarked on to promote the development of Small Scale Enterprises (SMES), it is still difficult for industries in Nigeria to access funds. The problem is more stringent due to lack of collateral. Although, the Bankers committee in collaboration with Federal Government arrived at a conclusion whereby 10% of the bank’s pre-tax profits would be set aside for equity investment in small businesses inform of Small and Medium Industries Equity Investment Scheme (SMIEIS), it has been difficult for investors to access the fund. The major problem is the sole ownership nature of SME’s in Nigeria. This compels the banks to do a lot of homework on the profitability of small scale businesses before investing in them as collateral has been abrogated for equity in the programme. This become more difficult as the SMEs does not have adequate accounting system. The consequence is the extreme difficulties SMEs face in accessing the N200 billion SME bailout fund (Bamikole, 2007). The recent proclamation by the Central Bank of Nigeria (CBN) that the pre-tax 10% profit contribution to the fund is optional has placed serious limitation on the growth of the fund.

Inadequate management of the resource base
Another major factor that is threatening the rattan industry in Nigeria is the overexploitation and wasteful utilization of the plant species. According
to Attah (2001), the Nigerian forestry has gone through years of reservation and plantation development on one hand and years of reckless destruction on the other. At present, the area under forest reservation in Nigeria is less than 6% of the total land area of the country. Desert is encroaching from the northern part and erosion and other environmental problems are ravaging the east. These have led to substantial loss of plant diversity of indigenous germplasm. Ola-Adams (1975) reported the extinction of many Nigerian plant species through over exploitation with up to 484 plant species in 112 families of the 4600 plant species endangered. About 205 of the species are endemic and their loss will mean extinction from the earth.

RMRDC (2006) reported dwindling supplies of rattan resulting from overexploitation and steady loss of their habitat. This has culminated to long distance journey into the forests for rattan harvesting. To protect the rattan industry and cope with any increase in demand for rattan, there is urgent need to instill sustainable management principles (Sastry, 2002). A first step is to determine the extent of the rattan resources of the country as most inventories carried out in the country so far on rattan resources are indicative in nature (RMRDC, 2006). Currently rattan harvesting is carried out by whoever is interested without any regulatory practices (Adewale and Onilude, 2011). To control harvesting of rattan, there is need for licensing rights (Sastry, 2002). To promote adequate management of the resource some countries are already employing long term tenure control through community based forest management initiatives (INBAR, 1998 and Pabuayon, 2000).

**Plantation development**

Currently, in Nigeria, rattan is treated as an inexhaustible resource. To relieve pressure on natural forests and ensure stable supply of the species for the industry, there is need for plantation establishment (Sastry, 2002). Fortunately, rattan can be planted in logged over forest areas or as an agro forestry crop (Sastry, 2002). To achieve these, there is need for adequate policies to be instituted. Domestic forest policies can give incentive for plantation establishment by providing tenured security to rattan gatherers and planters, credit and technical assistance for plantation development and favorable harvesting and marketing management arrangements. In addition, basic infrastructure such as transportation and effective mechanisms to link sellers with local and foreign buyers are required to improve profitability of rattan production, processing and manufacturing activities (Pabuayon, 2000)

**Research and development**

Rattan development is a mandate of the National Institute for Oil Palm Research. Lack of funds is a major constraint limiting activities in this direction. However, the institute can liaise with the International Network on Bamboo and Rattan (INBAR), Food and Agricultural Organisation, the United Nations Agencies, and the International Tropical Timber Organization (ITTO) which supports research and development on rattan (Sastry, 2002). For instance, Department for International Development (DFID) and the International Fund for Agricultural Development (IFAD) through INBAR initiated taxonomic and socio economic research on rattan in Ghana, Cameroon, Ethiopia, the United Republic of Tanzania and Uganda (IFAD, 1991).

The major area of research needs are silviculture and ecology, plantation technology, development of innovative technologies for low cost mechanization and automation of rattan processing lines (Sastry, 2002). Emphasis should also be placed on resource assessment and conservation and innovative design of products. There is also need for rattan seed bank to ensure availability of seed of good progenies in order to improve plantation quality and yield (IFAD 1991,ESCAP, 1991) Other important areas of rattan research as listed by the International Development Research Centre (IDRC) (Williams et al (1991) include:

- Investigation on the properties of rattan species in order to facilitate assessment of the utilization potential of currently non-commercial species.
- Protection of rattan products with environmentally acceptable preservatives
- Improved process technologies for diversification of products of better quality
- Diversification of products according to properties of individual rattan species;
• Methods of colouring and finishes to be adopted in furniture making;
• Development of panel and wall-cover products;
• Studies on waste reduction and utilization;
• Development of cost-effective designs in keeping with contemporary style;
• Development of hand tools and hardware.

Prospects for sustainable rattan development in Nigeria

A number of opportunities exist for rattan development in Nigeria. Presently, there is a wide gap in wood demand and supply in the country. As rattan can be used as complementary or substitute raw material to wood in the industry, it behooves on government to mainstream rattan into a major raw material in the nation’s industrial sector through initiation of adequate policies and guidelines. Key factors that will promote industrial application of rattans in Nigeria are subsequently discussed.

Low availability of economic wood species in the nation’s forest

The Nigeria forest consists of various flora, typical of most tropical countries in the world (Omiyale, 2003). It has been estimated that the nation’s forest contain approximately 10,000 plant species (Okali, 1997). Out of these, the economic timber resources have been subjected to unmitigated exploitation. Since commercial exploitation of wood commenced in 1782 with pit sawing and the subsequent establishment of power sawmill in the Delta area in 1902, forest exploitation for logs had been on the increase. Wood export peaked in the 1950’s with log and sawn wood and subsequently, veneer and plywood. This trend was maintained through the 60’s and the early 70’s. By mid 70’s the toll of intensive exploitation was already showing and the volume of exported timber, which peaked at 700,000m3 in 1964, decreased steadily to 290,0003 in 1970 (Aribisala 1993).

The unsustainability of forest estates in the country has become a major concern to industrialists and policy makers. The forest resources survey, 1996-1998, revealed that the forest cover in the country has decreased by 20% over the preceding 18 years. Indeed, the total forest estate which stood at 10% of the country’s land area in 1996 is now less than 6% (Adeyoju, 2001). Ola-Adams and Iyamabo (1977) estimated that about 26,000 ha of forest and are destroyed annually in the rain forest zone during conversion of natural forests to artificial plantations and other forms of land development. As a matter of fact, recent estimates indicated that over 90% of the natural vegetation had been cleared (WWF,1989) and over 350,000 ha of forest and natural vegetation are lost annually (NEST, 1991)

These phenomena have led to substantial loss of plant diversity of indigenous germplasm. Ola-Adams (1975) stressed the real possibility of extinction of many Nigeria plants species through overexploitation. It has been estimated that up to 484 plant species in 112 families of the 4,600 plant species in the country are endangered (Gbile et al., 1981). About 205 of the species are endemic and their loss will therefore mean extinction from the earth.

This development has impacted negatively on sustainability of forest industries in Nigeria. As a result of its dependence on wood, the Nigerian wood and wood products sector is the most affected. The sector was one of the most highly organized and developed within the Nigerian economy prior to independence and up to the 1970’s. During this period, the sector brought prominence and development to the nation as a result of its high contribution to the GDP. Activities within the sector was vibrant in the 70’s, as government pioneered establishment of state of art wood processing industries either solely or through bilateral collaboration initiatives. The initiatives led to establishment of wood based panel industries such as Nigeria Romania wood Industries, the African Timber and Plywood (ATP), Epe Plywood, etc.

However, by the mid 1990’s capacity utilization in most of the prime wood industries have started declining, as the pioneer industries started experiencing tottering problems. Most of them are now out of production. The major problems that led to the demise of the industries are increasing wood scarcity, dependence on foreign machinery, spare parts and secondary raw materials.

As a result of scarcity of economic wood species, the sector is currently being forced to utilized tree
species initially regarded and un-economic (RMRDC 2006). Although, this is sustaining activities within the sector, the utilization of sub-standard wood species has a lot of quality implications. According to RMRDC (2010), the total useable volume of wood down to 30cm cutting diameter limit in the reserved forest area of Nigeria is 293,500cm³. This is not significantly different form 473,509,2059.43m³ reported by Akindele et al (2001). When these figures are juxtaposed with the total wood requirement in Nigeria projected at 59,955,00m³ for year 2010 (Bourgione, 1991), it is evident that the Nigeria wood industry requires the injection of a sustainable source of wood raw material. From the figures, it is evident that the total wood available in the natural forests including forest reserves may not last more than 10 years at the current rate of utilization. Thus, necessitating the introduction of credible alternatives. 

Although, plantations of Tectona grandis were established to supply wood raw material to the sector, the mature stock in the plantations had been exhausted through uncontrolled exploitation for export in the 70’s. Focus is now being shifted to the use of Gmelina arborea species that are available in 89,000 hectares of plantations in Nigeria (RMRDC, 1991). Although, the plantations which make up about 40% of the existing hardwood plantations in Nigeria contain mature trees that could be used in the sector, the properties of the wood limit its use in certain applications. Thus, to resuscitate this sector to the level it was in the 1970s-1980s, Nigeria would require investment fund in excess of N600 billion. For optimal achievement of the objective of the formation of the clusters, there is need for the cluster operatives and government agencies promoting it to strategize as follows:

**Procurement and utilisation of standard process equipment**

There is need for the association involved in a cluster to provide standard process equipment for production of components to international standard (GWV 1994). These could be centrally located or duplicated within the clusters to enable members have access to them. The type of equipment to be located in each regional cluster will be dictated by the final product designated for export. In addition, there is need for out-sourcing of standard components. There is need to develop strategic supply alliances to allow each entity to focus on areas of core competencies. Special intervention funds for the procurement of equipment and machinery could be obtained from funding institutions, cooperatives or government agencies such as the Raw Materials Research and Development Council or raised by the associations involved. Each business outfit within the cluster will use the facilities at standard costs.

**Training and innovation**

The primary objective of training rattan processors in the cluster will be to promote the design of exotic, state of art products. This will necessitate a paradigm shift in the business of designing and manufacturing of quality rattan products. According to Oyelara-Oyeyinka and Lal (2006) an
increase of 1% in the number of trained workers potentially increase value added of firms by as much as 60%. Research on appropriate treatment methods, innovations on optimal utilization of rattan and its wastes, are also imperative. Also, research and training institutions should help sustain perpetual research and innovation necessary to continuously generate new products and open new markets. Already in Nigeria, Oyebisi et al (1996) reported that industry-university interaction do exist, but at low levels. This type of interaction is important to enable clusters internalize knowledge developed elsewhere (Rosa and Mohnen 2008).

**Marketing of products**

There is need for development of marketing outlets for the products of the industrial clusters. High quality rattan products produced to international specification and standards will find market in most developed countries. There is also need for development of a comprehensive marketing consultancy for all the products within the cluster, so as to ensure that the products are marketed professionally.

**Provision of infrastructure**

Cluster authorities should provide relevant infrastructure such as energy, road and water within the cluster. This is imperative as energy generation by government agencies has proved unreliable over the years. The procurement, installation, servicing and fuelling of generators for day to day running of operatives should be handled centrally to optimize efficiency. Successful operation of clusters may attract funding agencies and banks, etc., as impediments associated with individual ownership have been removed.

**Conclusion**

Development of rattan the sector is one of the most enterprising solutions to poverty alleviation, employment generation and foreign exchange generation in developing tropical countries such as Nigeria. While the rattan sector currently contributes to the volume of internal trade, its role in foreign exchange generation is constrained by inadequate government attention to the potentials of the sector. The impending wood shortage, coupled with the possibility of complimentary utilization of rattan in the wood products sector, may eventually provide the fulcrum for pivotal development of rattan into a veritable industrial raw material locally. However, maximizing rattan’s potential as a complimentary or substitute raw material to wood will depend on the willingness of government. Establishment of rattan clusters will assist in the development of the sector. The cluster will assist in mainstreaming rattan production, harvesting and processing into the national development agenda. This may be one of the ways of increasing foreign exchange generation from non oil resources in line with Nigeria’s national economic development plans.

**References**


Belcher, B. (1999). The bamboo and rattan sector in Asia: an analysis of production-to-consumption system. INBAR working paper No.22 Beijing, China, INBAR


