



EXTENSIVE RATTAN PRODUCTION-TO-CONSUMPTION SYSTEMS IN SOUTHERN NIGERIA:

A CASE STUDY

by

Olugbenga O. Olubanjo

**Olabisi Onabanjo University
(Formerly Ogun State University)
Ago-Iwoye, Nigeria**

**INTERNATIONAL NETWORK FOR BAMBOO AND RATTAN (INBAR)
Beijing,
China**

September 2002



Executive summary

The production-to-consumption system in southern Nigeria has been found to impact a wide range of stakeholders, from villagers to government officials. Harvesting is almost always from the wild, and local peoples do not regard rattan cultivation as a viable means of income generation. Harvesters have witnessed the depletion of rattan resources, and are now forced to seek rattan in much more distant parts of the forest. Harvesters often do other jobs aside from harvesting, sometimes processing rattan, and sometimes doing non-rattan based work in rural or urban areas. The informal nature of raw rattan sales means supports are not in place for harvesters, and the resource is subsequently exploited rather than managed.

Rattan processing is a means of income generation for some rural and urban residents, but quality is low and techniques are poor. Product development does not exist, and neither do financial, market, information and policy supports to assist the sustainable development of rattan processing and retailing as a means of livelihood generation.

The study produced the following recommendations:

- (i) Priority should be given to the institution of a national policy to accord overt recognition to the rattan sub-sector, especially in the current drive for employment creation under the National Poverty Eradication Programme.
- (ii) Laws governing land access and use should be reviewed so as to encourage private land ownership and private silviculture with rattan alone or intercropped with rubber.
- (iii) Forest-fringe communities should be organised and trained in the harvesting, processing and marketing of rattan on community lands and in forest reserves.
- (iv) Training, credit and simple processing tools should be provided to crafts workers so as to improve product quality.
- (v) Rattan processing techniques and the use of simple processing tools should be studied so as to facilitate the transfer of suitable processing technologies.
- (vi) Development of cane processing villages, and training and processing centres should be adopted as one of the main thrusts of the community forestry plan of the federal and state forestry departments.
- (vii) Wild rattan stocks in the study area need to be sustainably managed and exploited. Long term management and utilisation plan, should thus be evolved by the forestry departments in conjunction with the Ministry of Environment, NGOs and international organisations. This should facilitate the transfer of improved stock and management techniques.
- (viii) Private sector investment should be encouraged by granting long lease agreement for land use and by introducing feasible technologies such as rattan semi-processing from Asia.

It is suggested that government should initiate the development of rattan-based micro-enterprise projects in the Southern Nigeria as part of the National Poverty Eradication Programme (NAPEP). Some of the activities that can be designed as investment projects for funding by international financial agencies and institutions such as African Development Bank, International Fund for Agricultural Development and The World Bank are:

- (i) **Development of Rattan-based Micro-Enterprise:** Small enterprise development is a particularly important poverty alleviation strategy for reaching the rural and urban poor, women and other disadvantaged and



marginalized groups in Southern Nigeria. Conventional credit and service-oriented cottage industry promotion activities should be targeted to these groups. Proliferation of small rattan-based enterprises if encouraged, and if appropriate training is provided, can enhance the lot of the multitude of rural and urban poor, and marginalized groups.

- (ii) **Establishment of Rattan Plantations:** The commercial prospects for rattan cultivation and multiplication in Southern Nigeria are good. There are huge numbers of processors who use them as raw materials for furniture and / or handicrafts production, house construction, and in the manufacture of fish traps. Four genera and ten species of rattan are available in Southern Nigeria, which need to be conserved and improved. Improvements could be achieved by establishing plantations for provenance trials and for commercial multiplication of large diameter rattans from other countries. Also along similar lines, demonstration plots could be established to educate private entrepreneurs, collectors and forest-fringe residents on the procedures and prospects of silvicultural practices with rattan, and with rattan intercropped with rubber.
- (iii) **Development of Community-Level Resource Centres for Information:** Efforts are needed to raise awareness among community members of the need to conserve and sustainably exploit the wild rattan stock in forest communities. In this regard, a network of grassroots level community institutions can be formed and tasked with the following roles:
 - (a) Sensitisation of the community to the need and potential of bio-diversity conservation and environment protection.
 - (b) Improving the process of participatory learning through awareness generation and gender sensitisation.
 - (c) Establishing information systems to constantly monitor and evaluate the problems, needs, priorities and aspirations of the communities, and to document the changes occurring within them.
 - (d) Facilitating inter-community exchange and sharing of knowledge.
 - (e) Provision of training to community members with the express purpose of refining production / processing technologies and disseminating production-related information.
 - (f) Facilitating different training courses using local media and communication channels.
 - (g) Facilitating regular flow of technical information to the community as well as acting as a repository of outside information.
 - (h) Assessing the gaps in the knowledge and skills of community members and assisting in exploiting and in incorporating indigenous knowledge and skills into new people-focussed projects and development initiatives.

All financial values in this report are given in Nigerian Naira (₦). At the time of writing ₦ 129.40 = US \$1.00.



Table of contents

Executive summary	1
Table of contents	3
List of figures, tables and plates	5
INBAR's bamboo and rattan development programmes	6
Chapter 1 : Background	8
Resource Distribution	8
Rattan as an Economic Crop	14
Production and Consumption	14
Major Uses of Rattan	14
Constraints and Potential of the Rattan Sub-Sector	15
Rattan Stock Management and Development	15
Rattan in Construction	15
Rattan in Furniture and Handicrafts	16
Chapter 2: Case Study Framework and Methods	17
Framework and Key Areas of Focus	17
Study Location and Methods	17
General Objective	18
Specific Objectives	18
Study Area	19
Data Collection	20
Research Methods	21
Variables and their Measurements: A Caveat	21
Chapter 3: Results	23
Key Actors of the Sector	23
Key Features of the Sector	38
Production-to-Consumption Environment	38
Rattan Marketing and Trade	43
Indigenous Systems of Stock Management	44
Gaps in Community Knowledge and Skills	44
Community Management of the Rattan Resource	45
Property and Extraction Rights	45
Legislation and Stock Management	45
Prospects for Natural Stock Management and Plantation Cultivation of Rattan	46
Chapter 4: Opportunities, Constraints and Development Options	47
Opportunities and constraints	47
Development Options	48
Raw rattan supply	48
Small scale manufacturing	49
Integrated rattan supplies and cane manufacturing	49
Policy and institutional issues	49



Chapter 5: Implications of the study	51
Major highlights	51
Implications of the findings	51
Chapter 6: Consequences and Outcomes analysis	52
Forestry Master Plan	52
Development Strategies	54
Chapter 7: Recommendations	56
Chapter 8: An Indicative list of investment projects	57
References	59



Lists of figures and tables

Figures

Figure 1: Survey locations in Southern Nigeria	9
Figure 2: General drawings and picture of rattan found in Southern Nigeria	10
Figure 3: Rattan Production-to-consumption systems in Southern Nigeria	24
Figure 4a Rattan harvesting process in Southern Nigeria	39
Figure 4b Flow of raw rattan harvests in Southern Nigeria	40
Figure 4c: Raw rattan sourcing and informal marketing arrangements in Southern Nigeria.	41
Figure 4d: Flow Pattern of Raw Rattan and Rattan Products in Southern Nigeria	42

Tables

Table 1 Nigeria – country profile (1990 - 1991)	11
Table 2: Forest dereservation in southern Nigeria	11
Table 3: Area of forest resources and plantation by state	12
Table 4: Land use patterns in Nigeria	12
Table 5: 1991 census population of South-East Zone of Nigeria	13
Table 6: Land area and use pattern in the South-East Zone, Nigeria.	13
Table 7: Forest areas in the South-East Zone of Nigeria, 1993.	13
Table 8: Common cane products in Southern Nigeria.	13
Table 9: 1991 population of South-West Zone of Nigeria by State.	25
Table 10: Distribution of respondents by community in Southern Nigeria, 1999.	25
Table 11: Distribution of collectors by community and gender, 1999.	26
Table 12: Distribution of collectors by community and educational attainment, 1999.	26
Table 13: Distribution of collectors by duration of training, 1999.	26
Table 14: Distribution of collectors by community and purpose of collection, 1999.	27
Table 15: Distribution of collectors by location, education, experience and rattan price, 1999.	27
Table 16: Distribution of collectors by community and distance travelled, 1999.	28
Table 17: Distribution of collecting communities by average size of collection team and distance traveled, 1999.	28
Table 18: Distribution of collectors by location, annual collection and number of persons per collection team, 1999.	28
Table 19: Distribution of collectors by community and duration of collection trips, 1999.	29
Table 20: Distribution of collectors by community and tenure status at collection site, 1999.	29
Table 21: Collectors and collection practices in the study area.	29
Table 22: Distribution of collectors by community, annual collection, and costs-returns structure, 1999.	31
Table 23: Distribution of processors by major processing communities and main items of production, 1999.	32
Table 24: Analysis of the unit prices of major cane products by location/communities in Southern Nigeria, 1999.	32
Table 25: Analysis of the costs-returns structure and gross margins for cane crafts processors by region of production, 1999.	34
Table 26: Analysis of the costs-returns structure and gross margins for cane crafts processors by community, 1999.	34
Table 27: Analysis of the costs-returns structure and gross margins for cane crafts processors by product type, 1999.	35
Table 28: Analysis of the costs-returns structure and gross margins for cane crafts operators by number of cane crafts produced, 1999.	35
Table 29: Distribution of processors by employment type, labour contribution, pricing mode and problems.	36
Table 30: Traders' sales and returns: raw rattan	36
Table 31: Traders' sales and returns: cane products	37
Table 32: Community members' patronage, assessment and acceptability of final cane products.	38
Table 33: Economic options, opportunities and constraints for residents in Southern Nigeria.	48



INBARs bamboo and rattan development programmes

The application of bamboo and rattan in enhancing the economic and ecological well being of resource-dependent communities in Asia has been extensive. Systematic studies of the potential of bamboo and rattan, previous and current uses, and the social, cultural and political perspectives of these resources have been invaluable in promoting development through innovative and sustainable use of bamboo and rattan. The International Network for Bamboo and Rattan (INBAR) has played a pivotal role in advancing the bamboo and rattan sector in this region. INBAR has facilitated and coordinated research (including action-research) on biodiversity and genetic conservation, production systems, processing and utilisation and socio-economics and policy, while promoting capacity building at the national level. A number of rural development programs are being implemented in the region. INBAR has also been instrumental in promoting technology transfer and information exchange between network partners.

The replicability in Latin America and Africa of the success stories from South and South-east Asia is yet to be assessed, despite the immense interest from the private sector, non-governmental organizations and government institutions in using bamboo and rattan to fuel rural development in the region. The dearth of information on the bamboo and rattan sector has been the main constraint to the development of systematic and sustainable development programs in this sector.

In order to do this INBAR has commissioned national studies from selected countries in, Africa and Central and South America. These national studies will provide a thorough review of the current state and future potential of the bamboo and rattan sectors in each country. Certain standard indicators will be documented in these studies to allow regional comparisons while other information will be country-specific. The national studies will help the experts decide the priority areas of study at the local, national and regional levels. This in turn will help INBAR clearly define its role within these countries as a facilitator and coordinator.

INBAR has developed an outline for these national studies. The outline serves two purposes. Firstly, it is meant to facilitate the data collection process and secondly, it should assist in the formulation of case study reports. The framework also guarantees that comparable information is provided in each national study. Information covered includes; general information on the country (geographical, topographical, climate, demography, political, environmental); the bamboo and rattan sector (biodiversity, production, utilisation, socio-economics, marketing, legislation); the institutional capacity at the national and local level; previous, ongoing and upcoming research and development interventions in the bamboo and rattan sector; and finally conclusions and recommendations.

After defining priority areas, case studies are undertaken in a number of carefully chosen, highly representative, locations within the country to collect raw data on all aspects of the present state of the bamboo and/or rattan sectors in those locations. The case studies investigate the Production-to-Consumption system of the resource. This involves the entire chain of activities to which the bamboo or rattan is subjected, from the production of raw materials (including the input market, where one exists) through the various stages of intermediate sales and processing, to the consumer of the final product. The system includes the technologies used to process the material as well as the social, political and economic environments in which these processes operate. These are all covered in the case study.

Once the raw data has been collected it can then be analysed. It is classified into two focus areas; constraints and opportunities. Possible options that could address the constraints or take advantage of the options and thereby promote development are identified, and a plan for development formulated. This plan is then developed into an action-research project, which is actually a micro- or mini-level rural development project. It is effectively a trial project, and is intended both to test whether the interventions suggested by the study are appropriate and to obtain feedback from the local population on all aspects of the program. The methodology and development options (interventions) of these projects would be finalized at a stakeholders meeting in the country prior to the start of the project.



If an impact analysis study towards the end of the action research project indicates that the project is successful, and the community agrees, this would then form the basis for developing similar programs that could be multiplied in scope and applied in similar situations throughout the region or nation. In this way we go from fully tested small-scale trial project to multiple projects with large impact in a short time. At this national or regional level these programs would attract investment from donors interested in poverty alleviation and rural development.



1. Background

Rattan-based economic activities are an intrinsic part of both rural and urban life in Southern Nigeria. The importance of rattan in the predominantly agricultural economy, and in particular in the rural economy of Southern Nigeria, is widely acknowledged. Raw rattan and cane products enjoy high patronage among farmers, artisans, and informal sector enterprises and small businesses, especially for furniture, handicrafts, building and stall construction, and for several other domestic uses including traps for artisanal fishing.

Rattan-based enterprises are an important source of employment for both the rural and urban residents. According to FOS (1999), in 1998, the agriculture and forestry sector accounted for about 60% (i.e. 18.9 million) of total gainful employment in Nigeria. Moreover, the contribution of agriculture and forestry to the gross domestic products in the same period was about 40.4% (i.e. ₦45.62 billion). Of the estimated contribution of the agriculture and forestry sector, the share of rattan and cane products is negligible and barely above zero. This is because rattan and cane production are still done at the informal and primitive level. Both collectors and processors harvest and process mainly to satisfy their subsistence requirements. Moreover, the few urban-based processors produce low quality cane products and this is done mainly for domestic consumption and trade. The national market is still in its infancy with less pronounced, less reliable and less efficient distribution channels, and poor transportation infrastructure and methods. The only items that attract significant value addition in the rattan trade in Southern Nigeria are wild collection of poles, and the production of furniture and handicrafts. National and overseas trade in rattan and products are yet to attain their full potential in Nigeria – in contrast to most economies in Asia.

Considering the sizeable endowment of both human and wild rattan resources, and the richness and widespread nature of indigenous craftsmanship, Nigeria seems to be in a good position to appropriate a sizeable comparative advantage from commercial rattan and crafts production. This is especially so as the large numbers of informal workers in the crafts business could be trained to improve their skills. They could also be assisted in value-added processing, and local and international marketing of their products.

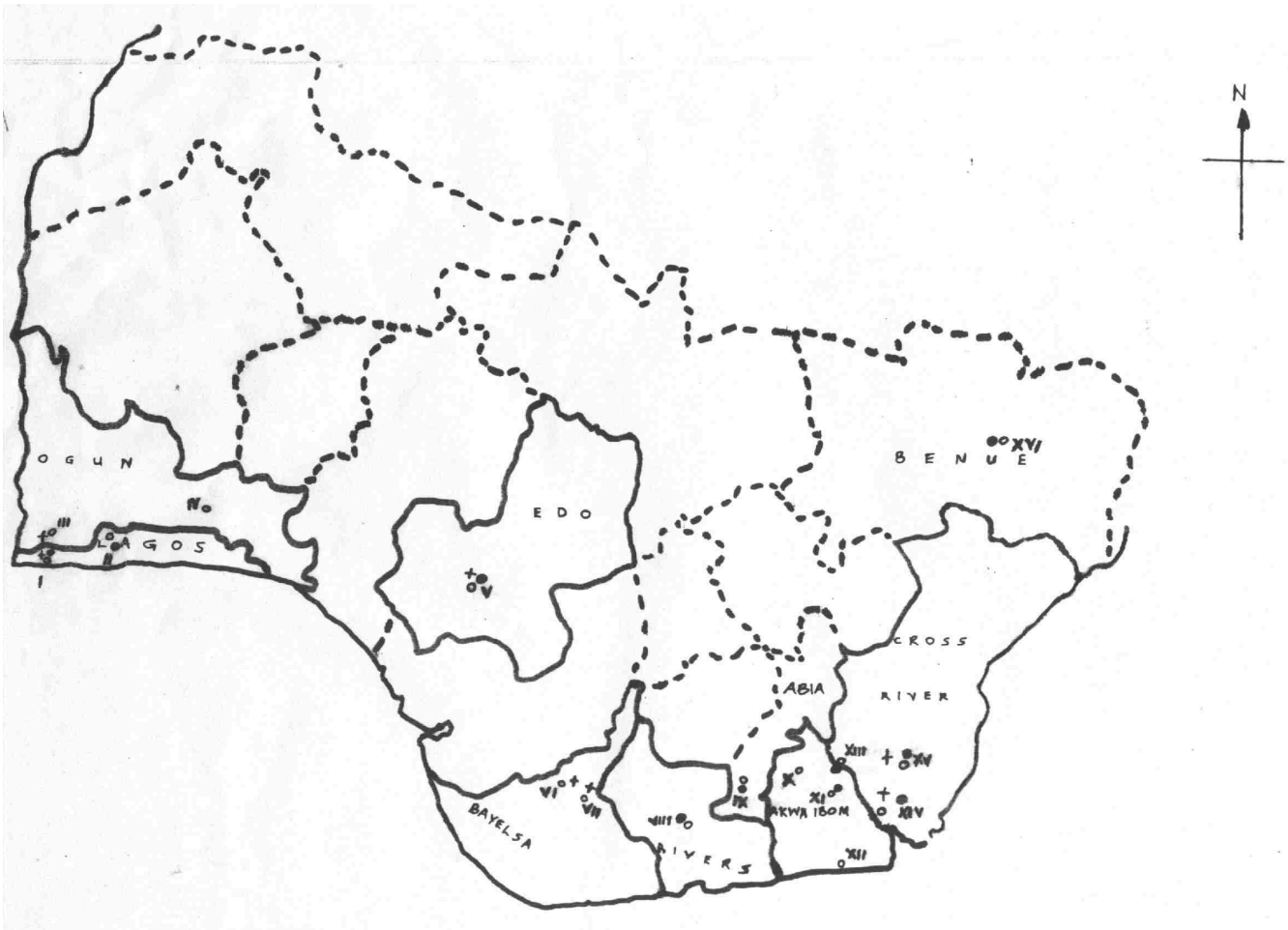
Resource Distribution

Rattans are endemic to the mangrove and high forest vegetation of Southern Nigeria. However, they are more concentrated in the Niger Delta Area (i.e. Edo, Delta, Bayelsa and River States) and Cross-River State in the South-East of Nigeria bordering The Republic of Cameroon (Figure 1). Species abundance and diversity seems directly related to the amount and distribution of rainfall with States that receive well-distributed, higher annual rainfall such as Cross-River, Delta, Bayelsa and River States, having several species. Specifically, rattan species of the genera: *Laccosperma* and *Eremospatha* have contributed significantly to livelihoods of people around the Cross-River National Park in South-East Nigeria (Caldecott, 1996).

Evidence from the literature has confirmed the presence of four genera and ten species of rattan in Nigeria (Morakinyo, 1993; Dahunsi, 2000). The four genera found in Nigeria are: *Laccosperma*, *Calamus*, *Oncocalamus*, and *Eremospatha*. The ten species of rattan found in various locations in Nigeria are: *L. secundiflorum*, *L. leave*, *L. opacum*, *E. hookeri*, *E. wendlandiana*, *E. macrocarpa*, *C. deeratus*, *C. bateri*, *O. mannii*, and *O. wrightianus* (Figure 2).

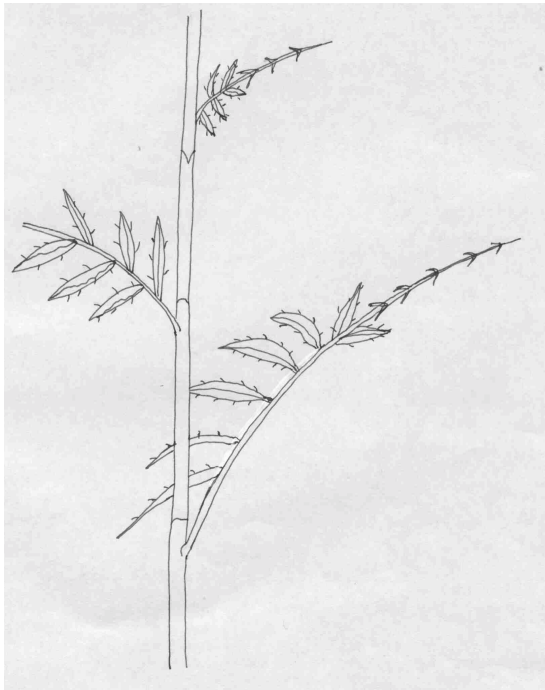
Natural rattan resources in Southern Nigeria are fast dwindling due to unchecked clearing of forest land for agricultural purposes (i.e. food and cash permanent crops, and livestock production, among others) and house construction,

indiscriminate collection of forest resources, bush fires, incessant oil-spillage, generally poor forest stewardship and management practices, and a dearth of appropriate public policies and agencies for rattan conservation (Tables 1 to 8). Presently, rattan management in the forest communities is mainly restricted to the harvesting of mature canes and frequent shifting of collection sites. Commercial or plantation cultivation and private forestry with rattan is still a novel concept among cane gatherers and host communities in Southern Nigeria. More importantly, the belief among collectors is that the natural stock is inexhaustible.

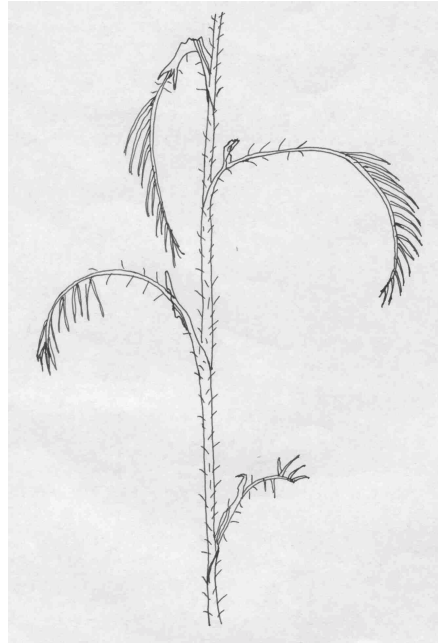


I	Badagry	XI	Uyo
II	Ikeja	XII	Upenekang
III	Ado-Odo	XIII	Itu
IV	Ijebu-Ode	XIV	Calabar
V	Benin City	XV	Akampka
VI	Kaiama	XVI	Gboko
VII	Mbiama		
VIII	Port Harcourt	#	Survey site
IX	Aba	⊥	Collection site
X	Ikot Ekpene	!	Processing centre

Figure 1: Survey locations in Southern Nigeria



(a)



(b)



(c)



(d)

Figure 2: General drawings and picture of rattan found in Southern Nigeria



Table 1: Nigeria – Country profile (1990 - 1991)

Land area	983,213 sq. km.
Population:	
Urban	34%
Rural	66%
No of Cities with population above 500,000	9
Economic Classification – Low Income Economy	
GNP Share (Agric.)	1.6%
Average Annual Deforestation	320,000 ha
(% of Total Forest Area)	2.7
Climate	
Rainfall	625 - 4300 mm
Mean Minimum Temperature	25°C
Mean Maximum Temperature	32°C
Vegetation types:	
Savanna Zone	773,783 sq. km.
Derived Savanna Zone	75,707 sq. km.
Forest Zone	133,717 sq. km.
No of Protected Areas	4
% Habitat Loss in:	
Dry Forest	76
Moist Forest	83
Savanna	80
Wetlands Marsh	80
Mangrove	50

Source: Ologe et al, 1992; Aina and Salau, 1992.

Table 2: Forest dereservation in southern Nigeria

Forest Reserve and State	Gazetted Area (Ha)	Dereserved Area (Ha) (%) ^a		Alternative Land Use
Anambra State:	12098	1500	12.40	Food crop farming
Osomari	450	100	22.22	Food crop farming
Akpaka	14575	500	3.43	Food crop farming by natives
Bendel State:				
Okomu	123802	15000	12.12	Federal oil palm project
Orle River	40633	60	0.15	Petroleum
		19166	47.17	Food crop farming
Iguobazuwa	26936	1810	6.72	Cocoa Board Project
Ologholo-Emu	14996	145	0.97	Cattle Ranch
Urho				
Ivi-Ada-Obi	18002	580	3.22	Cattle Ranch
Ogba	5517	720	13.05	Urban development; airport, Federal Sawmill, Forest research plot
		1010	18.31	Food crop farming



Obaretin	10800	2849	26.38	Bendel Oil palm project
Ehor	29583	8	0.03	Cocoa project
Ologbo	19425	1280	6.59	Oil palm plantation project
Ebue	9176	140	1.53	Food crop farming
Sapoba	49210	35	0.07	Oil exploration
Gilli-Gilli	36260	26	0.07	Oil exploration
Akwa Ibom and Cross River State: Stubbs Creek	31080	11	0.04	Food crop farming
Ekinta	10878	10878	100.0	Food crop farming
Imo State: Ubibia	755	106	14.04	Food crop farming
Achara-Ihe	794	300	37.78	Oil palm project
Rivers State: Upper Imo River	9696	10	0.10	Food crop farming

Note: ^aAuthor's computation. Source: Osemeobo, G. J., 1988,

Table 3: Area of forest resources and plantation by state

State	Area of Forest Reserve (Ha)	Area of Forest Plantation (Ha)	Percentage Forest Plantation in Forest Reserve
Akwa Ibom	31857	25800	80
Cross River	610129	19000	65
Delta	78506	2000	3
Edo	482047	150000	31
Lagos	12579	2000	16
Ogun	273148	35000	13
River & Bayelsa	25000	231	1

Source: FOS (1997).

Table 4: Land use patterns in Nigeria

Land Use	Area (million Ha)	% of total
Cropland	30.96	34
Pasture	20.94	23
Forest	14.57	16
Rivers/Lakes/Reservoirs	11.66	13
Others	12.93	14
Total	91.06	100

Source: Shaib, Aliyu and Bakshi (undated)



Table 5: 1991 census population of South-East Zone of Nigeria

State	Male	Female	Total	Land Area	Percentage of nation's land mass	Population per square km
Akwa Ibom	1162430	1197306	2359736	7081	9.00	333
Cross River	945270	920334	1805604	20156	25.64	93
River & Bayelsa	2079583	1904274	3983857	21850	22.79	182

Source: Adedipe, Bakshi, Odegbaro and Aliyu (1996)

Table 6: Land area and use pattern in the South-East Zone, Nigeria.

State	Man Land Ratio	Farm Land (km ²)	Farm Land per capita	Forest Reserves (km ²)		
				Natural	Plant-ation	Total
Akwa Ibom	333	-	-	305	13	318
Cross River	93	8911*	0.002	5907	194	610
River**	182	2789	0.001	1357	2	1359
Zonal	241	27806	0.002	8461	375	8836

Notes: * Akwa Ibom State included. ** Bayelsa State included. Source: Adedipe *et al.* (1996).

Table 7: Forest areas in the South-East Zone of Nigeria, 1993.

State	Forest Area (Ha)			
	Reserved	Unreserved	Plantation	Total
Akwa Ibom	18000	15000	3000	36000
Cross River	340000	283000	19000	642000
River	18000	341000	-	359000
Zone Total	391000	796000	40000	1085000

Source: Adedipe *et al.* (1996).

Table 8: Common cane products in Southern Nigeria.

Chair (sitting room type)	Laundry box	Walking stick
Table	Dust bin	
Stool	Wig holder	
Dining set	Wedding chair	
Shelf	Lamp shade	
Wardrobe	Nursery box	
Magazine rack	Set ball (oval) chair	
Basket	Rocking chair	
Flower vase	Relaxing chair	
Mirror frame	Flower stand	
Baby cot	Sieve	
Tray	Fish trap	
Room divider	Smoking platform for fish	
Bedside box	Cane bed	



Rattan as an Economic Crop

In Southern Nigeria, rattan is extensively found on non-farm forestlands and also on the fringes of cultivated farmlands. The latter is the case where forests are cleared for farming purposes, and especially where shifting cultivation is practised. Rattans grow in complex communities with forest plants (i.e. trees and shrubs) in swamps, and upland areas. The wild stock are, however, increasingly suffering from city encroachment, lack of proper stewardship practices, and indiscriminate and unsustainable harvesting. The two broad categories of rattan (i.e. cane and willow) species found in Nigeria are thus the swamp and upland varieties.

Although there is little interest in cultivating rattan as a commercial crop, there exist a sizeable potential for its cultivation as an agro-forestry crop with rubber, and in disused rubber plantations. Large private and government owned rubber plantations abound in many communities in Southern Nigeria.

Production and Consumption

Rattan is collected in the wild in Southern Nigeria. The collection is all-year round, and the use pattern is overwhelmingly based on traditional practices. It is used mainly for the construction of buildings and furniture and handicrafts manufacturing. Its potential in these areas of use is however limited by the narrow market and the generally poor state of infrastructure and production technology. Some common uses and products in the study area are provided in Table 8.

Rattan comes to the market (i.e. processing centres) through collectors, processors (i.e. user-sourcing), and also, through professional traders and middlemen. The rattans are collected from community and government forests, and reserved lands. The demand-supply situation is widely varied by species, place and time. As such, there are usually geographical variations in the number of stems as well as in the selling price per bundle. The final price of rattan bundles and rattan crafts and furniture in the urban centres and metropolises are usually higher than at or near the collecting centres and forest fringes.

Major Uses of Rattan

Rattan plays a vital role in rural and urban socio-economic life with its variety of uses: material for house, shop / stall and store / granary construction; and for the manufacture of furniture and handicrafts for income generation and supplementation.



Building Construction: In the Niger Delta Area and South-East of Nigeria, rattans are traditionally used to construct frames, walls, partitions and ceilings of mud houses, and some other utilities (e.g. barns and granaries) and dwelling structures.

General Construction: Rattans are further used for general construction purposes. Sun-dried canes are employed to produce a myriad of products including, fishing traps, rafters, and the manufacture of local xylophones.

Agricultural Articles: Several other articles are made from rattan for on-farm and off-farm agricultural uses. Some common ones include platforms, mats and trays, racks, baskets, sieves and winnowers, and as rope materials for tying ladders, hawking live snails, and for trailing yam tendrils,.

Arts and Handicrafts: diverse arts and interior decoration pieces are made from rattan stems, splits and ropes. These include pieces of furniture, flower vases, wig holders, lampshade and stands, mirror and picture frames, hand fans, shelves and wardrobes, shopping and laundry baskets, and walking sticks.

Constraints and Potential of the Rattan Sub-Sector

Rattan Stock Management and Development

In spite of the importance of cane and cane products in the rural areas, and in some urban centres in Southern Nigeria, no visible effort has been made to organise and develop the local trade in rattans. No overt effort has been made to establish rattan nurseries and plantations or to even evolve policies for natural stock conservation and management. Nonetheless, gatherers have remained ever resourceful and encouraged by the growing domestic demand for cane and willow in the cities.

Rattan in Construction

As reinforcement, rattan strengthens wall partitions and frames of structures used mainly as stores, market stalls, and residential abodes by members of forest communities. These structures are usually produced and maintained at low cost and are quite durable. They however are mostly lacking in terms of aesthetic qualities / values, and richness of architectural designs.



Rattan in Furniture and Handicrafts

These two areas of use together constitute a sizeable subsector for rattan in Southern Nigeria. The participants include small subsistence collector-processors who produce low quality products and reside mainly in the villages, and the urban-based processors who produce more refined products. These processors lack conventional skills for cane treatment and for aesthetic designs. Specifically, they use poor tools and processing technologies, lack storage facilities, operate in areas with poor infrastructure, and in narrow markets and communities with low preference and low effective demand for cane products.



2. Case study framework and methods

Framework and Key Areas of Focus

The choice of a case study approach is justified by some unique factors regarding the study area. Some of the salient features of the study area are as follows:

- (i) Variables of interest such as the production of raw rattan, the number of families and households engaged in rattan-based cottage industries and in raw rattan trade in Southern Nigeria were not controllable.
- (ii) There was an emphasis on tracing, establishing, understanding and explaining the complex associations among specific components, variables and socio-economic actors in the rattan sub-sector.
- (iii) Major stakeholders in the sub-sector cannot be studied in isolation from the cultural and socio-economic context of the locality / community in which they operate and/or find abode.
- (iv) The dispersed and remote locations of the stakeholders' communities placed constraints on the research mode and data collection design followed in the study.

The focus in the study is thus on providing empirical information on the following:

- (i) Key institutional and individual actors and decision makers in the sub-sector.
- (ii) Operating features of the sub-sector.
- (iii) Volume and distribution of benefits among major stakeholders.
- (iv) Options and constraints faced by the stakeholders.
- (v) Feasible and appropriate strategies and modalities for improving activities in the sub-sector.

Study Location and Methods

The broad geographical area chosen for the study is Southern Nigeria. This expansive geographical area was selected so as to satisfy the requirements of the research design – the production-to-consumption framework – followed in this study. This research design was expected to furnish a better understanding of the extensive rattan production-to-consumption systems found in Southern Nigeria. Field survey methodology was employed to source information. Also, empirical literature and historical



documentaries / periodicals as well as expert opinions were sourced on activities and practices in relation to the rattan sub-sector in Southern Nigeria.

The focus in the case study is to provide *inter alia*:

- (i) Descriptive information on how rattan production-to-consumption systems in Southern Nigeria are organised.
- (ii) Analyse the interplay of marketing forces including the trade channels and value added chain.

Cogent socio-economic issues addressed in the study thus include:

- (i) Employment, investment, marketing costs and benefits, and output and income of rattan collectors and rattan-based enterprises.
- (ii) Stock and extraction level, and value of rattan to the rural economy.
- (iii) Consequences of diminishing stock and supplies on rural, and urban informal sector incomes.
- (iv) Socio-economic institutions, tenure status, and collection, marketing and processing rules.
- (v) Regulatory functions of the local institutions / government, and the facilitating role of local authority, government and non-government organisations.

Objectives

General Objective

The general objective of this study was to identify opportunities for the development of the rattan sub-sector in the Southern Nigeria. The study was, in particular, geared towards identifying and analysing the constraints and potentials for achieving sustainable development of rattan-dependent communities and rattan-based activities and enterprises in the study area. The micro-level study was thus expected to contribute to the development of an empirical basis for intervention in the extensive but small-scale rattan production-to-consumption systems in Southern Nigeria.

Specific Objectives

The case study attempted to achieve the following specific objectives:



- (i) Describe extensive rattan-based production-to-consumption systems specifically directed at (a) showing the flow of raw material from the collection centre to the final cane product consumers, (b) cost pricing, and (c) identification of major stakeholders along with their interests, aspirations and constraints.
- (ii) Identify within the extensive system, groups that are potential targets for development interventions based on (a) level of poverty, (b) the number of people involved, (c) the role of rattan in the local economy, (d) gender and disadvantaged group specificity to rattan including the artisanal fisher-folks, and (e) the scope for expansion of rattan-based enterprises.
- (iii) Describe the decision-making environment of the study groups including collectors, processors and consumers in terms of (a) indigenous knowledge and skills, (b) the resource base and rate of depletion / re-generation, (c) socio-cultural constraints and opportunities, and (d) the existence of incentives and disincentives including policy, rules and regulations related to tenure, funding and enterprise development.
- (iv) Analyse the current problems and future opportunities associated with the rattan production system by (a) describing the existing system of collection and transportation, (b) identifying the practical constraints faced by collectors, and (c) identifying appropriate interventions to overcome such constraints.
- (v) Make suitable recommendations for both short and long-term actions specifically to (a) organise and empower local groups through skill enhancement and group organisation, (b) promote rattan collection for utilisation purposes by establishing and communicating guidelines for sustainable harvesting of wild rattan stock, (c) disseminate imported technology and information, and (d) focus the efforts of donor-funded projects on more cost-effective and livelihood enhancing production activities.

Study Area

The study was conducted in several village communities, towns and cities in the Southern Nigeria. This wide geographical area resides both collectors and processors of raw rattans. The collectors are mainly located in Mbiama and Kaiama in Bayelsa State of the Niger Delta Area and Iwuru and Awi-Akamkpa, Cross-River State of the South-East of Nigeria – communities with sizeable endowments of swamp and upland rattan species. The natural rattan stock in these areas is available in mixed stands with some other forest plants.

The processors are found mostly as family units residing close to collection centres, in major towns and cities, which serve as ready source of other raw materials and ready market for the finished cane products. The Urhobos of Delta State and the Ibibios of Akwa Ibom State are the two main tribes engaged in rattan processing. Other tribes involved in rattan processing, although to a much reduced extent, are the Efiks of Cross-River State, the Igbos of South-East, Nigeria, and the Binis of Edo State.



The size of the subsistence and commercial collectors and processors runs into thousands. They are mostly small farm operators, landless people and traders, who have been operating in the sub-sector for periods ranging from five years to several generations. The major collecting communities selected for the study and covered during the survey were: Awi-Akamkpa, Iwuru, Kaiama, Mbiama, and Efumwegbe.

Similarly, the communities with processors covered during the survey conducted in the study are Awi-Akamkpa, Benin, Calabar, Efumwegbe, Ekim Itam, Ikot Omin, Iwuru, Lagos, Oyigbo, and Uyo.

Data Collection

In order to collect the basic socio-economic, and collection / production and consumption-related information for rattan in the study area, sample survey was carried out. To assess stock situation and state of current knowledge about rattan in the Southern Nigeria, an inventory involving an extensive literature search was carried out. A sample survey of existing enterprises that use and process rattan was carried out, and the raw material demand and supply, and product marketing were studied. Both sample survey techniques and stakeholder participatory methods such as the rapid appraisal method were used to appraise existing practices and skills with respect to harvest and use, and the prospects of rattan-focussed extension and development activities. Interviews and discussions were also conducted with key participants both individually and in focussed groups and stakeholder associations.

A sample survey was carried out specifically to find out about collectors' time allocation, volume and location, sales mode, the role of intermediaries in both the sale of raw materials and the purchase of processed goods, processing technology and activities, and the identification of salient constraints / limitations in rattan production.

In Southern Nigeria, potential interventions in the production-to-consumption system were viewed as belonging to two broad areas, viz.:

- (i) Rattan products promotion including market information on local furniture and handicrafts, introduction of improved and aesthetic designs and modern processing tools and equipment, short-duration and focussed training, and linking of urban and semi-urban consumers to local and remotely located artisans and collectors.
- (ii) Organising sector-wide extension and monitoring activities by coordinating as well as synchronising rattan sector programmes with other development and forest-related activities, by providing training to disadvantaged and gender groups, by helping to organise better marketing strategies and institutions, and by providing better financing facilities, including venture capital, to rattan-based entrepreneurs.



Research Methods

The case study method was used in the study. The approach was employed because of the following considerations:

- (i) It can furnish information that is rooted in empiricism.
- (ii) It can provide practical illustrations of the challenges likely to be faced in implementing new approaches to development in a largely agrarian economy like Nigeria.
- (iii) It has an incomparable ability to reveal the unexpected and to present new conceptual, technical, administrative or measurement problems together with practical solutions.
- (iv) Activity on the ground is the framework within which researchers, policy-makers, and development workers can understand and implement issues of development.

Since rattan collection, processing and marketing constitute a complex system, multiple sources of evidence were used in the study. Such multi-focus information sourcing enables introduction of reliability and comprehensiveness into the data collection and subsequent data analysis. However, in the subsequent data analysis, historical, attitudinal, observational, functional and institutional methods were used to discern multi-pronged interactive relationships. This follows, since not all the variables of interest are quantitative in nature or allow for easy manipulation. As such, direct cause-effect relationship could not (and would not) be established in the study.

Variables and their Measurements: A Caveat

The bio-physio-geographical variables could not be measured directly as a part of the case study research. Among the bio-physio-geographical variables in the study are data on the extent and location of rattan resource, their availability in terms of requirement, quantity and quality, rate of seasonal and annual extraction, and estimated growth and yield. These were collected as part of the extensive literature search. In addition to the evidence collected from secondary sources on species richness / abundance and extraction rate, effort was made to obtain further information with the aid of some specific questions included in the focussed, survey schedule administered on collectors. This effort was however frustrated by the inability of most natives and professional collectors to provide useful responses to the survey questions. Moreover, collections are usually done simultaneously from diverse ends of collection sites. This indiscriminate, uncoordinated and staggered collection has made rattan stock to exist in non-contiguous mixtures – in form of logged-over and undisturbed patches.

Further to circumvent this major limitation to the survey, the study resorted to indirect measures and indicators of stock level and extraction rate within the individual collecting communities. Specifically,



questions were asked so as to document information on distances covered in the forest and number of hours taken from home to harvest sites, duration of collection trips, size of collection team, and size of harvest per trip.

The study data were analysed using frequency counts and tabulations, and ratios and percentage relatives. Production-related information is provided in Tables 10 to 31. Socio-economic information was derived and aggregated from the results of the enterprise-based survey.



3. Results

Key Actors of the Sector

Major actors in rattan-based activities are: collectors, rural and urban cane processors, and traders in cane and products, and community members including the artisanal fisherfolks. Collectors and processors who form the bulk of the stakeholders, are unable to expand and integrate forward in their processing and marketing activities because of several socio-economic factors including low level of education, low social status of collectors and cane workers, weak financial position, and lack of the required knowledge, expertise and organisation. Moreover, collection is done mainly on a subsistence level – to satisfy the emergency cash needs in some instances. No overt cultivation is done.

Figure 3 presents the diagrammatic representation of the production-to-consumption systems for rattan in Southern Nigeria. Many Nigerians (i.e. both rural and urban-based) as well as men, women, and children of both sexes are engaged and earn their livelihoods within the PCS framework for rattan in Southern Nigeria. Moreover, the systems, in operation, are intricately interwoven and even integrated in some aspects, with individuals serving several roles simultaneously. Some of the features discovered about the individual stakeholders are discussed below.

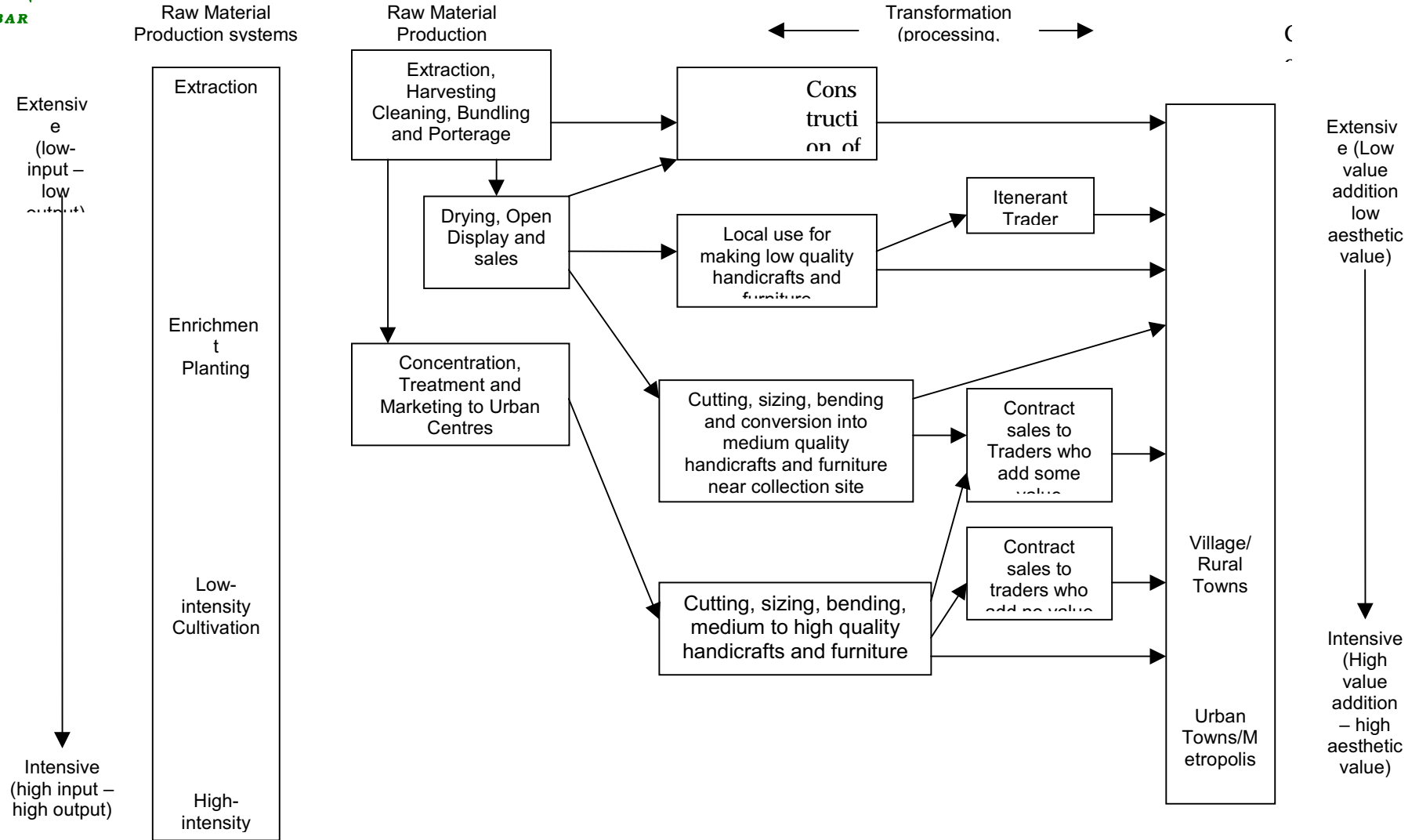


Figure 3: Rattan Production-to-consumption systems in Southern Nigeria



Collectors: Tables 11 to 22 present the socio-economic and demographic information on rattan collectors in Southern Nigeria. Wild rattan collection, an economic pre-occupation among some forest and forest-fringe residents in Southern Nigeria, transcends both age and gender categories. Youths, adults and elderly men and women were found to be engaged either actively or on part-time basis in wild rattan extraction from natural forests on community lands, and in government-owned and managed forest reserves. The level of capital investment in the trade is however quite low as only machetes are used. Also, the practice of wearing protective (hand) gloves during rattan collection was rare.

Table 9: 1991 population of South-West Zone of Nigeria by State.

State	Male	Female	Total
Delta	1273208	1296973	2570781
Edo	1082718	1077130	2159848
Lagos	2999528	2686253	5685781
Ogun	1144907	1193663	2338570

Source: Adedipe *et al.* (1996).

Table 10: Distribution of respondents by community in Southern Nigeria, 1999.

Community	App	Coll	Coll/ Proc.	Coll/ Trad.	Coll/ Proc./ Trad.	Comm. Mem	Proc.	Trad.	Cust. Off.	For. Guard	Hired labour	Art.Fish. Folks	Total
Aba							1						1
Ado-Odo						1							1
Agemowo			2										2
Awi-Akamkpa	2	17	1			17	5				1	1	44
Bakassi												6	6
Benin	2					1	8	1			3		15
Calabar	1	1	1	1		7	4		1		1	11	28
Edion		1											1
Efumwegbe	1				3		5						9
Eket								1			1	3	5
Ekim Itam						2	7				1		10
Esin Udo												1	1
Gbanwe			1										1
Gboko							2						2
Ijebu-Ode						2		2					4
Ikorodu						1							1
Ikot Iwang		1											1
Ikot Omin				1		2	2				1		6
Ikot Ekpene						6	1	6					13
Iwuru	1	5	1				3				2		12
Kaiama		7				1							8
Maryland,Lagos	2			1		3	36	1			7		50
Mbiama		3											3
Nnetim								1					1
Odukpani						1				1			2
Oron							2					13	15



Oru						1								1
Oyigbo	5					2	23	1				21	1	53
Port Harcourt						3		1						4
Powe, Bayelsa													2	2
Ukpenekang							2						2	4
Uyo						3	3							6
Zetako		1	1											2
All	14	36	7	3	3	53	104	14	1	1	38	40	314	

Table 11: Distribution of collectors by community and gender, 1999.

Community	Gender of Collector		Total
	Female	Male	
Agemowo		1	1
Awi-Akamkpa		17	17
Calabar		3	3
Edion		1	1
Efumwegbe		3	3
Ikot Iwang		1	1
Ikot Omin		1	1
Iwuru		6	6
Kaiama	5	2	7
Maryland, Lagos		1	1
Mbiama		3	3
Zetako		1	1
All	5	40	45

Table 12: Distribution of collectors by community and educational attainment, 1999.

Community	Educational Attainment (yrs)				Total
	No Schooling (0)	Primary Education (1-6)	Secondary Education (7-12)	Post-Secondary Education (>12)	
Agemowo	-	-	1	-	1
Awi-Akamkpa	7	6	3	1	17
Calabar	-	1	2	-	3
Edion	-	1	-	-	1
Efumwegbe	1	-	2	-	3
Ikot Iwang	1	-	-	-	1
Ikot Omin	-	1	-	-	1
Iwuru	2	2	2	-	6
Kaiama	7	-	-	-	7
Maryland, Lagos	-	-	-	1	1
Mbiama	-	-	3	-	3
Zetako	1	-	-	-	1
All	19	11	13	2	45

Table 13: Distribution of collectors by duration of training, 1999.

Community	Length of Training					Total
	Few days per week	1-6months	7months-1year	>1year	No Response	
Agemowo	1	-	-	-	-	1
Awi-	6	6	1	1	3	17



Akamkpa						
Calabar	1	1	-	-	1	3
Edion	-	1	-	-	-	1
Efumwegbe	2	-	-	1	-	3
Ikot Iwang	-	-	-	-	1	1
Ikot Omin	-	-	-	-	1	1
Iwuru	2	1	2	1	-	6
Kaiama	2	2	2	1	-	7
Maryland, Lagos	-	1	-	-	-	1
Mbiama	-	1	1	1	-	3
Zetako	1	-	-	-	-	1
All	15	13	6	5	6	45

Table 14: Distribution of collectors by community and purpose of collection, 1999.

Community	Collection Goals				Total
	As an hobby	To earn a living	To supplement income	Others	
Agemowo		1			1
Awi-Akamkpa		16		1	17
Calabar		3			3
Edion					1
Efumwegbe		3			3
Ikot Iwang		1			1
Ikot Omin		1			1
Iwuru		4	2		6
Kaiama		5	2		7
Maryland, Lagos	1				1
Mbiama		2	1		3
Zetako			1		1
All	1	36	6	2	45

Table 15: Distribution of collectors by location, education, experience and rattan price, 1999.

Location	Educational Attainment (yrs.)	Gathering Experience (yrs.)	Rattan Price (₦ per bundle)		Average over cane & rattan prices (₦)
			Cane	Willow	
Agemowo	11	7	0.00	0.00	0.00
Awi-Akamkpa	5	4.5	180.00	280.00	230.00
Calabar	9	7	130.00	500.00	315.00
Edion	5	3		50.00	50.00
Efumwegbe	7	7	255.00	300.00	280.00
Ikot Iwang	-	1	550.00		550.00
Ikot Omin	6	5	500.00	500.00	500.00
Iwuru	5	5	240.00	40.00	140.00
Kaiama	-	26	150.00	70.00	110.00
Maryland, Lagos	13	5	375.00	0.00	375.00
Mbiama	10	3		80.00	80.00
Zetako	-	15	400.00	300.00	350.00
Average	6	8	300.00	240.00	270.00



Table 16: Distribution of collectors by community and distance travelled, 1999.

Community	Travel Distance (km)			Total
	<5	5-10	>10	
Agemowo	-	1	-	1
Awi-Akamkpa	2	3	12	17
Calabar	-	1	2	3
Edion	1	-	-	1
Efumwegbe	-	2	1	3
Ikot Iwang	1	-	-	1
Ikot Omin	-	-	1	1
Iwuru	1	2	3	6
Kaiama	3	-	4	7
Maryland, Lagos	-	1	-	1
Mbiama	-	1	2	3
Zetako	-	1	-	1
All	8	12	25	45

Table 17: Distribution of collecting communities by average size of collection team and distance traveled, 1999.

Community	Travel Distance (km)			Average
	<5	5-10	>10	
Agemowo	-	2	-	2
Awi-Akamkpa	5	5	5.25	5.18
Calabar	-	9	6	7
Edion	1	-	-	1
Efumwegbe	-	6.5	15	9.33
Ikot Iwang	5	-	-	5
Ikot Omin	-	-	5	5
Iwuru	3	3	4.67	3.83
Kaiama	9	-	6.5	7.57
Maryland, Lagos	-	8	-	8
Mbiama	-	18	3.5	8.33
Zetako	-	3	-	3

Table 18: Distribution of collectors by location, annual collection and number of persons per collection team, 1999.

Community	Number of Persons per team				Total
	1-2	3-5	6-10	>10	
Agemowo	48				48
Awi-Akamkpa	188	189	720		1097
Calabar	360		2400		2760
Edion	180				180
Efumwegbe		1440	6000	960	8400
Ikot Iwang		960			960
Ikot Omin		252			252
Iwuru	744	804	72		1620
Kaiama	168	2016	600	120	2904
Maryland, Lagos			288		288
Mbiama	720	240		240	1200
Zetako		72			72
All	2408	5973	10080	1320	19781



Table 19: Distribution of collectors by community and duration of collection trips, 1999.

Community	Duration per trip				Total
	Daily	2-3days	5-7days	2-3weeks	
Agemowo	1	-	-	-	1
Awi-Akamkpa	8	5	4	-	17
Calabar	-	1	1	1	3
Edion	1	-	-	-	1
Efumwegbe	-	-	3	-	3
Ikot Iwang	-	-	1	-	1
Ikot Omin	-	-	1	-	1
Iwuru	2	-	3	1	6
Kaiama	3	2	2	-	7
Maryland, Lagos	-	-	-	1	1
Mbiama	1	1	1	-	3
Zetako	1	-	-	-	1
All	17	9	16	3	45

Table 20: Distribution of collectors by community and tenure status at collection site, 1999.

Community	Tenure status of collection site		Total
	Collective	Individual	
Agemowo		1	1
Awi-Akamkpa	16	1	17
Calabar	3	0	3
Edion	1	0	1
Efumwegbe	2	1	3
Ikot Iwang	1	0	1
Ikot Omin	1	0	1
Iwuru	6	0	6
Kaiama	6	1	7
Maryland, Lagos	1	0	1
Mbiama	3	0	3
Zetako	0	1	1
All	40	5	45

Table 21: Collectors and collection practices in the study area.

1. Tenure Status: <ul style="list-style-type: none"> • Individual • Collective 	5 40
2. Management Practice: <ul style="list-style-type: none"> • Selective Harvesting • Plant Support • No Response 	36 2 7
3. Buyer: <ul style="list-style-type: none"> • Traders • Rural-based Processors • Urban-based Processors • Both • No Response 	6 23 4 11 1



4. Sales Point: <ul style="list-style-type: none"> • Within the village • Taken to city • Buyer from neighbouring village • No Response 	35 4 4 2
5. Any Processing? <ul style="list-style-type: none"> • Yes • No • No Response 	20 23 2
6. Any Local Management Institution? <ul style="list-style-type: none"> • Yes : Informal • Formal • Both • No Response • No • No Response 	14 4 1 4 19 3

As a form of integration in the system, some of the collectors also carry out the transformation of harvested raw rattan into finished products such as low quality (or poorly finished) pieces of furniture and handicrafts. These are either used within the household or sold to consumers within the community. Raw rattan cuttings and ropes are also used or sold for subsequent use in house / stall and shop construction in most communities, especially in the South-East of Nigeria. Key collecting communities found and covered during the survey are Awi-Akampka and Iwuru in Cross-River State, Mbiama and Kaiama in Bayelsa State, and Efumwegbe in Edo State.



Table 22: Distribution of collectors by community, annual collection, and costs-returns structure, 1999.

Community	Collection (bds.)	Unit price (₦)	Qty per trip	Royalty (₦)	Transport cost (₦)	Food & Material (₦)	Wage (₦)	Other Expenses (₦)	TVC (₦)	Total Revenue (₦)	Tools (₦)	GM (₦)	NM (₦)	Depreciation (₦)
Agemowo	48	270	2	0	4800	1200	0	0	6000	12960	500	6960	6710	250
Awi-Akamkpa	145	230	2	1520	425	10620	660	2020	13725	33350	420	19625	17895	210
Calabar	1080	315	73	17000	5010	27000	168000	26320	226330	340200	290	113870	96725	145
Edion	180	50	5	0	0	300	0	0	300	9000	250	8700	8575	125
Efumwegbe	2800	280	117	4430	91600	22020	124800	1270	239690	784000	400	544310	539880	200
Ikot Iwang	960	550	20	10000	72000	76800	288000	24000	460800	528000	380	67200	57010	190
Ikot Omin	252	500	7	10000	18000	25200	18000	7200	68400	126000	300	57600	47450	150
Iwuru	332	140	8	7580	34330	36840	7070	1680	79920	46480	304	(33440)	(41172)	152
Kaiama	610	110	4	6715	11260	16550	0	3340	31150	67100	560	35950	28955	280
Maryland, Lagos	288	375	12	1500	18000	9875	13200	1000	42075	108000	350	65925	64250	175
Mbiama	400	80	14	2500	4800	7000	200	800	12800	32000	480	19200	16460	240
Zetako	72	350	2	0	0	1500	0	0	1500	25200	500	23700	23450	250

Processors: The distribution of processors by location, the main items of production and unit prices of products are provided in Tables 23 and 24. The costs-returns and production practices and limitations are presented in Tables 25 to 29. The processors include men, women and children who operate workshops, which are either rural or urban-based. Sometimes, the urban-based processors also operate like middlemen by sourcing, buying and transporting raw rattan from remote collecting centres to the cities for use in their cane processing workshops, as well as for sales to other urban-based processors who normally await supplies in the cities (Figure 4). The latter market chain (i.e. sales to others) occurs where individuals' consumption need is less than the available cane supply. Occasionally too, and sometimes based on customer specification, rattan-like lianas (in chocolate and cream colours) are also used to weave, and to make patterns on ornamental trays and flower vases, among other products.

Table 23: Distribution of processors by major processing communities and main items of production, 1999.

Level of Citation in products' combination by community											
	Uyo	Awi- Akamkpa	Benin	Calabar	Efunwegbe	Ekim Itam	Gboko	Ikot Omin	Iwuru	Maryland, Lagos	Oyigbo
Baby cot			4			3				14	19
Basket (ordinary)	2		6		4	5	2		2	27	13
Chair Settee			6		3					22	14
Flower Vase										18	
Hamper Basket										15	
Magazine Rack								2	2		
Wedding (Queen) chair										7	7
Shelf	3		7	3		5	2				13
Single chair	2	6	6	3		6	2	2	3		12
Stool	3	4							3		
Table	2	5									
Wardrobe/ cabinet			4								
No of Respondents	3	7	8	4	5	7	2	2	3	36	23

Table 24: Analysis of the unit prices of major cane products by location/communities in Southern Nigeria, 1999.

Product	Awi-Akamkpa	Benin	Calabar	Efunwegbe	Ekim Itam	Gboko	Ikot Omin	Iwuru	Maryland, Lagos	Oyigbo	Uyo	All Locations
Baby cot	625.00	2560.00	1500.00	1500.00	1600.00	1500.00			2460.00	1830.00	1000.00	1970.00
Basket (ordinary)	175.00	205.00	215.00	120.00	260.00	240.00	250.00	90.00	260.00	220.00	175.00	225.00
Chair settee		6500.00	4375.00	5170.00			4500.00		16910.00	8000.00	4000.00	11515.00
Flower vase	125.00	75.00		50.00	135.00		130.00		110.00	90.00		100.00
Hamper Basket		400.00		300.00	190.00				430.00	620.00		410.00
Magazine Rack	190.00	175.00			120.00		150.00	150.00	370.00	180.00		215.00
Wedding (Queen) chair		3000.00	3000.00						5200.00	1815.00		3450.00
Shelf	225.00	540.00	310.00	350.00	750.00	265.00		550.00	1795.00	625.00	385.00	710.00
Single chair	240.00	885.00	390.00		1205.00	425.00	1825.00	960.00	2065.00	2095.00	425.00	1200.00
Stool	90.00		100.00		200.00	100.00		300.00	325.00	425.00	135.00	180.00
Table	140.00		300.00		400.00	200.00		1075.00	1000.00	440.00	300.00	440.00
Wardrobe/ cabinet		3750.00				3000.00			8500.00	1075.00		3030.00
No of Respondents	7	8	4	5	7	2	2	3	36	23	3	100



While men are engaged mainly in the production of big and complex furniture pieces, women, and sometimes the children, are actively involved in the production of light and small cane products such as baskets, flower vases, wig-holders, lamp-shade and so on. In addition, children and youths do contractual / apprenticeship jobs such as scraping, splitting, weaving, among other crafts activities performed. Mende (Maryland) and Oyigbo cane crafts markets in Lagos and River States, respectively, are two notable concentration points for cane processors in Southern Nigeria. Of the two crafts centres however, Maryland (Lagos) is the larger. Moreover, the trade there is more organised and there is a notable potential and sophistication among the inmates.

The Urhobos and the Ibibios of Delta and Akwa Ibom States, respectively, are the two main tribes involved in commercial cane processing in Southern Nigeria. No product specialisation is noticeable among the operators. Production activities and intensities however vary greatly with the seasons. Cane crafts are usually in high demand during the festive period (i.e. during the months in the last quarter of any outgoing year, up till January in the following year).



Table 25: Analysis of the costs-returns structure and gross margins for cane crafts processors by region of production, 1999.

Region of Production	Buying Price of willow			Buying Price of Cane			Royalty, Commi-ssion, Taxes and Levies	Production Cost (N)		Depreciation	Marketing (Transportation cost) (N)	Total Revenue (N)	Gross Margin (N)	GM as % of TR	Profit margin (N)	P.M as % of TR
	Unit price (N)	Qty (bundles)	Pieces per bundle	Unit Price (N)	Qty (bundles)	Pieces per bundle		Labour	Other materials							
Rural	365	121	40	410	157	60	645	11589	127598	2269	6539	406270	260545	64.13	255886.	62.98
Urban	410	169	35	395	196	50	1765	7368.0	148020	2240	5770	856286	695128	81.18	686759	80.20

Table 26: Analysis of the costs-returns structure and gross margins for cane crafts processors by community, 1999.

Community	Buying Price (Cane)			Buying Price (Willow)			Royalty	Production Cost		Depre- ciation (50%) (N)	Marketing (Transp - ortation cost (N)	Total Revenue (N)	Gross Margin (N)	GM (% of TR)	Net Margin (N)	NM (% of TR)
	Unit Price (N)	Qty (bundles)	No.of pieces per Bundle	Unit Price (N)	Qty (bundles)	No. of Pieces per bundle.		Labour (N)	Other Mate - Rials (N)							
Aba	350	156	70	300	104	40	3200	3600	112800	3950	14400	639850	509050	79.56	501900	78.44
Agemowo	350	148		180	190				89000	1825	19200	124600	16400	13.16	14575	11.70
Awi-Akamkpa Benin	430	80	90	320	81	50	1090	6330	86420	1850	4115	130930	34065	26.02	31125	23.77
Calabar	180	185	15	340	190	20	1070	7440	104515	2550	9980	792680	670750	84.62	667130	84.16
Efumwegbe	500	112	100	490	94	70	1325	11360	122460	2605	14100	453190	305270	67.36	301340	66.49
Ekim Itam	180	302	12	230	126	15	625	7400	100392	1266	2880	543956	433284	79.65	431393	79.31
Gbanwe	610	140		570	139		190	22971	185829	4341	11057	860416	640558	74.45	636027	73.92
Gboko	200	12	65				360		2400	230	5200	28500	20900	73.33	20310	71.26
Ikot Omin	530	126	70	460	162	50	1850	15000	142200	1080	7800	646800	481800	74.49	478870	74.04
Ikot Ekpene	800	240	100	600	468	45		12000	351000	2175	4800	237480	28700	12.09	26525	11.17
Iwuru	500	60		650	84		2800	12500	95520	2600	2600	557500	446880	80.16	441480	79.19
Maryland, Lagos	270	214	30	370	136	35	2300	15733	146387	1998	5333	244383	76930	31.48	72632	29.72
Oyigbo	240	291	18	310	193	14	1670	7911	158923	1850	4139	649094	478120	73.66	474600	73.12
Uyo	675	92	80	545	146	50	2150	5995	155528	2835	4781	1377298	1210994	87.93	1206009	87.56
Zetako	485	120	50	650	152	35	1270	2787	162700	1382	8350	505283	331447	65.60	328795	65.07
	80	48	20						7680	310	3600	78000	66720	85.54	66410	85.14



Table 27: Analysis of the costs-returns structure and gross margins for cane crafts processors by product type, 1999.

Category of products	Buying Price of willow			Buying Price of Cane			Royalty, Commission, Taxes, Levies	Production Cost (N)		Depreciation		Market-ing (Transportation cost N)	Total Revenue (N)	Gross Margin (N)	GM as % of TR	Profit margin (N)	P.M as % of TR
	Unit price (N)	Qty (bundles)	Pieces per bundle	Unit Price (N)	Qty (bundles)	Pieces per bundle		Labour	Other materials								
Handicrafts	140.00	36	12	250.00	202	24	278.00	2308.00	81416.00	321.00	5766.00	268499.00	179009.00	66.67	176526.00	65.75	
Handicrafts and furniture	420.00	192	35	390.00	208	45	1409.00	9217.00	163261.00	2601.50	5997.00	802478.00	624003.00	77.76	616485.50	76.82	
Furniture	500	126	40	510	119	80	2423.00	9555.00	118918.00	2355.00	6231.00	878371.00	742667.00	84.66	733193.00	83.47	

Table 28: Analysis of the costs-returns structure and gross margins for cane crafts operators by number of cane crafts produced, 1999.

Number of Products	Buying Price of willow			Buying Price of Cane			Royalty, Commission, Taxes, Levies	Production Cost (N)		Depreciation	Marketing (Transportation cost N)	Total Revenue (N)	Gross Margin (N)	GM as a % of TR (N)	Profit margin (N)	P.M as % of TR
	Unit price (N)	Qty (bundles)	Pieces per bundle	Unit Price (N)	Qty (bundles)	Pieces per bundle		Labour	Other materials							
One				165.00	43	40	590.00	1800.00	29400.00	398.00	2200.00	69375.00	35975.00	51.86	34687.50	50.00
Two	220.00	57	45	290.00	218	40	70.00	3429.00	79364.00	614.00	2314.00	382833.00	300726.00	78.55	298034.00	77.85
Three	430.00	141	30	400.00	171	50	1551.00	11253.00	127266.00	1898.00	6726.00	946834.00	801589.00	84.66	793601.00	83.82
Four	380.00	133	30	380.00	196	50	1684.00	6921.00	128043.00	2027.00	7040.00	633342.00	491338.00	77.58	484687.00	76.53
Five	455.00	186	45	435.00	178	55	1775.00	9038.00	156886.00	2169.00	5597.00	632794.00	461273.00	72.89	453520.00	71.67
Six	420.00	175	30	405.00	205	40	1405.00	9607.00	159262.00	2164.00	7293.00	1062300.00	886137.00	83.42	879502.00	82.79
Seven	535.00	200	45	600.00	181	75	2250.00	8700.00	237370.00	3045.00	0.00	459583.00	213513.00	46.46	200943.00	43.72
Eight	435.00	215	35	440.00	181	60	1933.00	5900.00	168314.00	3641.00	7693.00	881406.00	699498.00	79.36	688724.00	78.14
Nine	600.00	150		700.00	80		0.00	33000.00	213400.00	19785.00	15000.00	2654200.00	2392800.00	90.15	2353115.00	88.66
Ten	350.00	144		200.00	240		0.00	0.00	201500.00	3450.00	2400.00	565750.00	361850.00	63.96	354800.00	62.71
Eleven	350.00	480		200.00	720		0.00	20000.00	339040.00	1790.00	0.00	938570.00	579530.00	61.75	574140.00	61.17

Table 29: Distribution of processors by employment type, labour contribution, pricing mode and problems.

	No.	%
1. Nature of Employment:		
• Full-Time	96	91.43
• Part-Time	8	7.62
• No Response	1	0.95
2. Proprietor's Labour Contribution:		
• Hours per day	9-12	
• Days per week	3-6	
• Weeks per month	3-4	
• Months per year	10-12	
3. Production Bottlenecks:		
• Lack of technology	50	80.65
• Lack of materials	53	100.00
• Get injured	37	100.00
• High costs	16	100.00
• Lack of sales	43	100.00
• Lack of finance	62	100.00
4. Mode of Pricing:		
• By proprietor	91	86.67
• By union	7	6.67
• By haggling	1	0.95
• All of the above	4	3.81
• No response	2	1.90

Traders: On the input side, trading (or middlemanship) concentrating solely in raw rattan was very rare in Southern Nigeria. Most traders interviewed during the survey were either collectors working additionally as traders by engaging in forward integration, or as processors engaged in backward integration in addition to cane transformation in the urban centres. The latter usually make occasional trips to major collecting communities to seek supplies for use in their own workshops as well as to make additional income by selling excess canes to others in the cane crafts business. Men however dominate the trade in raw rattan in virtually all locations covered in the survey. It was only in Kaiama (Bayelsa State) that women were found collecting raw rattan. This however happened on a very low scale (i.e. at subsistence level). Table 30 presents the different prices (i.e. purchased and sales) and gross margins by cane type by communities surveyed.

Table 30: Traders' sales and returns: raw rattan.

Location/Commodity	No of Traders	Volume Traded	Unit Price	Total Sales	Unit Cost	Total (Marketing) Cost	Gross Margin	GM as a % of total sales
<u>Cane :</u>								
Benin	1	1500	200.00	300000.00	100.00	150000.00	150000.00	50.00
Port Harcourt	1	240	800.00	192000.00	200.00	48000.00	144000.00	75.00
<u>Willow:</u>								
Nnetim	1	6	375.00	2250.00	80.00	480.00	1770.00	78.67
Benin	1	1400	350.00	490000.00	200.00	280000.00	210000.00	42.86
Port Harcourt	1	648	650.00	421200.00	200.00	129600.00	291600.00	69.23

Men, women and children are involved in the sale of finished products. They integrate forward by engaging in workshop frontage display and sales of finished cane products. Also, children and youths carry out street hawking of light and small handicrafts in towns and cities. This is especially so where there are long traffic queues, and in traffic hold-ups. In addition to selling products in shops, supermarkets and corner stores, business cards, advertisement flyers, and the

establishment of showrooms is also common in the towns and cities surveyed. Instances were found where traders added value to cane products by fixing foam cushions and fabrics to cane products to improve their aesthetic value and the final sale price. Table 31 provides information on the final (cane) products' prices by location and gross margin in Southern Nigeria.

Table 31: Traders' sales and returns: cane products

Location/Commodity	No of Traders	Volume Traded	Unit Price	Total Sales	Unit Cost	Total (Marketing) Cost	Gross Margin	GM as a % of Total Sales
Baskets:								
Ijebu-Ode	2	240	127.50	30600.00	57.50	13800.00	16800.00	54.90
Ikot Ekpene	2	625	300.00	187500.00	37.50	23437.50	164062.50	87.50
Oyigbo	1	360	250.00	90000.00	50.00	18000.00	72000.00	80.00
Port Harcourt	1	180	200.00	36000.00	50.00	9000.00	27000.00	75.00
Single Chair:								
Ikot Ekpene	5	163	555.00	90465.00	190.00	30970.00	59495.00	65.77
Oyigbo	1	192	700.00	134400.00	200.00	38400.00	96000.00	71.43
Chair Settee:								
Eket	1	4	5000.00	20000.00	1200.00	4800.00	15200.00	76.00
Port Harcourt	1	12	30000.00	360000.00	10000.00	120000.00	240000.00	66.67
Flower Vase:								
Eket	1	32	200.00	6400.00	90.00	2880.00	3520.00	55.00
Ijebu-Ode	1	48	80.00	3840.00	50.00	2400.00	1440.00	37.50
Ikot Ekpene	1	120	150.00	18000.00	50.00	6000.00	12000.00	66.67
Oyigbo	1	576	100.00	57600.00	40.00	23040.00	34560.00	60.00
Port Harcourt	1	144	100.00	14400.00	30.00	4320.00	10080.00	70.00
Mirror Frame:								
Ijebu-Ode	1	80	400.00	32000.00	100.00	8000.00	24000.00	75.00
Ikot Ekpene	2	78	600.00	46800.00	150.00	11700.00	35100.00	75.00
Oyigbo	1	144	450.00	64800.00	50.00	7200.00	57600.00	88.89
Shelf:								
Ijebu-Ode	2	72	387.50	27900.00	137.50	9900.00	18000.00	64.52
Ikot Ekpene	3	287	383.50	110064.50	67.00	19229.00	90835.50	82.53
Port Harcourt	1	96	500.00	48000.00	150.00	14400.00	33600.00	70.00

Final consumers: Raw rattans and the cane products manufactured from them serve many purposes in the communities covered in the survey. For instance, cane ropes and the small-diameter canes are widely used in house / shop / stall construction. These cane materials are usually used together (or in some combinations) with other local and modern building materials such as raffia fronds and petioles, mature bamboo culms, mud, corrugated iron sheets and nails. More importantly, most cane materials are processed into interior decoration items such as cane chairs, stools, shelves and cupboards, which are patronised by all from the *nouveau riche* to the middle and low-income earners. Cane products such as baskets, traps and smoking platforms, are in demand and are being used widely in artisanal fishing in South-East Nigeria. Table 32 presents the distribution of community members by their assessment and acceptability of cane products in the study area.

Table 32: Community members’ patronage, assessment and acceptability of final cane products.

	No.	Percentage
1. Procurement of Product:		
• Within the community	45	84.91
• Outside the community	8	15.09
• No response	0	0.00
2. Quality Valued in Product:		
• Aesthetics	8	15.09
• Durability	19	35.85
• Portability	7	13.21
• Comfort ability	32	60.38
• Low price		
3. Product Assessment:		
• Very good	27	50.94
• Good	20	37.74
• Average	6	11.32
4. Worth Purchase Price?		
• Yes	53	100.00
• No	0	0.00
• No response	0	0.00
5. Buy if Richer?		
• Yes	45	84.91
• No	8	15.09
• No response	0	0.00

Key Features of the Sector

The Production-to-Consumption Environment

Harvesting of rattan stock by natives and contract labourers is usually need-driven and with simple tools. It involves wastage, indiscriminate and unsustainable collection. In the urban centres, associations of professional collectors are formed so as to enjoy a monopoly on sales. At the village level, collection and sales are more competitive. Sales are usually made to individual processors, and also to rattan middlemen, on contractual harvesting bases. End-users downstream including processors and final consumers have scant knowledge of the stock level and resource situation. Consequently, decisions on sourcing and concentration are usually done by convenience and price. Figures 3 and 4 illustrate the rattan PCS and the basic flow of rattan resource in Southern Nigeria, while Tables 10 to 32 provide more information on the features of the rattan production-to-consumption system in the study area.

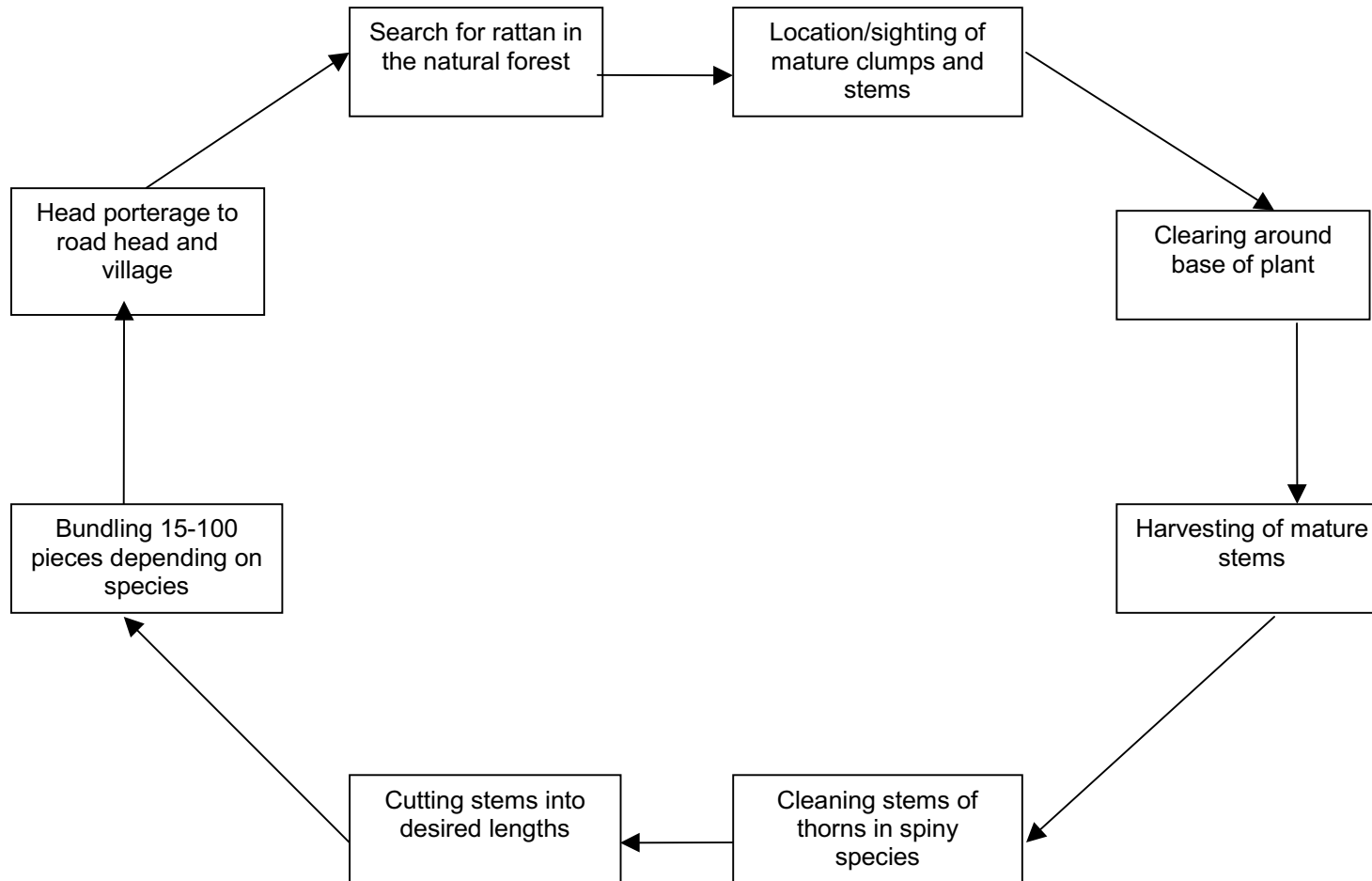


Figure 4a: Rattan harvesting process in Southern Nigeria

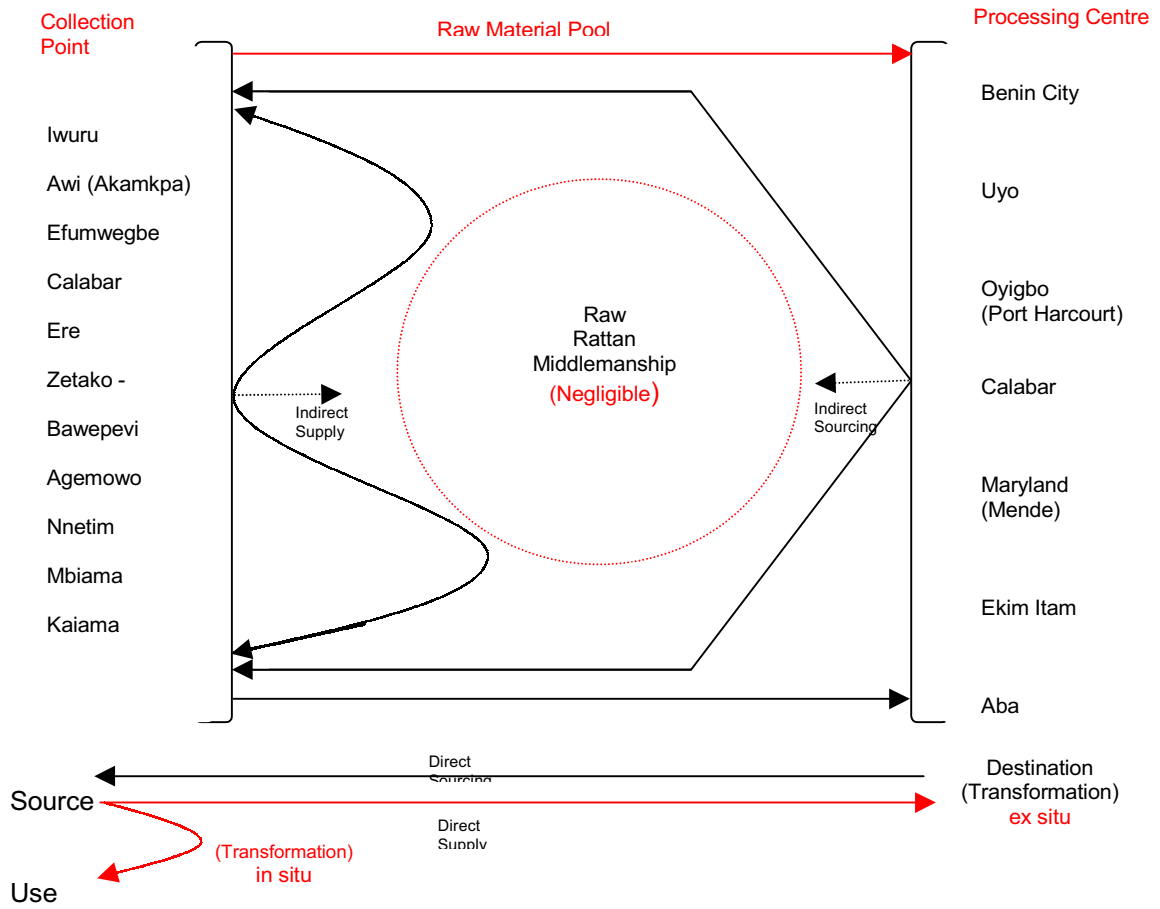


Figure 4b: Flow of raw rattan harvests in Southern Nigeria

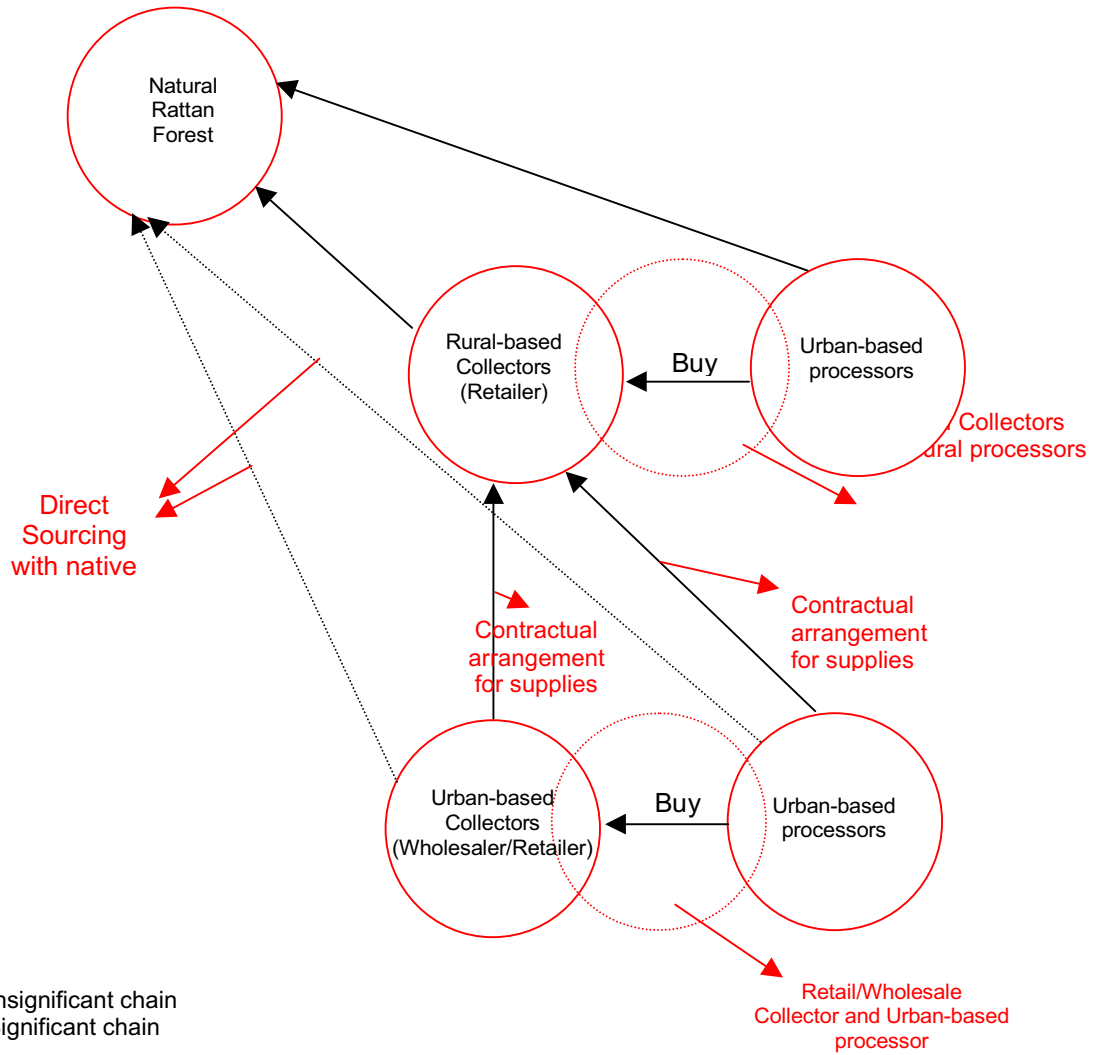


Figure 4c: Raw rattan sourcing and informal marketing arrangements in Southern Nigeria.

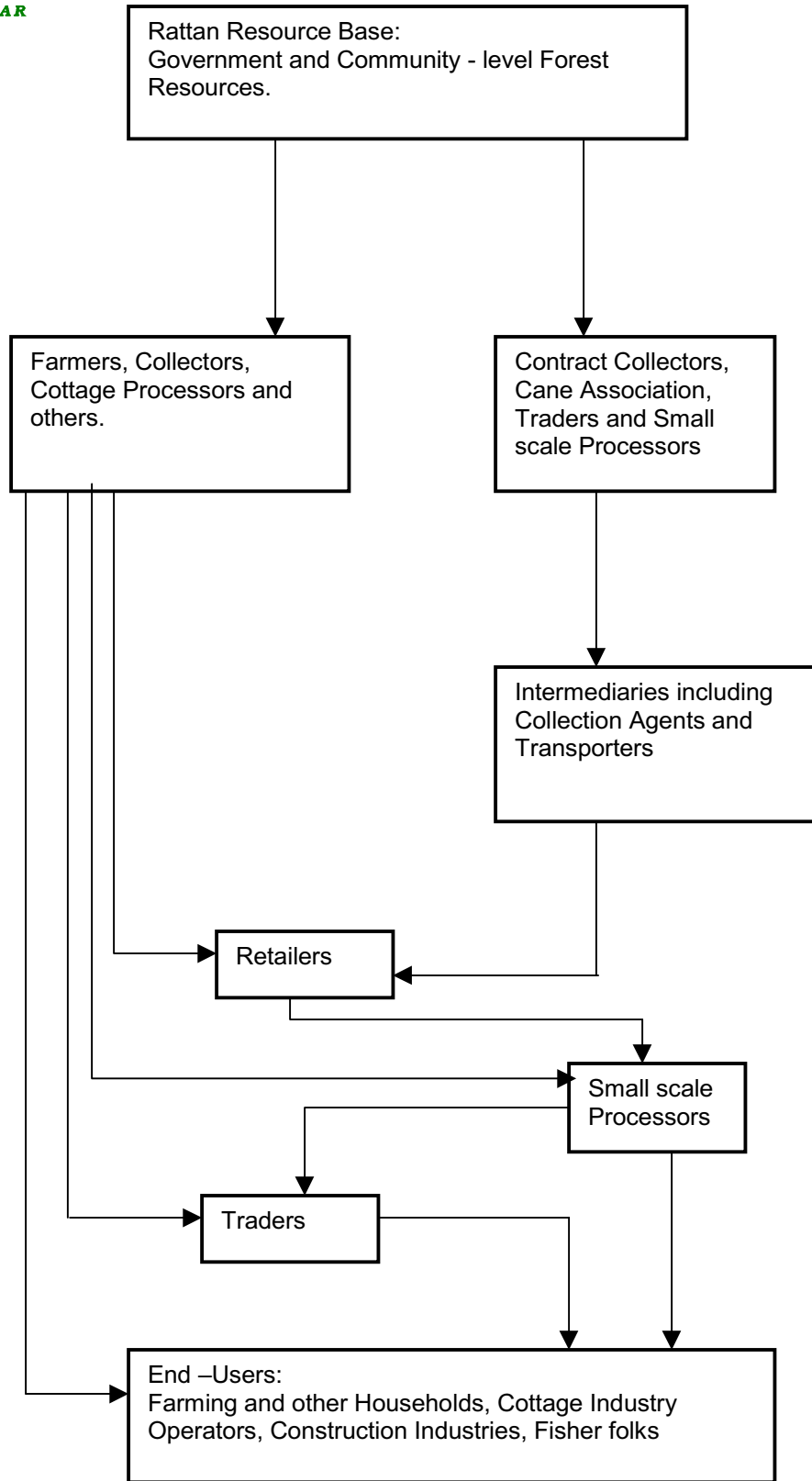


Figure 4d: Flow Pattern of Raw Rattan and Rattan Products in Southern Nigeria.



In most cases collectors trek more than 10km into the forest to reach collection sites (Table 16) and spend up to several days per trip cutting enough head-load. One load returns only ₦240.00 per bundle for willow and between ₦300.00 per bundle for cane, on average, depending on the location of sales. The final price per bundle however varies with the location of the sale.

There are adult and juvenile collectors of both sexes. Moreover, rattan collection is usually not a full time economic activity for forest-fringe residents. For them this economic activity may be seasonal or all-year-round. It may be sporadic and needs-driven. As such, community members who engage in rattan collection also participate in diverse economic activities that are equally sensitive to human and seasonal cycles.

Craft workers produce for both regular and seasonal customers. Young processors are usually indentured to the experienced hands so as to acquire the essential crafts skills and dexterity. Nearly all crafts workers are male. Women and girls are mainly involved in production of handicrafts and small furniture pieces. Male processors engage predominantly in the production of simple-to-complex handicrafts and furniture pieces. While the adult males construct frames and do complex weaving, the male children run errands and assist in simple weaving and polishing of crafts and furniture pieces.

Rattan Marketing and Trade

Natural rattan grooves abound in forest reserves and community forests, in the mangrove and rain forest belts in the Niger Delta Area of South-South and South-East Nigeria. Collections are made in the wild from these areas and sold to prospective buyers there and may be transported to processing centers in Oyigbo and Lagos, amongst others. Exportation of raw rattan was not found among the stakeholders covered during the survey. However, rattan consignments are taken to major processing centers all-year-round, although large consignments are made during the closing months of the year, especially during the Christmas and New Year celebrations (i.e. September to January).

Total annual trade in rattan was about 19,800 bundles of cane and willow (i.e. about 1650 bundles per month). Subsistence collectors and middlemen usually have sizeable returns from the trade (Table 30). Trade in rattan is not subject to custom duties and regulation. However, illegal fees are frequently collected along the major trade routes. The number of stems per bundle varies both by species and location of sales. Similarly, rattan prices are usually higher between collecting communities, and producing centres in far away locations.

Awi-Akamkpa and Iwuru are two prominent trading centres for raw rattan, while Oyigbo and Maryland, Lagos are two major trading centres for rattan products. These communities accommodate non-periodic and essentially non-formalised trade in rattan and cane products. Willow, cane and diverse processed products are offered for sale in these locations. High demands for rattan products are usually



experienced around the festivity periods. This is especially so for gift hamper baskets which go for as much as ₦130.00 per basket in Ijebu-Ode and ₦300.00 in Ikot Ekpene. Also at Christmas, furniture fetches high prices: ₦ 5000.00 per settee at Eket and ₦ 30000.00 at Port Harcourt. Supermarket operators, big businesses and multinationals usually contract hamper baskets for staff at Christmas time. Processors also sell directly to final consumers at the retail level, and through traders on contractual production terms. Waste and chaff from rattan processing are frequently used as fuel. Discarded cane and willow stems are also used in producing walking sticks, which sell for ₦70.00 to ₦100.00 per piece.

Roadside and house-frontage sales and producing for occasional sales in the market are common at the village level. Showroom sales and contract production are more common in the cities. A wide range of finished products including furniture and handicrafts of diverse shapes and sizes and aesthetic qualities are sold at village and city levels. The scale of transactions (i.e. production and sales) is small at village and city levels, although sales usually assume peak levels during festive periods at both levels. Informal, house-to-house transactions are also quite common at the village level. This informal exchange could be quite substantial given the large number and sizeable concentration of village production units in Southern Nigeria.

Indigenous Systems of Stock Management

In most village communities, there is the dearth of formal harvesting rules and regulations. Indiscriminate and unsustainable harvesting regimes are usually the norm both in community and government forests. Regulation of collection activities is usually restricted to the payment of commissions by non-natives. Among collectors, selective harvesting for mature stems is usually done as normal practice. However, no re-supplying is done.

Gaps in Community Knowledge and Skills

Collectors and natives have a wealth of knowledge and skills related to prospecting for mature rattan stems. However, there are still some gaps in knowledge, skills and practices that need to be closed for rattan to be harvested adequately in order to meet market demand. The salient requirement for closing these gaps is to provide collectors and forest-fringe residents with training on sound harvesting practices and safe collection modes so as to prevent injury to harvesters; on preservation and processing techniques, and on grading and standardisation approaches.



Community Management of the Rattan Resource

Property and Extraction Rights

There are community and government forest plantations and reserves in the areas covered in the survey. These are under open and restricted access regimes. Under the law, trespass and collection of forest resources from government reserves is prohibited, although forest-fringe communities usually flout such restrictions. Licences are issued periodically in some reserves, (i.e. on a fee-payment basis) by forestry departments to collectors who wish to prospect for forest resources in reserved areas. Under this arrangement, however, forest fringe communities tend to enjoy relatively free access into forests on communal lands and nearby government forests. Nonetheless under both regimes unofficial levies and commissions are paid to forest officials and other government agents. There are usually forest posts and checkpoints along major collection routes / transportation paths as well as at some strategic junctions. The forest posts facilitate the enforcement of the collection of forest permits and the payment of the required levies / commissions.

Local authorities decide upon and establish rules for collection rules and the commissions to be paid by non-native collectors. Permission to collect from forests on community lands is thus normally secured from village / community heads and councils of elders in the host communities. Also, sanctions are usually meted out to non-natives who engage in illegal collections from forests on community lands.

Legislation and Stock Management

Cross River State has a sizeable stock of rattan in Southern Nigeria. These grow naturally in forests on community lands as well as on government forest reserves and in National Parks. The Ibibios of the neighbouring Akwa Ibom State however dominate commercial rattan trade in Southeast Nigeria.

The state monitors and controls access and commercial extraction in forest reserves. The villages and forest communities that hitherto controlled the land converted into reserves still enjoy rights of access and in particular, the right to collect certain forest products and to receive some royalties, especially when the extraction of forest products is done on a commercial basis within the reserves. The collection of any forest produce including rattan within the park area is, however, prohibited.

The village council of elders adjudicates and exercises control over community lands. Permits from forest departments are thus expected to be sought by forest produce collectors before doing any collection on a commercial scale from the forest. Under the arrangement, financial proceeds from the issuance of permits are usually shared equally between government and the community controlling the land. Also, sometimes the natives are paid to guide non-native produce collectors and cane cutting parties through forests on communal lands and in government reserves.



Collection arrangements and stock management are essentially non-formalised in the other collection sites such as Edo, Delta, Bayelsa, River, and Ogun States. Here too, collection is done indiscriminately and haphazardly as in Cross-River State. However, there is a restriction on collection of produce from the forests except that collected with official permits with the necessary extraction fees and unofficial levies obtained or paid beforehand.

The only semblance of rattan stock management relates to the selective harvesting of mature stems from the clumps. Consequently, over the years, human pressure has affected stock levels, the distances covered in the forests and incomes realised from collection trips. This is particularly noticeable in the case of Edo State, which hitherto hosted the bulk of commercial rattan harvest and trade in Southern Nigeria.

Prospects for Natural Stock Management and Plantation Cultivation of Rattan

Besides government forests and forest reserves which are maintained essentially in the natural state, no formal institutional arrangements exist for the management and protection of rattan forests on community lands. What exists presently could best be described as an *ad hoc* arrangement between relevant government departments and village authorities / councils of elders.

Presently, no cultivation or replanting is being done to reverse the current trend in the depletion of natural rattan stock in host communities or in government forest reserves. The belief in the forest communities surveyed is that the crop is available in large quantities and that there is no immediate necessity or even any basis to begin rattan plantations or rattan-tree intercropped plantations.

Most of the communities, and hence the resident collectors, are not even aware of the possibilities of raising rattan in the nursery. Pictures of field trials and established nursery of rattan taken in Cameroon (during the Project Development Visit) however proved very handy in raising awareness and confirming the possibilities and success of rattan cultivation *in situ* and *ex situ*. The knowledge of the cultivation possibility notwithstanding, collectors still find it difficult to understand or even appreciate the need to immediately commence the cultivation of rattan on community lands. In their view, the existing stock is quite expansive - enough to satisfy the growing demand - without any recourse to plantations.

Besides the lack of awareness about rattan cultivation, the land tenure system and land scarcity in most communities in Southern Nigeria are other likely bottlenecks to encouraging or facilitating private forestry of rattan. Nonetheless, several locations in Southern Nigeria seem to be suitable for rattan cultivation. Such areas include the logged-over forest patches, and the abandoned and unproductive rubber plantations in Cross-River, Edo and Ogun States, Nigeria.



4. Opportunities, Constraints and Development Options

Opportunities and Constraints

The opportunities and constraints in different occupations in the study area are presented in Table 33. The rattan sub-sector activities, including collection from the wild and small-scale / cottage processing offer some comparative advantage over other remunerative endeavours. This follows since wide scope is allowed for profitable engagement either alone or in diverse combinations with other activities especially during the off-season and leisure periods.

The following are cogent constraints, and hence the important areas for intervention, identified by stakeholders during the survey:

- (i) Non-conviction about the need for and prospects of commercial cultivation of rattan either in pure stands or in a mixture with other crops.
- (ii) Shortage of rattan for cane processing during the rainy season due to poor accessibility into the forests and collection sites. Low supplies most times result in high production cost, idleness among processors, loss of patronage and customers' goodwill.
- (iii) Simple and manually operated tools are used in villages and small towns, at or near the collecting centres, and in the urban processing centres. The collectors only use cutlasses and their bare hands when collecting from the forest. Collectors and processors expressed their wish for gloves and better tools, and complained of a dearth of investment capital.
- (iv) Presently, the market for products appears quite limited. The sale of cane products is low and seasonal. Operators confirmed that sizeable demand is only manifest during Christmas time. The tying down of investment capital is a very common experience among operators. Presently, there is no provision or arrangement for tapping cane crafts markets overseas.
- (v) Poor aesthetic values in cane products seem to limit the competitive power of these products vis-à-vis wood and steel-based, local and imported products, which can serve similar purposes. There is a dearth of institutional support for operators and the industry. This is in terms of improvement in the policy environment, technical know-how, market infrastructure and information, among others.



Table 33: Economic options, opportunities and constraints for residents in Southern Nigeria.

Opportunities	Constraints
<p>A. Extraction of rattan and other NTFPs: Good opportunities abound. Local market for products is broad. Potentials exist for overseas trade (especially within ECOWAS sub-region). There are several collectors, intermediaries, and a few traders who serve urban markets.</p>	<p>Government and community rules guiding collection in forest reserves and on community lands. Unofficial levies usually collected along trade routes.</p>
<p>B. Farming, farm ownership: Main occupation of residents. Good market opportunities in Nigeria and overseas.</p>	<p>Limitations in access to land, excessive fragmentation of family land and non-contiguous holdings, poor road network and transport infrastructure, scarcity of labour at peak periods. Inadequate technical and financial services. Limitation to forestland encroachment and female ownership of agricultural land in most communities.</p>
<p>C. Cottage and small-scale rural/urban informal enterprises: Low capital requirement encourage rural/urban informal enterprises. Small/medium enterprises loan scheme under packaging. Expanding markets for forest-based products.</p>	<p>Lack of technical and adequate financial assistance. Primitive tools still in use. Restricted market network. Poor supplies and product storage infrastructure.</p>
<p>D. Employment in the local labour market: Employment increasing in the informal sector. Unemployment is growing in the formal labour market. Industries are folding up. Public parastatals are downsizing. Job destruction rising in the processing and service sector. Private businesses are folding up due to inclement business environment. Major developmental activities focussed on self-employment schemes and grassroots development.</p>	<p>Rising costs of inputs in the agricultural sector. Inflation in prices of industrial raw materials for cane processing. Blue collar jobs involve long hours, drudgery, low remuneration, and are hazardous and risky.</p>
<p>E. Government/public services sector: Many offices and agencies abound in Southern Nigeria.</p>	<p>Low formal education. Requires intensive training and personal connections.</p>

Development Options

Development options thus can be developed in the following key areas: (i) raw rattan supply; (ii) cottage / small-scale rattan processing enterprise; and (iii) integrated rattan supply – cottage / small-scale cane manufacturing.

Raw Rattan Supply

This is an attractive venture since the capital and skill requirements are low. The forest-fringe residents and contract collectors will continue to practice this option since the net returns are fairly high, and because of the prospect of enjoying higher economy of scale. Distant markets especially in metropolises can be tapped to improve market returns. Government can assist by reducing the incidences of



illegal levies, by providing market infrastructure and information, and by providing training on processing and grading of raw rattan for optimum sales and income.

Small-scale Manufacturing

This venture is attractive for traditional crafts workers and working households as well as for the landless, widowed, orphaned, leprosy and infirm, who can use the traditional and indentured skills, and abundant labour at their disposal to begin small and cottage enterprises in their living abodes. Units that manufacture handicrafts, furniture, and handicrafts and furniture pieces are examples of such cottage / small-scale manufacturing units. Such production units can be run profitably, and on individual, family and cooperative basis. This option is quite unique in its modest skill requirement, and also in the amount of capital required to procure the needed supplies and to produce marketable products. Government can assist with this option by broadening the market, improving the level of market infrastructure, instituting a focussed informal crafts sector loan scheme, training for skill acquisition and product improvement as well as improving market information and extension activities.

Integrated Rattan Supplies and Cane Manufacturing

Wild rattan collection activities can be integrated with small-scale furniture and / or handicrafts production or with other production activities such as farming, hunting and casual labour in rural and urban centres. Common integrated systems currently operating in the study area are: rattan collection and processing, rattan collection and trading, and rattan collection, processing and trading. During idle / leisure periods and weekends, civil servants, casual labourers, farmers, hunters, and fisher people living in close proximity with rattan forests may also lead or join collection expeditions so as to augment their monthly incomes. The essentials for effective integration and operation of the integrated enterprises are enabling policy and institutional environment, introduction of and training in, improved practices and processing technologies, reliable input supplies and marketing outlets, and encouragement of private initiatives and enterprises.

Policy and Institutional Issues

Attention in this case study has been on furnishing baseline information on the importance of rattan resource and products to the local economy, and in particular to household food security and rural livelihoods in Southern Nigeria. Rattan and products are used extensively in everyday life of the people of



Southern Nigeria to satisfy subsistence and commercial requirements. Specifically, rattan stems are used in house and shop / stall construction, in the production of handicrafts and furniture pieces, and in the manufacturing of fishing baskets and traps, among others. Raw rattan collection and transformation generate sizeable primary and supplementary incomes for collectors as well as for cottage-scale and small-scale processors.



5. Implications of the Study

Major Highlights

- (i) Sustainable livelihoods among rural inhabitants and urban informal sector operators must be given due recognition.
- (ii) Local communities need to be empowered and assisted in the sustainable management and exploitation of their rattan stock. There is a need to provide more training so as to facilitate the internalisation of the bulk of the value addition in the rattan sub-sector, thereby creating more employment as well as broadening the level of money-based transactions at the local level.
- (iii) Stronger linkages must be fostered among local institutions and between forest-fringe communities for adequate compliance enforcement, and also between local institutions on the one hand, and formal organisations and institutions, development workers and researchers, on the other.

Implications of the Findings

Sound and sustainable management and exploitation of rattan stocks has not enjoyed desirable consideration in government circles or among local authorities and institutions. Collectors, though rich in collecting experience, lack silvicultural knowledge and expertise (including knowledge concerning controlled felling, thinning, and trailing the canes into the canopy, which are essential for management under regimes of scarce and dwindling resource) to practice intensive management, and private forestry of rattan. Processors too, although they have basic skills of rattan transformation, require more training in manufacturing a range of more aesthetic products, and adequate infrastructure and market information for improved product storage and distribution, and for better incomes.



6. Consequences and Outcome Analysis

Forestry Master Plan

Despite the fact that Nigeria is a signatory to several resource-focussed Convention Treaties, implementation and operation within the dictates of the Treaties has always been a problem. The myriad of efforts evolved in this direction in the past were mostly fragmented and largely uncoordinated. Such efforts were essentially without clearly defined overall national goals and conservation policy. This unhealthy state persisted until March 1980 when the World Conservation Strategy (that is, a component of the International Development Decade) was launched (Saba, 1992). Consequently, in 1985, a giant stride was made toward natural resource conservation by the formulation of a National Conservation Strategy. The significance of the Strategy is in the recommendations which:

- (i) Proposed a Natural Resource Conservation Council for Nigeria (NARESCON);¹and
- (ii) Called for a Conservation Action Plan for the arrest of the rapid degradation of the nation's natural resources, and such that would enhance a coordinated development of Nigeria's renewable natural resources.

Hitherto, the overtly acknowledged problems of (and hence, the limitations to) natural resource conservation in Nigeria include:

- (i) Poor policy and legal instruments;
- (ii) Weak database;
- (iii) Law enforcement;
- (iv) Institutional problems such as poor coordination between departments and absence of well-integrated management and organisational structure - from federal level to the local level;

¹NARESCON is an apex organisation saddled with coordinating conservation efforts, and providing the national focus on conservation. This body became established in Nigeria by Decree No. 50 of 1989. Other government departments, ministries and public and private agencies for which NARESCON is expected to serve as the clearing house are: The National Conservation of Renewable Resources, (NACCRR), Federal Environmental Protection Agency (FEPA), Tropical Forest Action Plan (TFAP), National Agricultural Land Development Agency (NALDA), Federal Ministry of Science and Technology (FMST), Federal Ministry of Agriculture, Water Resources and Rural Development, State Governments and Ministries, Local Governments, Local Participating Committees, Village Conservation Development Committees, Non-Governmental Organisations, International Agencies, Women Organisations, Directorate of Food, Roads and Rural Infrastructure (DFPRI), Universities and Research Institutions (Anon., 1992).



- (v) Alienation of local people from conservation programmes which manifested in resentment and non-compliance; and
- (vi) Manpower problems to prosecute conservation programmes and campaigns (Anon., 1992).

Subsequently, a set of guidelines was articulated for the purpose of evolving National Policy on Natural Resource Conservation. The Guidelines prepared by NARESCON were focussed on:

- (i) Ensuring sustainable management of ecosystems;
- (ii) Preserving genetic diversity;
- (iii) Involving local communities in conservation implementation;
- (iv) Creating employment and income generating opportunities;
- (v) Coordinating conservation efforts with overall national development planning goals, strategies and objectives;
- (vi) Making provision for effective performance monitoring and evaluation at all levels; and
- (vii) Making provision for establishing effective institutional framework for resource conservation (Anon., 1992).

The following are the salient features of the Conservation Action Plan proposed for Nigeria by NARESCON:

- (i) To inventory each natural resource;
- (ii) To collate existing information on each resource;
- (iii) To strengthen the existing research institutes and establishment of new ones to conduct applied and strategic research;
- (iv) To address specific environmental and natural resource problems such as declining soil productivity and soil erosion;
- (v) To promote conservation-conscious land use activities and practices such as agro forestry, agro-silvi-pastoralism etc;
- (vi) To implement new programme of constitution and maintenance of forest and nature reserves as well as parks and botanical gardens, among others, so as to improve *in situ* conservation of flora and fauna species;
- (vii) To implement a programme of *ex situ* preservation of endangered species and promote research on germplasm collection, seed and pollen storage, tissue culture, etc.
- (viii) To enact legislations and establish activity monitoring and enforcement systems;



- (ix) To involve local governments, local communities and socio-cultural organisations and rural development agencies in conservation-focussed formulations, planning and implementation;
- (x) To promote enlightenment programmes on resource conservation and management;
- (xi) To re-orientate conservation ethics toward production of goods and creation of employment and income-generating activities with due conservation of resources on which the production activities depend (Anon., 1992).

The implementation of the Conservation Action Plan was made the responsibility of all Nigerians from the Presidency down to the Local Governments, and especially Nigerians living in close proximity to the natural resources. To facilitate implementation, recommendations were made that the "Ecological Fund" Projects in Nigeria should be handled by NARESCON, and that the Fund should be increased from one to three percent of the Federal Government (Annual) Revenue.

Forest Conservation Action Plan and NTFPs

Although the Forest Action Plan is not so specific on non timber forest products, it offers promises for the conservation and exploitation of these natural resources as components of forest resources in Nigeria. Some of the primary and supportive programmes and provisions in the Plan include botanical surveys, genetic conservation, plantation cultivation and regulation of collections, checking of uncontrolled bush burning and over-exploitation of resources, employment creation and value-addition through processing.

Development Strategies

Diverse strategies and concerted efforts are required for optimum utilisation and sustainable management and conservation of non timber forest products, and in particular of rattan resources. The following approaches are thus suggested:

- (i) The forestry sector should embark on the establishment and multiplication of improved rattan species;
- (ii) Training programmes should be packaged for forest personnel and forest-fringe residents focussed on efficient management system, and to improve collection practices, and forest community-level processing and utilisation of rattan and its products;
- (iii) Government should provide strong institutional and financial support to rattan-based enterprises and entrepreneurs;



- (iv) The private sector should be encouraged to invest in rattan plantation, and rattan processing and export of rattan products;
- (v) Sound market infrastructure and reliable information systems should be established to solve the problem of lack of awareness of resource availability and prices of raw and processed rattan, among processors and consumers of final cane products;
- (vi) Efforts should be made to facilitate technology transfer from Asian economies so as to improve the local production systems and the existing processing facilities;
- (vii) Extension activities should be focussed on encouraging group formation among collectors and / or processors so as to improve their bargaining power and the chances of exploiting urban and overseas markets;
- (viii) Skill-oriented training courses should be packaged by the forestry department for urban informal sector rattan processors on improved and sustainable rattan production, processing / utilisation and marketing.



7. Recommendations

The following are the main recommendations of this study:

- (ix) Priority should be given to the institution of a national policy to accord overt recognition to the rattan sub-sector, especially in the current drive for employment creation under the National Poverty Eradication Programme.
- (x) Laws governing land access and use should be reviewed so as to encourage private land ownership and private silviculture with rattan alone or intercropped with rubber.
- (xi) Forest-fringe communities should be organised and trained in the harvesting, processing and marketing of rattan on community lands and in forest reserves.
- (xii) Training, credit and simple processing tools should be provided to crafts workers so as to improve product quality.
- (xiii) Rattan processing techniques and the use of simple processing tools should be studied so as to facilitate the transfer of suitable processing technologies.
- (xiv) Development of cane processing villages, and training and processing centres should be adopted as one of the main thrusts of the community forestry plan of the federal and state forestry departments.
- (xv) Wild rattan stocks in the study area need to be sustainably managed and exploited. Long term management and utilisation plan, should thus be evolved by the forestry departments in conjunction with the Ministry of Environment, NGOs and international organisations. This should facilitate the transfer of improved stock and management techniques.
- (xvi) Private sector investment should be encouraged by granting long lease agreement for land use and by introducing feasible technologies such as rattan semi-processing from Asia.



8. An Indicative List of Investment Projects

Based on the salient findings in the study, it is suggested that government should initiate the development of rattan-based micro-enterprise projects in the Southern Nigeria as part of the National Poverty Eradication Programme (NAPEP). Some of the activities that can be designed as investment projects for funding by international financial agencies and institutions such as African Development Bank, International Fund for Agricultural Development and The World Bank are:

- (iv) **Development of Rattan-based Micro-Enterprise:** Small enterprise development is a particularly important poverty alleviation strategy for reaching the rural and urban poor, women and other disadvantaged and marginalized groups in Southern Nigeria. Conventional credit and service-oriented cottage industry promotion activities should be targeted to these groups. Proliferation of small rattan-based enterprises if encouraged, and if appropriate training is provided, can enhance the lot of the multitude of rural and urban poor, and marginalized groups.
- (v) **Establishment of Rattan Plantations:** The commercial prospects for rattan cultivation and multiplication in Southern Nigeria are good. There are huge numbers of processors who use them as raw materials for furniture and / or handicrafts production, house construction, and in the manufacture of fish traps. Four genera and ten species of rattan are available in Southern Nigeria, which need to be conserved and improved. Improvements could be achieved by establishing plantations for provenance trials and for commercial multiplication of large diameter rattans from other countries. Also along similar lines, demonstration plots could be established to educate private entrepreneurs, collectors and forest-fringe residents on the procedures and prospects of silvicultural practices with rattan, and with rattan intercropped with rubber.
- (vi) **Development of Community-Level Resource Centres for Information:** Efforts are needed to raise awareness among community members of the need to conserve and sustainably exploit the wild rattan stock in forest communities. In this regard, a network of grassroots level community institutions can be formed and tasked with the following roles:
 - (a) Sensitisation of the community to the need and potential of bio-diversity conservation and environment protection.
 - (b) Improving the process of participatory learning through awareness generation and gender sensitisation.
 - (c) Establishing information systems to constantly monitor and evaluate the problems, needs, priorities and aspirations of the communities, and to document the changes occurring within them.



- (d) Facilitating inter-community exchange and sharing of knowledge.
- (e) Provision of training to community members with the express purpose of refining production / processing technologies and disseminating production-related information.
- (f) Facilitating different training courses using local media and communication channels.
- (g) Facilitating regular flow of technical information to the community as well as acting as a repository of outside information.
- (h) Assessing the gaps in the knowledge and skills of community members and assisting in exploiting and in incorporating indigenous knowledge and skills into new people-focussed projects and development initiatives.



References

Adedipe, N.O., J.S.Bakshi, O.A.Odegbare and A.Aliyu (eds.), 1996, Evolving the Nigerian agricultural research strategy plan: agro-ecological inputs. The National Agricultural Research Project, Ibadan.

Anon., 1992, National resources conservation action plan. Final report. Vol.1. Abuja: NARESCON (The Presidency).

Caldecott, J.A., 1996, Designing conservation projects. U.K: Cambridge University Press.

Dahunsi, B.I., 2000, The properties and potential application of rattan canes as reinforcement material in concrete. An unpublished Ph.D. thesis. Department of Agricultural Engineering, University of Ibadan.

Federal Office of Statistics (FOS), 1997, Annual abstract of statistics, 1997 edition. Abuja: Federal Office of Statistics.

FOS, 1999, Review of the Nigerian Economy 1998. Abuja: Federal Office of Statistics.

Morakinyo, A.B., 1993, Herbarium notes on species of rattan palms on exhibition at the herbarium of the Department of Botany, University of Ibadan. Unpublished.

Saba, A.R.K., 1992, Preface. In Anon. (ed.), undated, Natural resources conservation action plan...

Shaib, B., A.Aliyu and J.S.Bakshi (eds.), undated, Nigeria: national agricultural research strategy plan, 1996-2010. Department of Agricultural Sciences. Federal Ministry of Agriculture and Natural Resources, Abuja.