Socio Economic Aspects of the Palmyrah Industry and Its Beneficiaries

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Research Study No.94

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FOREWORD

This study was carried out by the Hector Kobbekaduwa Agrarian Research and Training Institute on a request made by the Palmyrah Development Board. It is one of the three interlinked studies. The other two being ; 1) Assessment of Palmyrah Resource Profiles, 2) Financial Profiles for Palmyrah Based Agro-industrial Projects. The study was conducted by Mr. J.K.M.D. Chandrasiri of this Institute.

As implied by the title of the report, the study has attempted to analyze the present situation of the palmyrah industry and its beneficiaries in the study area which covers six districts, i.e. Puttalam, Anuradhapura, Hambantota, Ampara, Batticaloa and Trincomalee.

The study has shown how the palmyrah industry exists as a subsistence as well as a commercial activity, side by side. The cultural aspects interwoven with the industry have also been cited. The other important aspects covered are market situation, problems and constraints the industry faces at present. The study has given several recommendations to reorganize the industry.

The data and information presented in this study would be very useful for formulating policies, programmes and projects for developing the palmyrah industry, either in the project areas and/or generally on the whole country. Thus it is my fervent hope that policy makers, planners and development workers would utilize this information in future when they are preparing regional, sectoral or any other development plans.

Dr. S.G. Samarasinghe
DIRECTOR/HARTI

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J.K.M.D. Chandrasiri

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CHAPTER ONE

Introduction

1.1 Palmyrah Palm

The palmyrah palm is a common tree in the Jaffna peninsula. It is also found in other dry zone districts such as Mannar, Puttalam, Anuradhapura, Trincomalee, Batticaloa, Ampara and Hambantota. It is estimated that in Sri Lanka there are almost 11 million palmyrah palms (Palmyrah Development Board, 1989).

The palmyrah palm is considered a valuable tree for various reasons. First, it plays a role against coastal erosion due to strong wind and waves. Second, it provides raw material that can be used for a number of economically important products. Every part of this tree - shoots, sap, leaves, stems and bark - can be used for some purpose or the other: *kottakelengu* from shoots; toddy, treacle and jaggery from sap; baskets and mats from leaves and fibre from stems.

Although it is stated that there are over 800 uses of the palmyrah palm, it is still used for limited purposes. According to some estimates, at present not more than 2 percent of the available palmyrah resources are utilized. So it is correct to say that palmyrah is a valuable but under - utilized palm. By tapping the full potential of the palmyrah palm, employment, income and living standards of the rural people could be enhanced.

1.2 The Problem

The Palmyrah Development Board, with financial support from the United Nations Development Programme, initiated a project in 1989 for palmyrah based development. The major objectives of this project was to generate income and gainful employment opportunities for the rural poor, especially in the North and the East of Sri Lanka, by developing palmyrah based industries. The project also sought to expand and diversify agricultural exports by promoting the export of palmyrah fibre and fibre based products. To achieve these objectives it was envisaged that an overall strategy would be prepared for future action, including training and skill development, technological improvement and other necessary support such as providing extension service and marketing facilities. The lack of information about the types of employment possible in this sector, the nature of activities, the contribution of those activities to household incomes and the constraints related to the palmyrah industry are the major issues encountered in constructing the envisaged strategy. Against this background it was suggested that a study be conducted in order to analyze the impact of the palmyrah palm on it's beneficiaries. This was to be the major objective of the exercise. The Agrarian Research and Training Institute* was requested by the PDB to carry out the proposed study. Here we record the results of this study.

1.3 The Objectives of the Study

The main objective was to examine the impact of the palmyrah palm on employment generation, income and the living standards of its beneficiaries.

The following specific objectives were included in the study:

i. To examine the employment pattern of those who are involved in palmyrah based production activities.

ii. To ascertain the income levels and standard of living of the households involved in palmyrah based industries and the level to which palmyrah products are used for their household requirements.

iii. To understand the present situation of the palmyrah industry and its constraints.

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* The name of the Institute was changed as Hector Kobbekaduwa Agrarian Research and Training Institute from February 1995.

iv. To identify the prevailing community organizations, institutional support and infrastructural facilities to increase the output of palmyrah based products.

1.4 Study Area

Even though this study was proposed to cover all the districts where the palmyrah palm thrived and was found in numbers greater than 1000, it was very difficult to carry out a detailed study of all the districts, especially in the North of the country in view of the prevailing political situation. Hence, it was decided to conduct the study first in a limited number of districts which were accessible. Accordingly, this study was conducted in six districts covering the Eastern, Southern, North Central and North Western provinces of the country. The districts in which the study was conducted are Puttalam, Anuradhapura, Hambantota, Ampara, Batticaloa, and Trincomalee.

1.5 Study Methods

The study basically consisted of a field survey of the palmyrah beneficiaries in the relevant districts. A structured questionnaire was administered to obtain relevant information from a sample of palmyrah beneficiaries in all the districts covered by the study. The data of the questionnaire survey was supplemented by data obtained by other methods of data collection such as formal and informal discussions with community leaders, relevant government officers and personnel of the PDB, and field observations.

1.5.1 Sample Selection

The sample of the field survey was selected from those who can be categorised as beneficiaries of palmyrah based industries. There were different types of palmyrah beneficiaries in the study area; (1) those who utilize the palm as a day to day source of survival but did not earn any income from it, (2) those who produced items from palmyrah based raw material for the purpose of consumption and trade through which they earned an income, (3) those who were employed on a wage basis in production centres or activities of the PDB and in private enterprises, (4) those who had been trained at palmyrah training centres and independently engaged themselves in production as an income earning activity, and (5) those who are undergoing training at these centres, but do not earn anything other than the subsistence allowance given to the trainees. For this study the beneficiaries in the 2nd, 3rd and 4th categories were selected on the basis that they were employed or participated in income earning activities based on palmyrah. The beneficiaries in the other categories were not selected on the grounds that they were not a group whose day to day life was significantly effected by the palmyrah palm.

It was decided that a fixed number of beneficiaries be selected for the sample from each district. About 30 beneficiaries from each district were selected, with the exception of two districts - Trincomalee and Hambantota. In Trincomalee there were more income earners compared to the other districts covered by the study, and therefore a larger sample was taken. In Hambantota there was a very small number of beneficiaries and therefore the sample was also smaller. Table 1 depicts the numbers of palmyrah beneficiaries selected from each district.

Table 1
The Number of Palmyrah based Income Earners Selected for the Sample from Each District

District	Number
Puttalam	34
Anuradhapura	28
Hambantota	09
Ampara	30
Batticaloa	30
Trincomalee	48
Total	179

Due to the small number of palmyrah beneficiaries the sample frame was not strictly in keeping with the statistical stipulations. Therefore, it was not possible to select a sample randomly. The selections were made on an adhoc basis. The sample palmyrah income earners were considered as the informants at the household level.

1.5.2. Data Collection and Constraints Encountered During Data Collection

This study was conducted during the period January - April 1992. A group of graduates, trained after recruitment as casual investigators, were involved in data collection, covering the districts of Puttalam, Anuradhapura and Hambantota. The survey in the districts of the Eastern Province was carried out by the Divisional Officers of the Department of Agrarian Services, since the research team could not enter the relevant villages. As the tension pertaining to the civil disturbances was high, certain categories of people, including those who were engaged in palmyrah based industries in these villages, especially toddy tappers, were in refugee camps. Data relevant to this occupation was obtained from the limited number of available tappers.

CHAPTER TWO

Use of Palmyrah as an Economically Valuable Palm, in the Study Area

2.1 General

The present use of the palmyrah palm as a source of income generating activity and also as a source of raw material for various household requirements varies significantly in the different districts covered by the study. Generally, in the districts in the Eastern Province - Ampara, Batticaloa and Trincomalee - palmyrah was widely used as a valuable economic source. In these districts various parts of the palmyrah palm were used for different products that provided not only employment and income, but also to meet day to day household and consumption requirements compared to the other districts. In these other three districts - Puttalam, Anuradhapura and Hambantota - the palmyrah palm was used less for its economic benefits. However, compared to the latter two districts, in Puttalam it was used as a valuable economic source and generated certain significant benefits.

According to field observations a number of factors seem to have resulted in the palmyrah palm being utilised as a resource which is used at different levels in the different districts. Among these factors, population and density of palmyrah palms, level of pressure by the human population, availability of other resources, variety of income earning activities and the socio-cultural set up in the concerned districts were considered to be important. Each of these factors seem to have more or less effected the establishment of palmyrah based enterprises and household level activities, very often supplementing the household income of those entrepreneurs who used palmyrah as a source of raw material in their respective trades.

In the areas where the palmyrah population is very high and its spread is dense, more people seem to have involved themselves in various palmyrah based activities, while using palmyrah resources for various household needs. In areas where population pressure is high and the availability of other resources which can be used for generating income and employment is scarce, a greater number of people seem to depend on the palmyrah palm as the primary source of income or as a supplimentary source of income. Palmyrah seems to play a specific cultural role in certain areas. It is a palm predominant in the Jaffna Peninsula with a long history and which has provided the various households with their consumption needs, thus catering to certain cultural requirements of the Tamils. As the palmyrah palm has intermingled with every aspect of Tamil culture, there is greater use of palmyrah resources in those areas where Tamil people live or are influenced by that culture. It plays an important role in Muslim communities too.

In the districts coming under the Eastern province, the palmyrah population is relatively higher and the trees are densely spread compared with the other districts (See Table 2 for details on palmyrah population & density in each district). The human population in the province comprises of a considerably high proportion of Tamils. In addition to these two factors, high population pressure and scarcity of resources are evident in this province. In these circumstances the value of the palmyrah palm is enhanced.

Table 2
Palmyrah Population, Acreage and Density of Palmyrah Palms by District

District	No.of Palms	Total acreage with palmyrah	Palms per acre
Puttalam	145,018	7,251	20
Anuradhapura	39,049	2,297	17
Hambantota	1,988	19	104
Ampara	55,500	2,312	24
Batticaloa	230,561	6,986	33
Trincomalee	227,000	10,318	22

Source: ARTI Resource Profile on Palmyrah, 1992.

In the Puttalam District the palmyrah population as well as its density is higher than in Anuradhapura. However, the availability of other resources in this district has constrained the use of palmyrah raw material as an important resource. A greater part of this district is surrounded by the sea, while a sizable area is covered by lagoon water. The sea and the lagoon have always provided opportunities for a larger number of people in this district to earn an attractive income from fishing. Catching prawns/shrimps in the lagoon has become an attractive income generating opportunity for a large number of people. Women also involve themselves in related activities such as sorting or the drying of fish to supplement their income. The availability of land which can be used for commercial crops is also in abundance. Coconut is one crop through which the people obtain a permanent income at present. The cultivation of commercial crops such as onions and chillies on the sandy lands of the area has become a very attractive income source in the recent past. In this situation it is difficult to convince the people in this district that the palmyrah is an economically valuable palm. The population in this district is a mixed one. It consists of Muslims, Tamils and Sinhalese. Although the demand for palmyrah products is not large in this mixed cultural set up there is a certain degree of consumer demand for those products manufactured with palmyrah raw material. The use of palmyrah resources in this district was marginal until recently. But with the support of the Palmyrah Development Board for the manufacture of various products the use of these resources has expanded.

The use of palmyrah for income earning activities in the two districts Anuradhapura and Hambantota were much lesser than in Puttalam. In both the districts palmyrah was thinly spread. In Anuradhapura the population was considerably higher than that of Hambantota and it was also more widely spread over the terrain in this district. In Hambantota palmyrah is limited to a smaller area and the population was also very small and therefore the local people are not oriented towards using palmyrah raw material to manufacture products. The human population in these districts are predominantly Sinhala - Buddhists. When the available land and the population in the districts are considered the density of the human population ranges low. The major economic activities of the majority of the people in these districts were paddy and *chena* farming. There is still enough land available for income and employment generation, subjected to the fact that it is used productively. Against this background the people of these districts are under no circumstances convinced that palmyrah could be a basis for their economic activities.

2.2 Attitudes of People on the Palmyrah Palm

The majority of the people in the study areas have still not understood the value of palmyrah palm. They do not see it as a valuable source that can be used to their benefit. Their attitude is that palmyrah is an unnecessary palm for human existence. Therefore, in some areas people destroy it by setting fire to the palm. Often these attitudes were predominant in areas where other resources and employment and income earning activities were abundant. For example in Serakkuliya in the Puttalam District where the marine resources command attention for purposes of income generation, people do not place a potential value on the palmyrah palm. Therefore, the palmyrah palm is also subjected to burning and destruction in these areas. Even in the Kalpitiya peninsula with the high demand and price for onions people are even uprooting palmyrah palms in order to expand their onion cultivation.

There were limited number of people who looked at the palmyrah palm positively. Especially in areas like Hambantota where the temparature is high and the sea winds are strong, the palmyrah palm is considered a useful source to protect the land from the wind. People dwelling near the beach in Kalpitiya also understood its importance as a palm which serves as a wind breaker. This was especially so in the case of those who utilize the sandy soil for agricultural purposes.

2.3 Palmyrah Industry

Certain important features of the palmyrah industry were identified in the study area. First, the palmyrah industry could be classified into different stages in terms of its progress and development in the six districts. Then, certain districts indicated a pronounced state of prominence for certain products. Generally this industry survives as a subsistance oriented traditional industry. This fact was established through a consideration of the types of techniques employed, the use of labour and the exploitation of market conditions. There were two aspects to this industry, formal and informal. In the districts of the Eastern Province the palmyrah industry was to a certain degree in an advanced position compared with the other districts. Many parts of palmyrah palm; tender leaves, flowers, fruits, seeds and trunks were widely used for various products such as mats and bags, handicrafts, *odiyal*, *odiyal* flour, toddy, timber etc. Table A-1 which shows people's involvement in various aspect of the palmyrah industry also proves this. According to the previous table, in Anuradhapura and Hambantota the beneficiaries of the the sample were limited to a few palmyrah based products. For example, toddy tapping has disappeared in Hambantota. Toddy tapping was observed in Anuradhapura but only in two AGA divisions: Ipalogama and Medawachchiya. In both Anuradhapura and Hambantota, mats and bags were the major palmyrah based products and at Anuradhapura the major product was winnowing fans and in Hambantota the focus was on decorative items.

2.4 Formal Sector

Generally the palmyrah industry is still perdominantly a cottage level production activity aimed at domestic use or supplementing a marginal income for household requirements. Recently, the Palmyrah Development Board initiated training cum production centres for fibre and handicraft. These centres are being managed by the Palmyrah Development Board itself. The Board has facilitated the process with comparatively advanced technology, capital, raw-material and marketing.

This step has laid the foundation to develop a formal sector for this industry. This organised setting of the industry was characterised by the application of advanced technology, hired labour, higher management practices and new market techniques, all of which are of completely different character to the informal or the traditional sector of this industry. These new initiatives have pushed the industry towards a commercially oriented exercise from its previously subsistance orientation.

Although one major aim of the considered production centres (such as fibre centres) of the Palmyrah Development Board was to establish demonstration units to encourage private entrepreneurs to take to the manufacturing of such products, these centres were being maintained with a considerable number of wage labourers and also at a certain level of output in production.

The aim of the handicraft training centres was to train young women in the manufacturing of handicrafts. After undergoing training, some women have continued to be involved in the spheres they were trained within the palmyrah industry as independent producers. Unlike traditional producers, they use new techniques and other services such as advice and marketing facilities provided through their training centres. The study sample consists of the people who strive to generate incomes from these palmyrah based industries in addition to the traditional producers.

2.5 Informal Sector

Although a new production system under the direct management of the Palmyrah Development Board was created, the traditional sector of the industry is still dominating in terms of the number of persons involved and also in the volume of the palmyrah products. In this traditional sector people are involved in producing various products mainly for their household use. These products vary from household goods such as mats, bags, winnowing fans and boxes to food items and beverages such as *odiyal, odiyal* flour, 'cool', *pinattu*, palmyrah milk and toddy. Table A-2 gives a basic picture on the basis in which people are involved in the production process. It indicates that the majority of these manufactured items were mainly for personal consumption. A large segment of the people produce for consumption as well as for the market. Very few were involved in manufacturing, solely for the market. Meanwhile there were some in the sample who hired out their labour for the manufacturing of palmyrah products. Of them a few worked in the formal sector of the industry, while others worked for private entrepreneurs especially with those who were involved in food processing or related products.

Although the focus of the informal sector was on household consumption a surplus was also generated which was used to suppliment household incomes. As there was no ready market for these products they were produced on the basis of requests from neighbours or other buyers. The necessary raw material for these products were identified and collected by the producers themselves from their homegardens or the surrounding areas.

2.6 Labour Use

Producers in the informal sector normally use family labour. Table A-3 shows the type of labour used by the palmyrah based producers. According to the table more than 70 percent of the producers in the sample have used family labour. Hired labour is used on specific occasions such as cutting leaves. On certain occasions entrepreneurs, such as those involved in processing wood, hire skilled people for these activities. However, the palmyrah industry is still characteristically household economic activity. Many of the family members share the production activities by contributing their labour to manufacture a specific part of the particular product, for example in cutting leaves or finding the necessary raw-materials. As it has been a household economic activity the young members have inherited skills from the old. As a result the technology utilised has not experienced change corresponding to the changing times. The use of capital for such purposes is also limited.

2.7 Employment

Despite the fact that the palmyrah industry, in the study area, is a subsistance oriented economic activity, it has generated a certain amount of full time, part time and seasonal employment.

Until recently the number of the people employed on a full time basis in this industry was very small. It was not possible for a large number of people to be involved on a full-time basis due to the low demand and the lack of marketing facilities for various products. But after the initiation of certain production oriented development activities by the Palmyrah Development Board the possibility of expanding the volume of persons involved in this sub-sector on a full time basis has increased in marginal proportions.

By the establishment of fibre production and handicraft training centres under its development programme, the Palmyrah Development Board has not only encouraged a sizeable number of people to enter the palmyrah industry, but has also established a paid workforce which serves the Palmyrah Development Board. This workforce consists of labourers, skilled workers, supervisors and managers who work at the fibre processing centres and trainers who work at the handicraft training centres. The number of people who are engaged as wage labourers in the study area under the Palmyrah Development Board is approximately fifty in number.

Under the handicraft training programme the Palmyrah Development Board has held a number of permanent and mobile training centres in different places of the study districts and have also trained a large number of people. On completing their training, a certain number of trainees got themselves involved as independent entrepreneurs relying on income from their individual palmyrah based enterprises.

A comparatively large number of people are involved in the informal sector of the palmyrah industry compared to the formal sector for various forms of employment and income generating activities. Most of the employment opportunities generated by the palmyrah sub-sector are part time and seasonal.

On one hand the lower demand and the poor marketing facilities available for palmyrah products have prevented the industry from being a sustainable economic activity. The inability to absorb people to be involved on a full time basis can also be attributed to this. On the other hand the availability of marine and other resources such as land in the study areas have acted as a force which restrains people from entering the palmyrah sub-sector.

Table 3 illustrates the basis of employment of the palmyrah income earners selected for the study sample. Accordingly, only 18 percent of the beneficiaries were involved on a full time basis.

Table 3
The Basis of Employment of Palmyrah Income Earners Selected for the Sample

	Puttalam		Anuradha-pura		Hamban-tota		Ampara		Batti-caloa		Trinco-malee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Full-time	8	24	2	7	3	33	3	10	6	21	11	23	33	18
Part-time	26	76	28	93	6	67	27	90	22	79	37	77	146	82
Total	34	100	30	100	9	100	30	100	28	100	48	100	179	100

Table A-4 gives details on the activities of those who were involved in the palmyrah industry on full time as well as on a part time basis. Handicraft makers who have a comparatively better demand for their products in locals, was the group which contained the higher number of beneficiaries involved in a single activity. As much as 9 percent and 40 percent of the beneficiaries in the sample were involved in handicraft manufacturing on full and part time basis respectively.

Toddy tappers comprised the other group which was involved more frequently in that industry on a full-time basis. The reason for this can be attributed to the comparatively higher demand for toddy. In the sample 3 percent were occupied on a full time basis and 8 percent on a part time basis.

Those involved in the making of *Kottakelengu* considered it a part time activity. The availability of palmyrah seeds seasonally was the major cause for this.

Among those who were involved on a part time or on a seasonal basis were farmers, labourers, regular fishermen and members of their households. Table A-5 gives more details on the other occupations and activities of those involved in the palmyrah industry on a part time or on a seasonal basis. Accordingly 24 percent and 12 percent of the beneficiaries in the sample belonged to the categories of farmers and labourers respectively. Nine percent of the beneficiaries were involved in fishing and related activities and were engaged in palmyrah activities during the off season. A lot of beneficiaries involved on full-time basis do not seem to have been employed in other productive activities. Of these, about 59 percent (or 12 percent of the total sample) are involved in household activities. Around 8 percent from the considered group are involved in needle work as a secondary activity. However, 32 percent of the beneficiaries in this category are also involved in farming (Refer Table A-6 for more details).

A greater participation of women over men in palmyrah based employment was observed. The participation of women was higher in handicraft making and fibre processing. The majority of the employees in the formal sector were also women. Training centres have been established for training women in handicraft manufacturing.

Women in the fishing communities involved themselves in manufacturing handicraft products did so in the off season during which time they did not have to be involved in sorting and drying of fish. In the off season they involved themselves in weaving bags and mats to supplement household income for subsistance.

One important reason for the seasonality in some of the palmyrah income earning activities is that the production of *odiyal*, toddy tapping and related products are linked to the seasonal flowering of trees. Normally flowering starts in January.

During the field observations it was noticed that in the villages where there was an adequate number of palmyrah trees, there were at least one or more people involved in certain types of palmyrah activities; weaving of mats or bags and making *odiyal*. Here again the involvement in palmyrah based activities may not be for purposes of income generation. Their main purpose may perhaps be to meet household needs. But when there is a possibility of marketing the produce they will sell them. This may happen once a year or once in two years. The number of people involved in various palmyrah based income earning activities are depicted in Table 4 based on our observations and other information.

Table 4
The Number of Self-employed involved in Different Palmyrah Based Income Earning Activities by Districts

	Handicraft making	Odiyal production	Toddy tapping	Fibre procesing & related products	Total
Puttalam	300	200	10	5	555
Anuradhapura	75	50	15	-	140
Hambantota	15	-	-	1	16
Ampara	200	85	15	-	300
Batticaloa	450	225	25	-	700
Trincomalee	550	400	300	-	1250
Total	1590	960	365	6	2961

Note: 1. These are estimated figures based on discussions and observations.
2. In Trincomalee District a substantial number of palmyrah beneficiaries are in refugee camps or have stopped production activities at present due to communal problems (eg. out of the 300 toddy tappers estimated, around 250 are in refugee camps.)

2.8 Income

The palmyrah industry has provided a certain levels of income for its beneficiaries. For certain people who are occupied on a full-time basis it has been a major source of income. However, a majority of the beneficiaries engage themselves in various production activities on a part-time or seasonal basis. For them this was just a source to supplement their household income. Although the majority of the beneficiaries in the study area are involved in various production activities with the sole purpose of supplementing their consumption requirements through a second source of income, they have also had the opportunity on certain occasions to market their products.

The study further revealed that the income levels obtained by the beneficiaries in each district from palmyrah production activities depended on several factors. The nature of the activity they were involved in, the time period they were engaged in it and the demand and marketing facilities for their products.

The income earned depended on the types of the activity. For example toddy tapping was one activity through which people could earn a comparatively better income.

The major reason for this was higher value of and the greater demand for products like toddy. The level of income that could be earned from each activity depended on the area too. This was due to a higher demand and marketing opportunities for certain types of products, in certain districts, due to a better market network. For example in the Trincomalee District certain individual toddy tappers earned a sum not less than Rs. 3000 per month as net returns. The efficient organisation of the Farm Product Cooperative Society for the purchasing of toddy has been one reason for this high income.

Table A-7 shows the composition of the total household income of an average sample family in the study area. According to this the contribution of palmyrah income to the total household income of an average family was 27 percent. This percentage was higher in the districts in the Eastern Province. In Trincomalee where palmyrah activities command a comparatively higher importance among the household economic activities, palmyrah income accounted for 57 percent of the household income of an average sample family.

In Puttalam and Anuradhapura one quarter of the household income of an average family in the sample was from palmyrah activities.

The higher demand for *kottakelengu*, resulting from the troubles and transport difficulties in the north provided an opportunity for palmyrah beneficiaries in the Puttalam District to earn sizeable incomes from palmyrah activities. In Hambantota palmyrah income was very marginal in its contribution to the total household income - merely 4 percent.

Palmyrah beneficiary families can be differentiated in terms of the income derived from the palmyrah production activity it was involved in. Table A-8 describes this. According to this table, 36 percent of the families derived over Rs. 2000 and around 37 percent of them derived between Rs. 1001 to Rs. 2000 and next 27 percent earned 0 to Rs. 1000 per year from palmyrah activities alone.

2.9 Consumption

More or less all the sample families in each study district used palmyrah products and some parts of the palmyrah palm for their household needs. Table A-9 gives more details on this aspect.

Normally palmyrah firewood and some products like bags and mats were utilized at a uniform level in all the districts. Statistically 70 percent of sample families used palmyrah fuel wood, while 65 percent used bags and mats. During the field investigations it was observed that many of the kitchen utensils in areas with abundence of palmyrah were made of palmyrah raw material. The consumption of sweet toddy and juggery was concentrated in the districts of the eastern province.

Palmyrah fruits and seeds were also extensively used in all the districts studied except in Hambantota where there were only a few flowering trees and therefore few fruits. In places where the palmyrah trees were in abundance people use the fruits and seeds in various ways to their benefit. Normally the sap of the fruit was used for various products, one of which is *"pinattu"*. In the study area 43 percent of the sample families benefited from the fruits. Seed was used in the study area for *Kottakelengu* which was used as *odiyal* flour and for other by - products of *odiyal* flour. In the whole study area

48 percent of the families and in the districts of the eastern province more than 54 percent of the families, utilised palmyrah seed products. Normally meals and drinks made of palmyrah raw-material were common in the day to day consumption habits of the people in some of the areas studied.

The use of palmyrah leaves for thatching roofs, trunks for rafters of houses, toddy in its direct form and its by products like sweet toddy and jaggery were also observed in the study area. Table A-9 depicts the details of the uses of these products. Accordingly most of them were used mainly in the eastern province.

CHAPTER THREE

Technology, Cost of Production, and Marketing

3.1 Technology

The palmyrah industry in the study area depends almost totally on traditional technology. As this industry operates mainly as a subsistence oriented household production activity, except in commercialized ventures technological inputs are adopted in a manner appropriate to the existing demand, based on the low volumes of the products required. Accordingly at present low cost indigenous technology and manual labour are widely applied.

The initiatives taken by the PDB for the development of the palmyrah industry include new adjustments to develop, introduce and encourage the use of new cost effective techniques and knowhow relevant to the respective production activities. The initiatives taken by the PDB in developing appropriate, low-cost technology includes the following;

1. Encouraging the scientists in leading research institutions such as the Ceylon Institute for Scientific and Industrial Research (CISIR) and universities to develop new methods and techniques for the overall development of palmyrah products. The introduction of various types of palmyrah fibre processing machines and a fruit pulp extractor in addition to the introduction of simple, low cost and convenient tools and modern techniques related to climbing palmyrah palms for tapping can be cited as examples.

2. Establishing demonstration units which operate with new production techniques, to encourage the ordinary people as well as entrepreneurs to establish enterprises utilising these techniques. The fibre processing centre

which operates with a sophisticated machine run by a diesel engine in *Ānawāsala* in Puttalam is one such mechanism.

3. Training women and other members of the respective communities in the required skills to make various handicrafts and other palmyrah products aimed at raising awareness in the application of new tools, machines, and models of possible production items. In these centres beneficiaries are trained on the manufacturing of fashionable and modern types of bags, boxes and other decorative items which might find better access to markets in towns. Simultaneously, new tools, which will contribute to cost effective production activities, are introduced to the trainees. These include the instruments used to tear the tender palmyrah leaves into strips, those used for combing manually processed fibre and other tools used for fixing fibre into the structures which when completed serve as brushes. Under the training programmes in the current context the trainees are provided the necessary instruments for their personal use, by deducting the due amount from their subsistence allowances.

Whatever initiatives the PDB has taken, mechanizing the industry seems to be a very slow process. A number of factors contribute to this. The limited market for palmyrah products has been one major reason. Since the market for palmyrah products is not large enough, the opportunity to absorb excessive products which could be manufactured by applying the modern techniques introduced is somewhat limited. Yet, no new markets have been established to purchase newly introduced production items such as palmyrah trays and decorated bags.

Due to the limited market for such products it seems that there is no incentive for the large scale manufacture of the items stated above. Therefore, the introduction of new designs and techniques did not correspond to the capacity of market expansion. An important point is that new technology and training was not delivered to the majority of the early beneficiaries of the industry and those who did not participate in the training. Due to this, they confined to manufacture palmyrah products in the traditional style. As far as the sophisticated techniques introduced for certain production activities such as fibre processing are concerned, they are not practiced widely. The conspicuous fact in this instance is that entrepreneurs have not ventured into this sphere. Perhaps the lack of knowledge on the available economic potential of some activities (eg. fibre processing) in this field and the openings available to invest in more attractive ventures could be cited as possible reasons for this industry being held back in its expansion.

3.2 Cost of Production and Return

Due to the current nature of the production activities the input costs are not very high. In particular, the cash cost of the inputs are minimal. Most of the beneficiaries were provided with necessary raw-material such as tender leaves, fruits and seeds from the trees of their own land, common lands or neighbouring lands without payment. These producers had to bear only the limited cost of instruments such as cutting knives and sizing tools.

Regarding handicrafts, the main input was labour, which is freely supplied by the beneficiaries themselves or their family members. Most of the palmyrah products are labour intensive items. Thus, at the existing level of prices there is only a marginal return from most of the palmyrah products once the labour cost is taken into account. The production cost and returns from making of hats which is a popular handicraft item, were calculated on the basis of information obtained from the Puttalam District. (See Table 5 for details)..

Given that the raw-material is obtained at no cost, the net return in making hats over a period of one month is Rs. 1,175/= when the labour cost is not included. When it is included, there is a negative return (See Table 5 for more details). This indicates that making handicrafts is time consuming and not very remunerative.

Under the existing situation about Rs. 60/= per day is the average hiring charge for women in the area. So women become involved in palmyrah activities when there are no other sources of income. As a result women get involved in palmyrah activities only when other sources of income are not available.

On the other hand, in toddy tapping, in which predominantly men are involved, the beneficiaries can earn a higher income than any type of handicraft activity (See Table 6 for details). Female trees yield more than male ones and a total of 10 trees can be tapped by one person. According to the information taken from the Trincomalee district when 5 male and 5 female trees are tapped, a tapper can earn a net income of Rs.17,305 per month including the labour cost and Rs. 14,305 excluding it.

Table 5
Cost and Return from Making of Hats (Involved per individual per month basis)

	Item	Cost/Value (Rs.)
i.	Raw-material	free
ii.	Dye	25
iii.	Equipment (Cutting knife & tearing) instruments - for one month	50
iv.	Total cost without labour cost	75
v.	Labour cost (Per month Rs. 60 X 25 days)	1,500
vi.	Total cost with labour cost	1,575
vii.	No. of hats produced for a month	50
viii.	Gross income (Rs.25 per hat)	1,250
ix.	Net return without including labour cost	1,175
x.	Net return including labour cost	-325

Table 6
The Cost of Production and Income of Tapping Palmyrah Trees
(Based on per person involvement in tapping 10 trees in a month period)

i.	Palmyrah trees (5 male + 5 female =10)	free
ii.	Equipment (knife-Rs.100/= + 10 bamboo trees and 50 pots-Rs.400/= per month)	250
iii.	Total cost without labour cost	250
iv.	Labour cost per month (Rs.100 X 30)	3,000
v.	Total cost with labour cost	3,250
vi.	Yields per month (5 bottles from male trees + 8 bottles from female trees X 30 days)	1,950
vii.	Gross income (at the rate of Rs.9/= per bottle). (This was the price paid to the tappers by the tavern handled by the Farm Product Co-operative Society in Trincomalee during the survey period)	17,550
viii.	Net Return excluding labour cost	17,305
ix.	Net Return including labour cost	14,305

As far as the economic value of the palmyrah tree is concerned we should take into account its various benefits. Its economic value has been estimated here on per year basis for both male and female trees separately (See Table 7 for details). According to the estimate if its full potential is taken the net income will be Rs. 2,074.00 and Rs. 5,574.00 per year for male and female trees respectively.

Table 7
Total Income of Palmyrah Palm in a Year

		Male Tree	Female Tree
1.	Toddy tapping		
	Per day yield	5 bottles	8 bottles
	Period yielding	2 months	3 months
	Total yield	300 bottles	720 bottles
	Total gross income	Rs.2,700.00	Rs. 6,480.00
	Cost for instruments (5 pots, bamboo tree, knife)	Rs. 62.00	Rs. 42.00
	Labour cost (Rs.100 per day)	Rs. 600.00	Rs. 900.00
	Net income including labour cost	Rs. 2,638.00	Rs. 6,438.00
	Net Income excluding labour cost	Rs. 2,038.00	Rs. 5,538.00
2.	From leaves (for 4 leaves)	Rs. 16.00	Rs. 16.00
3.	From fibre	Rs. 10.00	Rs. 10.00
4.	From firewood	Rs. 10.00	Rs. 10.00
	Total Net Income	Rs.2,074.00	Rs.5,574.00

3.3 Marketing

There were two types of marketing systems operating in the palmyrah sub-sector in the study area. One was the public sector marketing system and the other was a private system. The public marketing system is handled by the PDB and the private system developed spontaneously over the years. These two systems are both important at different levels with regard to the different districts as well as the different products.

3.3.1 Public Marketing System

The Palmyrah Development Board, consistent with its stated objective of developing the palmyrah industry in the country, makes an effort to facilitate the linking of the palmyrah producer with market avenues for the various products with the purpose of encouraging the manufacturing of palmyrah products. In keeping with this position the PDB has established a number of sales outlets called "*Katpaham*" in major cities viz., Colombo, Trincomalee, Batticaloa and Jaffna.

In the study area, at present, purchasing is done only from the districts where production and training centres have been established. This system was in operation in all the districts covered by the study except for Anuradhapura. Normally products are collected from the trainees and from those who have completed their training. However, these outlets and the related purchasing network have not expanded to purchase all the products at the village level in the relevant districts.

Under the public marketing system the products are collected only from palmyrah production or training centres. This is done regularly or whenever products accumulate to a level where there is enough bulk to make transporting it by vehicle economical.

There is no point in looking at the public marketing system from an economic point of view only. It operates as an incentive programme to develop, support and promote the producers to engage in palmyrah production activities. In many occasions the products are transported by the official vehicles of the PDB when the officers return after their field visits. On such occasions transport costs are not added to these products. Thus it is not possible to calculate the profits and the market margins of this marketing channel. However, since no deduction was made for transport, the producers were able to obtain a substantial margin when the product was sold at *Katpaham*. For example for a bag sold at Rs. 75 at the *Katpaham* sales outlet in Colombo, the producers in Puttalam were paid around Rs.60.00. Only a sum of Rs. 15.00 has been received as net returns per product in this instance. The real cost of handling, storage and transport should have been greater than this. Thus this system cannot be counted as an economically viable and a realistic marketing one.

As a means to encourage new-entrants to the palmyrah sub sector the public marketing system provides a valuable service. It has not only provided market facilities for the products of the trainees, but has also facilitated the introduction of these products to various social groups, especially the upper class consumers in large cities like Colombo. The Colombo *"Katpaham"* sells handicrafts, products like *odiyal* flour and by-products made of palmyrah raw material. Some of these are *'kavum'*, *'rolls'* and *'cool'*.

Under the public marketing system the Colombo *'Katpaham'* has established avenues to sell the processed fibre. It has already taken orders to supply fibre to two companies which are engaged in fibre products. At present the fibre is purchased from PDB owned production centres where people are trained in the manual processing of fibre.

3.3.2 Private Marketing System

The private marketing system in this instance refers to the system which developed naturally over a long period of time for the transaction of palmyrah products. This system is still dominant in terms of the volume of products handled. The public marketing system has not moved into the interior and remote rural areas. In some districts the public marketing system is non-existent. Even in other districts where this system operates all the products are not covered by the PDB sales outlets . Hence, the surplus of palmyrah products in the districts where the marketing system of the PDB does not operate and also the other surplus products which are not covered by the PDB marketing system is marketed through the private marketing system.

3.3.3 Market Channels

The market channels and the type of traders engaged in each market channel depends on the type and nature of the products that are in demand. For example for a product like toddy there were no intermediary links. Toddy marketing consists, normally, of a two stage channelling system. Toddy is a product which has to be consumed quickly, for otherwise its quality and taste will change. So it has to be sold to the consumers in the vicinity and most often on the spot where the tapping is done. Generally tappers themselves sell their toddy to the consumer.

The bags, mats, boxes, winnowing fans and other handicraft items manufactured in the rural areas are also marketed in the surrounding locations. In most cases these products were not manufactured unless a request was made or an order was placed in advance. In these cases the market channel did not require an intermediator's service. On the other hand this type of local product was manufactured as it is to meet local requirements might not be of the best quality. This type of production and sale does not require intermediators as the products do not have a great demand outside the locality. However, field observations revealed that there were some traders or collectors of handicrafts at the village level. They buy these products to sell at fairs or local markets in the vicinity.

Items like *kottakelengu* which have a better demand have the potential to be marketed by more than a limited number of traders. This has promoted the development of a number of marketing channels. The figures set down below indicate the normal market channels available in the study area for a few selected products.

Kottakelengu

Producer

↓

Wholesale buyer/Collector

↓

Retailer

↓

Consumer

Handicraft

Producer

↓

Retail Trader

↓

Consumer

Toddy

Producer → Farm product Co-operative Society → Consumer

Fibre

Producer/Production Centre → Palmyrah Development Board → Manufacturer → Retail Trader → Consumer

3.3.4 Demand and Price Formation

The demands for traditional palmyrah products in the study districts can vary. Especially in the districts in the Eastern Province a relatively better demand was observed for various palmyrah products because the people, especially the Tamils and Muslims have been closely associated with the palmyrah palm historically and the palm has become a part of their culture. In other districts such as Puttalam and Anuradhapura the demand for palmyrah products was not as high as in the Eastern Province. There are signs that the people are gradually developing cultural traits associated with palmyrah. Where the density of the palmyrah palm was high, many people use palmyrah bags, mats and other palmyrah products.

The demand for the usual palmyrah products does not seem to be rapidly expanding. Perhaps it will remain constant or decline under the prevailing marketing conditions in the country. In consequence of the liberalized economic policies the market has been flooded with substitutes for palmyrah products such as bags, mats and other handicraft items. It is clear then that there is competition for palmyrah products in the open market. The palmyrah products have not been able to compete against the imported cost-effective products with higher levels of durability. It is not expected that the demand for traditional palmyrah products may increase in the market place in the face of higher quality substitutes. Even the new products of higher quality introduced by the PDB have to compete with imported substitutes. For example, plastic brushes and brooms against brushes and brooms manufactured using palmyrah raw material.

At the village level, the production of various palmyrah items are linked to the direct consumer demand. These consumers are friends, relatives and neighbours of the producers. So these marketing transactions seem occur in a cooperative environment. The prices of the products are also determined within this environment and as such are indifferent to the market forces of demand and supply. "A reasonable price" is a common concept in these transactions.

CHAPTER FOUR

Infrastructural Facilities and Other Services

4.1 General

Until recently palmyrah was not given a priority position in the economic development programmes of the government. Although on some occasions certain initiatives were taken to develop palmyrah resources, these initiatives did not expand to include all the districts and especially those districts where the number of palmyrah trees available were relatively small.

In 1970 when import substitute economic policies were implemented various institutions and bodies attempted to develop the palmyrah based handicraft industry; i.e. palmyrah toddy and other related products such as sweet toddy, jaggery, vinegar etc. During this period Farm Product Cooperative societies were established to deliver a better service to the palmyrah producer. Such societies still function in the Trincomalee and Batticaloa districts. They provide certain services including marketing facilities to develop the palmyrah industry.

In the 1970s, small group of people in Anuradhapura who were keen to be involved in toddy tapping were trained in Jaffna. A few of these persons are still involved in toddy tapping. Except for this, there is no record of services provided for the development of the palmyrah based industries in these districts. Until recently no initiatives were taken in this regard in Puttalam. But in Hambantota the palmyrah planting campaigns were started in the 1920s and in the 1960s by the government directly.

The next important step in the development of the palmyrah sector in this country was the establishment of the Palmyrah Development Board in

1978. Its major task was to establish an institutional framework for the systematic planning and development of the palmyrah industry. At this point in time the PDB with its regional centres is providing various services for the development of this industry; viz. training people, introducing production and techniques and providing raw-material, advice and market facilities to the users. These facilities still do not adequately cover all areas, especially those that are badly in need of such services.

4.2 Training

The fact that the people do not possess the skills necessary to manufacture products for the market is a major barrier to the development of the industry to a level that could be considered to be commercially viable. The PDB has initiated a well organized programme for fulfilling this requirement. The PDB has appointed women trainers trained in India on the manufacture of handicrafts. In districts covered by the study, except in Anuradhapura, mobile and permanent training classes are conducted to train young female school leavers and unemployed women. These trainees are paid Rs. 15 per day as a subsistence allowance to encourage continued participation.

There are no programmes or facilities to train or raise awareness among older women, who form the core group of the traditional sector of the palmyrah industry, in modifying their products to suit the requirements of the possible markets outside of the producing area.

4.3 Extension

The only available extension service in palmyrah development activities, at present, is the network of the Palmyrah Development Board. In some districts, in which development activities have commenced, a PDB coordinator has been appointed to take on the responsibility of all activities and also to disseminate information and provide advice.

The extension network has still not extended to the remote areas and villages as in the case of other crops. The people in areas away from the main cities do not have access to the extension services rendered by the coordinators who are stationed in these cities in the relevant districts. Under the existing situation as much as 79 percent of the palmyrah beneficiaries in the sample do not have access to any type of extension advice (see Table A- 10 in annexure for more details). The PDB is the information source for around 92 percent of the beneficiaries, who said that it is a source of extension advice. This includes the services provided by the district centres of the PDB and the appointed trainers. Around 8 percent of the beneficiaries in the study sample obtained extension advice from NGOs and Farm Product Cooperative societies.

4.4 Credit

Since the palmyrah industry is operating as a traditional industry in the study area the capital requirements is relatively low. Most of the work was done manually and there is little use of expensive technology. Other supportive equipment such as pots for toddy tappers were not so expensive.

However, the study revealed that on some occasions there were a few people who invested a substantial sum of money in certain palmyrah production activities such as *kottakelengu*. Investment on *kottakelengu* on a large scale depended on the possibility of deriving an adequate income and in such cases hired labour and machines for watering were used.

There are no adequate facilities to obtain formal credit to develop palmyrah production activities. The Farm Product Co-operative Society which gained ground in certain areas in some districts, was just one source of credit. For example one person had obtained an interest free loan worth Rs. 25,000 from a relative to buy a machine to water the young palmyrah palms for the purpose of making *kottakelengu*. Another had obtained Rs. 1000 from a private lender at a 15 percent monthly interest rate to purchase the necessary items required for toddy tapping, such as bamboo trees, knives and pots.

4.5 Community Organizations

The Farm Product Cooperative Societies in the Trincomalee and Batticaloa districts were large scale organizations through which was articulated the voice of not only palmyrah toddy tappers but also others involved in various production activities based on local resources. In other districts studied such large scale organizations were not observed, although village level community organizations were quite common. Both Rural Development Societies and Death Donation Societies were common. In addition, youth councils could be found in many of the rural villages. Sports clubs were also common among young groups.

In areas for specific production activities (paddy farming and fishing) there were separate types of organizations established with the aim of developing these activities. However, the facilities provided to the members of such societies were rather limited.

The loan facilities provided under the scheme of small and medium scale industries by the Rural Regional Development Banks would have been another possible source of credit, but in all the districts under study these institutions did not exist.

Since palmyrah production activities still operate on a very small scale, credit is yet to emerge as a major issue.

Even the lending institutions have paid less attention to providing credit to this sector. As our statistics reveal, the majority of the sample beneficiaries had used their own funds for palmyrah activities (see Table A-11 for details), i.e 96% of those who responded to the question on how capital for production activities was found. Only 3 percent of the beneficiaries had obtained credit for these purposes.

CHAPTER FIVE

The General Socio-Economic Conditions of the Beneficiary Families

5.1 General

In general terms industries based on the palmyrah palm had only a marginal effect on family incomes. The income obtained from palmyrah activities has had a causal impact on the level of household consumption, housing and the living standard of these people. Hence, it would be useful to look into the general socio-economic conditions of the relevant families in order to understand the impact of the palmyrah palm on their lives.

Generally persons covered under this study are from remote areas and backward districts in terms of the technology and infrastructure employed in this enterprise. Hence, the socio-economic characteristics of these persons display a backwardness when compared with the overall national situation. However, the sample represents a mixed group in the relevant districts, i.e. beneficiaries in towns and in the villages.

5.2 Characteristics of the Population

The basic social unit among the palmyrah beneficiaries was the household which comprised of a nuclear family. The average number of persons per family was 4.4 in the whole area, which is somewhat smaller than the national level of 5.1 in 1981. The male - female ratio in the sample is 1.07 which is slightly higher than the national rate of 1.04 (see Table A-12 for details on the sample families drawn from the population).

The age structure of the sample households reveal that 33 percent of the family members are in the age category of 14 years and under. As much as

55 percent are between 15 to 50 years (see Table A-13 for details on the age-wise distribution of family members). This distribution is more or less similar to the national population structure.

Ethnic-wise the sample was mixed, racially and in terms of religions. The respondents belonged mainly to the Sinhala, Tamil (Sri Lankan and Indian) Muslim and Malay ethnic groups and practiced Buddhism, Hinduism, Islam, Roman Catholism and Christianity. Sinhalese-Buddhist and the Sri Lankan Hindus were prominent in the study area. Nevertheless, the ethnic profile varied from district to district. For example the sample from the Anuradhapura district showed a 100 percent Buddhist representation and in the Batticaloa District 90 percent were Hindus (See Table A-14 and A-15 for details on ethnic and religious distribution of the palmyrah beneficiaries).

5.3 Education

Table A-16 gives details on the level of education. As it indicates, the literacy rate was at 92 percent, which is higher than the national rate of 84 percent as established by the labour force socio-economic survey of 1985/86. This high level of education can be seen as a result of the basic educational facilities provided freely by the state. Further, approximately 22 percent of the family members had passed the G.C.E. (O/L) examination. This is a significantly high figure compared to the national figure of 11 percent in 1985/86.

5.4 Employment Levels

Around 90 percent of the labour force in the sample families were employed. The main activities are farming, fishing, manual labour for palmyrah based production and trade; most of the persons being self-employed. At least one or more of the family members are usually engaged in palmyrah based production.

The unemployment rate which is around 10 percent in the palmyrah communities reveals a better employment situation in comparison to the national figures. As indicated by the labour force socio-economic survey of 1985/86 the unemployment rate in the country is 13.2 percent in general and 12.6 percent in the rural sector. One of the major reasons for the relatively better situation has been the availability of resources adjacent to these communities such as fisheries in which persons could be involved on a basis of self employment.

5.5 Land Ownership and Tenure

Around 52 percent of the lands which are operated by the palmyrah beneficiary families was under single ownership. The percentage of land under this system of ownership was higher in the Anuradhapura, Trincomalee and Batticaloa Districts. A large percentage, about 23 percent, was held under permits. This form of land ownership is high in the Ampara district; as a large area of the district comes under the Gal Oya and other settlement schemes. The area under the category of "Others" was about 19 percent recorded from the sample in Puttalam. Some land under this category were government lands and estates which were held as temporary holdings by the state. (more details on land ownership and tenure are contained in Table A-17).

According to Table A-18, which shows how the palmyrah income earning families are distributed on the basis of the number of palmyrah palms in the lands they operate, 42 percent of the beneficiaries operated holdings which had 1-9 palms, while 32 percent of the beneficiaries were in lands which had over 40 palms. The other 28 percent were in lands which had 10-39 palms.

5.6 Housing Conditions and Sanitary Facilities

Table A-19 gives details on the ownership and other characteristics of the sample households. The majority of their houses were not upto the standard of the average rural household due to the relatively backward economic conditions of these families. Approximately 76 percent of the palmyrah beneficiary families possessed their own houses whilst 55 percent of the houses were in semi-permanent condition. Approximately 55 percent of the houses were thatched with cadjan or palmyrah leaves. One may argue that this is appropriate to the climate which is generally hot but persons who had access to wealth in the same area had built houses of better quality.

When the sanitary facilities of these households were considered it was found that 88 percent did not have toilet facilities (see Table A-20 for details). The proportion was relatively higher in Puttalam and Trincomalee where the fishing population represented the group of palmyrah beneficiaries. Generally, fishing communities do not seem to use constructed toilets. Where such facilities existed most of them were pit latrines which are not considered to be in keeping with the average health standards of the country.

Approximately 86 percent of the palmyrah income earners used wells as a source of drinking water. About 7 percent used rivers and canals for this purpose. Sixty four percent used well water for bathing purposes as well (see Table A-21 for more details).

5.7 Other Facilities and Household Items

Only 24 percent of the palmyrah beneficiaries' households had the facility of electricity (see Table A-22 for details). Due to the fact that most of the palmyrah beneficiary households are in remote areas there was no access to electricity.

The radio which is a common household item throughout the country was not a commonly visible item in these households. According to Table A-23, which gives details on household items, about 43 percent of the households had a radio. This is attributed to the fact that the low income levels of these families did not permit them to own an asset like the radio. Further, only 7 percent and 40 percent of families respectively had a Television and a push cycle, in their households.

Families which benefitted from palmyrah were found in towns as well as in remote places. Other than those beneficiaries who worked at the production or training centres opened by the Palmyrah Development Board in or near a town and others who were linked to these centres, the rest were in interior areas where basic service facilities were not easily available. Around 13 percent of these households were in places where it was not possible to gain access by a vehicle. In Puttalam and Batticaloa there were 27 and 25 percent of these types of households respectively. As much as 15 percent of the palmyrah households were in places from which the distance to the nearest bus-halt was 10 miles or more.

Around 58 percent of the households were within a distance of 4 miles from the nearest government hospital. However, 9 percent of the households were situated 10 miles or more from a hospital. About 85 percent of the families had primary school facilities within a 4 mile distance, thirteen percent of the families had to travel 10 or more miles to benefit from such facilities.

Even though a primary school was in close proximity of every location, they were not equipped to provide all the required services. Around 18, 29, 78 and 10 percent of the sample beneficiaries in the sample responded that there were the following short-comings respectively: lack of teachers, absence of science facilities, shortage in school buildings and, equipment (chairs and tables).

5.8 Communications

The survey data revealed that the radio and news papers were the main means through which people had access to news. It was also evident that even now in remote areas informal channels play a prominent role in communication (see Table A-24 for details).

5.9 Organizations

The participation of members in the beneficiary households in community level organizations was low. There were very few of these organizations at the village level. The Rural Development Society and the Death Donation Society were the common institutions identified in many villages. About 10 percent of the households in the sample household membership in each of these societies. The Fishermen's Co-operative Society was a common feature in fishing villages.

CHAPTER SIX

6.1 Problems and Constraints

There were various types of problems and constraints confronting the palmyrah industry in the study areas. Whilst there were common problems in the total study area, there were also problems that were specific to one or more districts. Further, the problems in this industry were more or less similar to the problems of other domestic industries face in this country.

Some problems pertinent to the palmyrah industry were solved to a certain extent by the institutionalization of several aspects of the industry. The types of problems raised for discussion in this chapter are specific to the traditional sector of the industry, but in general they are more or less relevant to the formal sector as well.

The palmyrah palm was generally unutilized or under utilised in the districts covered by the study. The lack of awareness in certain districts in relation to the uses of the palmyrah palm, could be attributed to this situation. In other districts the palmyrah palm was recognised as a multiple resource base. The people in the Jaffna district, where palmyrah grows profusely, use palmyrah resources in various ways. This knowledge to utilize palmyrah raw material for personal benefit was not available to those persons in districts other than Jaffna and the East as the life span of the palmyrah palm is relatively low in these districts and also due to the dominance of the coconut palm which was looked upon as the source of raw material for a variety of uses.

The lack of awareness on the variety of uses of the palmyrah resources is considered a source for a series of problems in the industry, the most important being the lack of skills. For example except in some exceptional cases, the general masses in Puttalam, Anuradhapura and Hambantota have not utilized the palmyrah palm for toddy tapping or other products based on the raw materials derived from the palmyrah palm. Due to this they do not have the experience or the skills to undertake toddy tapping and the manufacturing of other related products.

Marketing is another problem this industry faces at this point in time. From the consumer's point of view, since people in general are not familiar with the uses of palmyrah products, the demand for such products is limited for locations where the palmyrah palm is considered indegenous.

The demand for such products in the current context lies in the Tamil culture and to a certain extent in the Muslim culture. The products from districts such as Jaffna reaches the consumer in other districts in marginal quantities. The bulk of the palmyrah products are in demand in the localities they are manufactured and therefore the local markets are the points which absorb palmyrah based products. On this basis the market channels for palmyrah products are in a somewhat rudimentary stage in relation to markets out of the boundaries of districts where a higher proportion of persons are engaged in palmyrah based industries. In the line of exports a few products are promoted to meet off shore demands. Due to this limiting factor there are constraints confronting the authorities with respect to attracting persons to this industry.

Like many other domestic products, palmyrah products have also faced difficulties in competing with substitutes such as plastic products which are available in the market. Under the liberalized economic policies imports and joint investment ventures are supported and promoted. Therefore, the local markets are flooded with substitute products. To a certain extent these substitutes have greater attributes due to the competitive prices, better user life, due to durability and a better finish. This aspect in the market generally plays down the role of the palmyrah product which due to consumer unawareness and irregular supply, is not popular in the local market. Under this existing situation it is necessary to produce palmyrah after a thorough investigation of the types of products that could have better markets. The traditional producers, who comprise the main beneficiary group in this industry, do not have a understanding in a holistic sense about the types of items which might have a better demand in the market. Further, attention is not paid to the modification of these products since production is influenced strongly by domestic utility. Due to this position and lack of vigilance at the market level, production items which are out of fashion are quickly replaced by the substitutes.

Market facilities, if properly investigated, studied and promptly communicated to the producers, it is believed, would encourage more persons to participate in production activities. The PDB is making an effort to study markets and also to identify the palmyrah products that could be pushed into the market where competition for the particular product by substitutes is relatively weak. The sales outlets '*Katpaham*' managed by the PDB, markets products manufactured in various pockets but still these establishment are weak in that they are unable to market products in areas out of the palmyrah producing localities. There is little consumer support. For example palmyrah products do not sell on a large scale in Colombo. Due to this situation, a substantial number of young women trained by the PDB training centres are forced to be idle until they have a market to sell their products.

Problems pertaining to raw material arises under specific circumstances. For example the tender palmyrah leaves which are needed for various types of handicrafts are not easily available to the women producers in the areas where there is difficulty of access to young palmyrah palms. Since there are a greater number of old and taller trees, it is difficult in the majority of the cases to find people who could climb the taller palmyrah palms. In a district like Hambantota there are a limited number of palmyrah palms, and these are frequently in barren lands, far away from the areas where the handicraft makers live. The lack of raw material is thus an issue that constrains the young women trainees in Hambantota from being continuously involved in the production activities. The transportation of raw material from Puttalam or other areas is not considered a viable exercise as the products do not fetch prices to cover the high transportation cost.

In the current context of the utilization of resources and the activities they are involved in, the producers do not require the application of much capital. Except for 1-2 percent, others have used their own funds to establish their enterprises. In the event of this industry expanding to meet market oriented production levels, it is possible that capital would become an important factor. As yet there are no specific credit programmes to support palmyrah based activities.

The negative attitudes of the consumer on the palmyrah industry is another constraint. Occupations based on palmyrah have become severely constrained due to this and the non-availability of resources. In certain areas palmyrah based occupations are linked with the caste system. Under the caste hierarchy each caste has an occupation or some role to perform. Each caste was given a value according to the type of work they were involved in. In the Battulu Oya area in the Puttalam District a group of people belonging to a particular caste have been traditionally involved in making palmyrah handicrafts. Hence people outside this caste were of the opinion that making palmyrah products was a 'lower' occupation. Thus such people are hesitant to enter the palmyrah industry. Generally toddy tapping was also considered an occupation of a lower caste people. This also served as a barrier which kept young people from palmyrah based occupations. Due to such attitudes the young people in the study area did not look upon palmyrah production activities as a possible source of employment. Rural youth in villages opt to enter white collar jobs as they gloss over the social attitudes in terms of caste which is generally linked with palmyrah based production.

The recent efforts of the PDB to train and encourage a group of young people to be involved in palmyrah production activities did not meet with success. This may have had to do with the attitudes of the people. Such attitudes have hindered people from engaging in palmyrah based production activities.

Another issue that confronts the palmyrah industry in the current context is that there are a number of other, short-term as well as long-term crops which yield higher returns. The cultivation of onions in the sandy coastal soils of the Kalpitiya Peninsula can be cited as an example of this situation. In certain instances the palmyrah palm is even uprooted to make space for the cultivation of onions.

If palmyrah is to be developed as an industry in the future, it will depend on the availability of palmyrah resources and the demand for such products. The life span of the palmyrah palm is 100 to 150 years, its growth rate very slow and the gestation period long and therefore the possibility to obtain resources is also prolonged. Under these conditions people may well consider it more logical to use their land, including those under palmyrah, for other crops which are more advantageous in terms of quick economic returns.

CHAPTER SEVEN

Summary, Policy Implications and Recommendations

7.1 Summary and Conclusions

The study focussed its attention on the impact of the palmyrah palm on employment generation and on enhancing the incomes and living standards of its beneficiaries. In addition it also sought to identify characteristics of the palmyrah industry in the study districts viz. Puttalam, Anuradhapura, Hambantota and three districts in the Eastern Province.

The general picture of the palmyrah industry that emerged is one of palmyrah based industries being promoted as a subsistence economic activity for the low income rural households. The utilization of resources as well as the number of products for which these resources are used in this sub sector, is very limited.

In keeping with the fact that palmyrah resources were underused in many rural villages in the study districts there were relatively very few people who completely or partially depended on this industry as an income earning activity. Even though the employment opportunities were varied (full time, part time or seasonal), these opportunities supplemented the household incomes of the beneficiaries. However, the number of persons involved on a full time basis was very small. Those who were primarily involved in fishing, farming or as labourers were engaged in palmyrah activities on a seasonal basis, especially during the off-season. The use of the palmyrah palm for income generation, employment and other benefits differed according to the district. In the Eastern Province, viz Trincomalee and Batticaloa where there was a higher proportion of Tamil and Muslim people, the palm was utilised at a relatively higher degree than in other districts.

The utility of the palmyrah palm and its products for day to day use was higher in the case of the eastern province. However, raw material derived from this palm was more or less used for various purposes in all the districts covered by the study. The tender leaves were used for handicrafts and the base of the leaf was used to extract fibre. The flowers were used for tapping toddy and sweet toddy. The sap was used as a drink and also to make sweet meats like *Pinattu*, oil cakes etc. The young shoot off the seed was processed and used for consumption in the form of *Kottakelangu* and *odiyal* flour. The trunk was used to make rafters and other parts of the palm were taken to make fences and also as fuel wood. The palm was used in live fences too.

The palmyrah industry has been historically a traditional cottage industry for persons who lived with the palm and it had little or no basis as an income generating activity. In the recent past it took the form of an income generating activity with the establishment of the PDB. With the PDB promoting this industry through training and marketing, the palmyrah industry has been removed from its traditional cottage industry status to a more organised activity which yields economic returns within a limited market circle. The technology applied in this industry is cost-effective and simple in its application as of now.

One important feature of the palmyrah industry in the current context is that the participation of women in production activities is higher due to it being a cottage level industry. Men were primarily concentrated in toddy tapping and in the processing of sweet toddy. The PDB training centres and production centres, which overlap one another in their functions, empower the trainees with insight to modern technology and encourage them towards market oriented production. The PDB also helps trainees understand and work with the market network separate from its own sales outlets. The PDB through its efforts monitor the quantities produced and also influences the variety of products that are released to the PDB sales outlets and to markets in the particular locations through the individual entrepreneurial efforts of the trainees. Through the influence of the PDB certain products which were produced on a small scale were pushed to higher levels of production.

In the prevailing situation palmyrah products are being manufactured at very low cost. Family labour and the surplus of unutilized raw material freely available from palmyrah palms along the roads, tanks and canal bunds and in other public and private lands are factors that contribute to the low cost of the palmyrah products manufactured. Any how prices could be stabilised at a higher level if production cost is weighed towards the opportunity cost of manual labour.

The infrastructural facilities and other services such as extension, training and marketing are lacking at present in most of areas except in areas close to PDB production development units (production and training centres and women's societies). These production centres were observed in a few areas, Puttalam, Hambantota, Trincomalee and Batticaloa.

As stated earlier, palmyrah products do not have a ready market outside the areas in which they are produced and at present caters largely to the local level community demand. The toddy tappers are not confronted with market oriented problems as the local market is capable of absorbing the product.

Products like *Kottakelangu* and *odiyal* flour which is a further processed product, but is generally produced in the Jaffna district, is marginally distributed to other locations at present. This is so due to a) lack of transport and b) adequate quantities not being available for extensive distribution. Social factors, rather than economic ones such as demand and supply, play a greater role in determining the price of palmyrah products.

The low levels of awareness regarding the use of palmyrah products constrains the operation of the market forces. From the point of the producers, community organisations support the supply side, whilst the PDB works to meet the real and potential consumer demand targets. The women societies and the Farm Products Co-operative Societies protect the interest of the palmyrah base product manufacturers and in the Trincomalee District those of the toddy tappers. In many districts there were various types of community organizations but they were not directly involved in promoting palmyrah enterprises. Therefore efforts are being made first to develop the skills of those who are interested in such enterprises. Only a marginal number of persons were interested in these activities and this was especially so in districts where knowledge on the palmyrah palm was limited. The younger people were more interested in white collar jobs and were not interested in being trained in this industry. Due to economic activities having connotations of caste palmyrah tapping being attributed to an economic activity of the lower castes - younger people might be reluctant to participate in such training. On the other hand habits too determine the extent to which people in particular localities pay attention to the palmyrah industry. For example, toddy tapping is not a popular activity among Muslims, as this community does not indulge in consuming vast quantities of alcohol based drinks.

Palmyrah producers are mainly an isolated community in certain areas. This is especially true of people living in remote places and who therefore do not benefit from the services and infrastructural facilities extended through the government arm - the PDB.

7.2 Policy Implications

There are enormous resources in the palmyrah sub-sector which can be utilised in the income generation efforts of rural development. However, much of these resources remain underused. The attention of policy makers is rarely focused on this industry.

Certain reasons such as attitudes, especially in young people, regarding being involved in these types of production activities contribute to discouraging policy makers from taking this industry as a serious development activity. However, even against this background of economic disadvantages, unemployment and under employment, a considerable number of relatively younger people do show interest in acquiring skills to survive even in instances where social stigma is a major issue.

The lack of market intelligence is another factor that builds a significant dimension of uncertainity and the substitute products in the markets too contribute to this uncertainity in the production and participation. Amidst these disadvantages the palmyrah industry survives in traditional rural households in certain locations of the district; for example the sap and *odiyal Kelengu* are being used for purposes of food and nutrition. The toddy in its turn serves these communities by replacing illicit arrack in a marginal sense.

7.3 Recommendations

As the palmyrah sub-sector has a large base of untapped resources, development of the palmyrah industry based on the untapped resources will definitely increase rural employment and incomes. To develop this industry attention should be paid to alleviate various constraints and bottle necks which confront this industry in the current context. On this basis the following are recommended.

1. There should be a mass scale promotion programme to make people aware of the economic value of the palmyrah palm. For this purpose news paper articles, pamphlets can be prepared in addition to organising village level meetings and discussions. This knowledge could be disseminated among school children by organising essay competitions or quiz programmes, especially in the areas where palmyrah is found in abundance.

2. The negative attitudes that people have about the palmyrah palm and the associated production activities should be changed if participation is to be enhanced. These forms of programmes to promote the palmyrah based enterprises might effect the participation of rural youth, especially if they are carried out in selected locations.

3. To develop palmyrah industries from the cottage level to the level of a large-scale industry, the necessary support services have to be in place. These services include extension advice, credit, supply of raw material, training, suitable techniques and marketing facilities.

The provision of these services should be linked with provincial level administration or *Pradeshiya Sabhas*, so that every producer in any point, in a district can have easy access to advice and other services. This advice should cover all aspects of this industry. Palmyrah producers should be made aware of the official channels available to them to meet their credit requirements at reasonable interest rates. It is more effective to encourage newcomers to this industry from areas where palmyrah raw material is available. In other cases, transport cost may prove prohibitive. On the other hand, another group could be mobilised to act as middle-men between the collection of raw material and delivery to the producers.

Marketing is an important aspect that needs attention for the further development of the palmyrah industry. Possibilities of marketing the various palmyrah products in the foreign market should be explored and interested parties should be encouraged to export the identified products. Palmyrah products should be used to add value to the various export commodities. For example palmyrah raw material could be used as packaging material in the form of bags and boxes; fruits, tea, vegetables, coffee and spices could be packed in these.

If palmyrah products are thus promoted avenues may be created for these products to enter the foreign market as a substitute to polythene and other forms of packing materials. This form of packaging could be made attractive to the consumer.

- Attempts should be made to find local markets to these products too. These products could be evaluated in relation to the different market segments and therefore they should be examined in terms of imports and other substitutes at the levels of the different market segments. The local tourist industry is another area where there might be potential for palmyrah products. In this instance palmyrah products should be evaluated for quality and finish. Another aspect that needs to be built into the marketing network of these products is to work through private retail or wholesale traders who could in their turn be linked to the general market network.

With regard to toddy it is important to develop a link between the Distillery Corporation and the toddy tappers. The local toddy tappers should be able to sell their toddy to the local collection centres of the Distillery Corporation. In this way this activity can be encouraged.

The organising palmyrah beneficiaries at the local level will be of much use to palmyrah development. If there are grassroot level organizations of palmyrah beneficiaries in terms of the enterprise, other organizations wanting to engage themselves in the industry can link up with these. This will facilitate the palmyrah beneficiaries obtain services via their organization more easily than through individual effort.

ANNEX

Table A-1:

A Cumulative Distribution of Sample Families Involved in Various Palmyrah Products in the Different Districts

Product	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No.of house-hold	%	No.of house-hold	%	No.of house-hold	%	No.of house-hold	%	No.of house-hold	%	No.of house-hold	%	No.of house-hold	%
Mats & Bags	20	59	18	60	08	89	25	83	16	57	24	50	111	62
Decorative items	06	18	06	20	03	33	03	10	06	21	03	06	27	15
Toddy	01	03	07	23	-	-	02	07	03	11	08	17	20	11
Odiyal	19	56	07	20	01	11	23	77	25	89	24	50	99	55
Odiyal flour	02	06	-	-	-	-	07	23	-	-	03	06	12	07
Kanji	08	23	12	40	-	-	02	07	-	-	01	02	23	13
Wood	07	20	-	-	-	-	07	23	04	14	24	50	42	23
Syrup/milk	05	15	06	20	-	-	12	40	-	-	-	-	23	13
Pulp/*Pinattu*	10	29	-	-	-	-	03	10	01	03	05	10	19	11
Other (fibre,cool cakes etc.)	12	35	-	-	-	-	30	100	35	125	08	17	85	47
Total No.of house-holds in the sample	34	-	30	-	09	-	30	-	28	-	48	-	179	-

Table A-2:

The Producers in the Sample who Mentioned the Basis of Their Involvement in Palmyrah Production Activities

Production	A No.of households	A %	B No.of households	B %	C No.of households	C %	D No.of households	D %	Total No.of households	Total %
Mats and Bags	66	37	32	18	11	06	02	01	111	62
Decorative items	12	07	06	03	09	05	-	-	27	15
Toddy	03	02	02	01	14	08	01	0.5	20	11
Odiyal	39	22	46	26	14	08	-	-	99	55
Odiyal flour	05	03	06	03	01	0.5	-	-	12	07
Kanji	23	13	-	-	-	-	-	-	23	13
Wood	14	08	05	03	18	10	05	03	42	23
Syrup/Milk	18	10	02	01	-	-	03	02	23	13
Pulp/*pinattu*	18	10	-	-	01	0.5	-	-	19	11
Other (fibre, cool, Cakes etc.)	76	42	05	03	03	02	01	0.5	85	47
Total No.of house holds in the sample	-	-	-	-	-	-	-	-	179	-

Note: A - For domestic consumption; B - Domestic Consumption & Sale; C - For Sale; D - As hired Labour

Table A-3:

The Type of Labour Used for Palmyrah Production Activities

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Family Labour	32	94	30	100	09	100	28	93	24	86	38	80	161	90
Family & Hired labour	01	03	-	-	-	-	-	-	04	14	05	10	10	06
Hired Labour	01	03	-	-	-	-	02	07	-	-	05	10	08	04
TOTAL	34	-	30	-	09	-	30	-	28	-	48	-	179	-

Table A-4:

Distribution of the Sample Beneficiaries who are Involved in a Full Time /Part Time Basis

	Puttalam				Anuradhapura				Hambantota				Ampara				Batticaloa				Trincomalee				Total			
	Full time	%	Part time	%	Full time	%	Part time	%	Full time	%	Part time	%	Full time	%	Part time	%	Full time	%	Part time	%	Full time	%	Part time	%	Full time	%	Part time	%
Handicraft making	3	9	16	46	-	-	19	63	3	33	5	55	3	10	9	30	2	7	12	43	6	13	19	40	17	9	80	40
Fibre producing	-	-	01	03	-	-	-	-	-	-	-	-	-	-	-	-	1	4	02	07	2	4	3	6	3	2	6	3
Toddy Tapping	-	-	01	03	2	7	5	17	-	-	-	-	-	-	2	7	1	4	02	7	3	6	5	10	6	3	15	8
Kottakelengu producing	-	-	07	20	-	-	4	13	-	-	1	11	-	-	14	46	-	-	04	14	-	-	7	15	-	-	37	19
Wood preparation	1	3	1	3	-	-	-	-	-	-	-	-	-	-	2	7	1	4	-	-	1	2	-	-	3	2	3	2
Services in production centres of PDB	4	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	7	-	-	2	4	-	-	8	4	-	-
Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	-	-	-	-	-	-	1	-
Total	8		26		2		28		3		6		3		27		7		21		14		34		37		142	
Total in the sample	34				30				9				30				28				48				179			

Table A-5:

Distribution by Other Types of Employments and Activities of Households Involved in Palmyrah Based Enterprises on Part Time or Seasonal Basis

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Fishing and Related activities	08	23	-	-	02	22	-	-	02	07	04	08	16	09
Trading	01	03	01	03	01	11	02	07	02	07	03	06	10	05
Farming	07	20	08	26	-	-	11	36	09	32	08	17	43	24
Driving	02	06	01	03	-	-	01	03	-	-	02	04	06	03
Hiring labour	05	15	04	13	-	-	05	16	01	04	06	13	21	12
Household activities	02	06	14	46	03	33	08	26	03	11	09	19	39	22
Government jobs	01	03	-	-	-	-	-	-	04	14	02	04	07	04
Total	26	-	28	-	06	-	27	-	21	-	34	-	142	-
Total Households in the sample	34		30		09		30		28		48		179	

Table A-6:

The Part Time and other Activities of Those Who are Involved in the Palmyrah Industry as a Main Employment

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Household activities	06	17	01	03	03	33	01	03	04	14	07	15	22	12
Needle work	01	03	-	-	-	-	-	-	-	-	02	04	03	02
Farming	01	03	01	03	-	-	02	07	03	11	05	11	12	07
TOTAL	08	-	02	-	03	-	03	-	07	-	14	-	37	-
Total in the sample	34		30		09		30		28		48		179	

Table A-7:

The Composition of the Total Household Income of an Averages Sample Family

Source of Income	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Palmyrah Activities	5040	23	2448	23	1066	04	4300	38	5760	32.2	7500	57	26114	27
Salaried Jobs	6000	27	1700	16	5533	24	2930	26.2	9861	55.0	3723	28	29747	30
Farming	1043	05	1460	14	55	0.2	1356	12.1	644	4.0	873	07	5431	06
Trade & other self employments	2424	11	3200	31	1288	5.5	266	2.3	571	03	142	01	7891	08
Hired labour	1040	04	1218	12	266	1.1	1140	10.2	150	01	130	01	3944	04
Food Stamps	1049	05	425	04	7722	33	302	3.1	61	0.3	121	01	9681	10
Pension & Aids	1281	06	-	-	-	-	866	8.1	642	3.5	415	03	3204	03
Fishing	4160	19	-	-	7466	32	-	-	162	01	215	02	12003	12
TOTAL	22037	100	10451	100	23396	100	11161	100	13124	100.0	13124	100	98015	100

Table A-8:

The Number of Families in each District Which Received Different Levels of Incomes From the Palmyrah Production Activities

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
0 - 500	04	12	12	40	-	-	02	07	02	7.1	04	08	24	13.4
501 - 1000	05	15	06	20	01	11	04	13	02	7.1	06	12	24	13.4
1001 - 1500	07	20	03	10	01	11	06	20	04	14.2	07	15	28	16.0
1501 - 2000	03	09	05	17	02	22	10	33	09	32.1	09	19	38	21.2
2000 <	15	44	04	13	05	56	08	27	11	39.2	22	46	65	36.0
TOTAL	34	100	30	100	09	100	30	100	28	100	48	100	179	100

Table A-9:

The Use of Palmyrah Raw Material or Products for Households Requirements

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Firewood	26	76	14	47	01	11	28	93	24	86	32	67	125	70
Thatching roof	01	03	-	-	-	-	07	23	04	14	11	23	23	13
Fence	17	50	04	13	03	33	08	27	06	21	21	44	59	32
Wood and roof	07	21	03	10	01	11	05	17	10	36	10	39	45	25
Toddy	01	03	05	17	-	-	01	03	01	04	03	06	11	06
Sweet Toddy	01	03	05	17	-	-	05	17	03	11	15	31	29	16
Fruit	16	47	08	27	-	-	03	10	20	71	32	67	79	43
Seeds	20	39	31	10	01	11	19	64	15	54	29	60	87	48
Bags & Mats	20	59	12	40	08	91	22	74	17	61	38	79	117	65
Jaggery	-	-	02	07	-	-	-	-	19	68	18	37	39	21
Total No.of households in the sample	34	-	30	-	09	-	30	-	28	-	48	-	179	-

Table A-10:

The Response of the Palmyrah Beneficiaries to the Question whether There was a Way to Receive Advisory Services

Response	Puttalam		Anuradhapura		Hanbantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Yes	08	24	06	20	04	45	07	23	04	14	09	19	38	21
No	26	76	24	80	05	55	23	77	24	86	39	81	141	79
TOTAL	34	100	30	100	09	100	30	100	28	100	48	100	179	100

Table A-11:

The Means Through Which Capital was Obtained for Palmyrah Production Activities

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Own	18	90	16	94	08	100	24	100	15	100	32	94	113	96
Loans	01	05	01	06	-	-	-		-	-	02	06	04	03
Own & Own loans	01	05	-	-	-	-	-		-	-	-	-	01	01
Number responded	19	100	17	100	08	100	24	100	15	100	34	100	118	100

Table A-12:
The Distribution Pattern of Population by Sex in the Palmyrah Beneficiary Families on a District Basis

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Female	88	53	60	42	22	48	55	53	59	47	100	47	384	48
Male	77	47	84	58	24	52	48	47	66	53	112	53	411	52
Total	165	100	144	100	46	100	103	100	125	100	212	100	795	100
Average members per family	4.8		4.8		5.1		4.3		4.46		4.4		4.4	

Table A-13:
The Age Structure of the People in Palmyrah Beneficiary Households In Each District

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
0 - 5	14	8.5	12	08	05	09	13	13	09	07	04	02	57	08
6 - 14	46	28	54	38	09	20	04	04	25	20	38	18	176	25
15 - 29	42	26	36	25	19	42	26	25	40	32	83	39	246	29
30 - 50	44	27	36	25	11	24	34	33	28	22	66	31	219	26
51 - 65	14	8.5	06	04	02	05	18	17	16	13	17	08	73	09
66 & over	05	02	-	-	-	-	08	08	07	06	04	02	24	03
TOTAL	165	100	144	100	46	100	103	100	125	100	212	100	795	100

Table A-14:
The Distribution of Palmyrah Beneficiaries/Producers by Race on a District Basis

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Sinhalese	101	61	144	100	21	47	-	-	03	02	51	24	320	40.2
Sri Lankan Tamil	21	13	-		-		65	63	122	98	66	31	274	34.4
Indian Tamil	-		-			-	-		-	-	57	27	57	7.1
Moor	43	26		-	18	40	38	37	-	-	38	18	137	17.2
Malay	-		-		07	13	-	-	-	-			07	1.1
TOTAL	165	100	144	100	46	100	103	100	125	100	212	100	795	100

Table A-15:
The Spread of Palmyrah Beneficiaries/Producers by Religion on a District Basis

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Buddhist	09	05	144	100	21	46	-	-	-	-	89	24	263	33
Hindu	15	09	-		-		38	37	112	90	72	34	237	30
Islam	34	21	-		25	54	43	42	-	-	51	42	153	19
Roman Catholik	77	47	-		-		09	09	-	-	-	-	86	11
Christian	30	18	-		-		01	01	13	10	-	-	44	06
Other	-		-		-		12	11	-	-	-	-	12	01
TOTAL	165	100	144	100	46	100	103	100	125	100	212	100	795	100

Table A-16:

The Educational Level of the Members of the Palmyrah Beneficiary/Producer Households

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
No Schooling & Illiterate	08	05	02	1.4	01	02	16	17	06	05	02	01	35	05
No Schooling & but literate	04	03	03	2.2	-	-	14	15	06	05	40	19	67	09
Grade 1 - 5	72	47	54	39.0	20	43	08	08	25	21	13	06	192	25
Grade 1 - 9	52	34	48	35.4	22	48	13	13	23	20	81	39	239	31
Passed G.C.E. (O/L)	15	10	12	09	03	07	33	34	42	36	66	31	171	22.5
Passed G.C.E. (A/L)	02	01	18	13	-	-	12	13	12	10	08	04	52	07
Passed a Degree or higher examination	-	-	-	-	-	-	-	-	04	03	-	-	04	0.5
Total population	165	100	137	100	46	100	96	100	118	100	210	100	760	100
Literacy Rate	95		98		98		83		95		99		95	

Table A-17:

The Distribution of Lands, According to Types of Tenure being Operated by the Sample Beneficiaries in Each District

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Singly owned	112	14	627	88	04	50	50	07	335	74	580	87	1708	52.2
Jointly owned	-	-	-	-	-	-	30	05	39	09	29	03	98	3.0
Permit holders	12	01	45	06	01	12.5	554	88	78	17	64	10	754	23.2
Encroached	04	0.5	-	-	02	25	-	-	-	-	-	-	6	0.1
Share cropped/ leased mortgaged	32	04	48	06	01	12.5	-	-	-	-	-	-	81	2.4
Others	625	81	-	-	-	—	-	-	-	-	-	-	625	19.1
TOTAL	785	100	720	100	08	100	634	100	452	100	673	100	3272	100

Table A-18:

The Distribution of Households in the Sample According to the Number of Palmyrah Palms Available in the Land They Operate

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1 >	09	31.2	06	33.3	02	100	14	56	17	61	19	54	67	49
1 - 5	16	55.1	08	44.4	-	-	07	28	11	39	16	46	58	42.3
6 - 10	03	10.3	-	-	-	-	03	12	-	-	-	-	06	4.4
11 <	01	3.4	04	22.3	-	-	01	04	-	-	-	-	06	4.4
Total of those who operate lands	29	100	18	100	02	100	25	100	28	100	35	100	137	100

Table A-19:

Ownership and Other Characteristics of the Dwellings of Palmyrah Beneficiaries

Ownership	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Owned	19	56	18	60	09	100	25	83	28	100	37	771	136	76
Rented in	05	15	-	-	-	-	-	-	-	-	04	8.3	09	05
Owned by a relative	03	09	06	20	-	-	-	-	-	-	03	6.3	12	07
Others	07	20	06	20	-	-	05	17	-	-	04	8.3	22	12
TOTAL	34	100	30	100	09	100	30	100	28	100	48	100	179	100
Nature														
Permanent	03	09	06	20	08	89	21	70	15	54	27	56	80	45
Impermanent	31	91	24	80	01	11	09	30	13	46	21	44	99	55
TOTAL	34	100	30	100	09	100	30	100	28	100	48	100	179	100
Roof														
Cadjan	31	91	24	80	01	11	12	40	10	36	16	33	94	52
Palmyrah leaves	01	03	-	-	-	-	-	-	-	-	05	10	06	03
Tiles	01	03	-	-	05	56	18	60	16	57	19	40	59	33
Asbestos	01	03	06	20	02	22	-	-	02	07	08	17	19	11
Others	-	-	-	-	01	11	-	-	-	-	-	-	01	01
TOTAL	34	100	30	100	09	100	30	100	28	100	48	100	179	100

Table A-20:

The Sanitary Facilities in the Dwellings of Palmyrah Beneficiaries

Toilet	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomlee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Pit	01	14	12	67	04	57	16	84	14	74	06	28.2	53	58.2
Water Seal	04	57	06	33	03	43	-	-	04	21	07	33.4	24	26.3
Others	02	29	-	-	-	-	03	16	01	05	08	38.2	14	15.3
TOTAL	07	21	18	100	07	100	19	100	19	100	21	100	91	100
No Toilet	27	79	12	40	02	22	11	37	09	32	27	56	88	49

Table A-21:

Water Facilities in Households of Palmyrah Beneficiaries

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
DRINKING														
Well	34	100	24	80	06	30	26	87	28	100	36	75	154	86
Tap	-	-	-	-	03	67	02	6.5	-	-	-	-	5	3
Tube well	-	-	-	-	-	-	02	6.5	-	-	06	12.5	8	4
River/canal	-	-	06	20	-	-	-	-	-	-	06	12.5	12	7
TOTAL	34	100	30	100	09	100	30	100	28	100	48	100	179	100
BATHING														
Well	33	97	-	-	04	44.5	26	87	26	93	25	52	114	64
Tap	-	-	-	-	04	44.5	02	6.5	-	-	-	-	6	3
Tube well	-	-	-	-	-	-	02	6.5	-	-	04	08	06	03
Tank	01	03	-	-	-	-	-	-	-	-	-	-	01	01
River/canal	-	-	30	100	01	11.0	-	-	02	07	19	40	52	21
TOTAL	34	100	30	100	09	100	30	100	28	100	48	100	179	100

Table A-22: The Availability of Electricity in Palmyrah Beneficiary Households

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Available	03	09	02	07	03	33	13	43	10	36	12	25	43	24
Not available	31	91	28	93	06	67	17	57	18	64	36	75	136	76
TOTAL	34	100	30	100	09	100	30	100	28	100	48	100	179	100

Table A-23:

The Distribution of Beneficiary Households According to Household Items

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Radio/ Cassete	11	32	24	80	05	56	23	77	18	64	19	38	78	43
Television	01	03	-	-	02	22	07	23	06	21	-	-	13	07
Sewing Machine	02	06	-	-	01	11	18	60	12	43	11	22	30	17
Bicycle	06	18	12	40	02	22	33	110	25	89	19	38	72	40
Motor Cycle	-	-	-	-	01	11	02	07	01	04	-	-	03	02
Four wheel vehicles	02	06	-	-	01	11	02	07	01	04	-	-	05	03
Total No.of Household in the sample	34		30		09		30		28		48		179	

Table A-24:

No. and Percentage of Palmyrah Beneficiary Households Which Had Access to Different Sources to Receive Day News

	Puttalam		Anuradhapura		Hambantota		Ampara		Batticaloa		Trincomalee		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Radio	17	50	18	60	04	44	28	93	17	61	24	48	82	45
Television	01	03	06	20	02	22	12	40	07	25	-	-	23	13
Newspapers	14	41	12	40	02	22	27	90	23	82	13	26	75	41
Neighbours	22	65	24	80	07	78	13	43	06	21	13	26	72	40
Other	01	03	-	-	-	-	05	17	04	14	-	-	08	04
No.of households in the sample	34		30		09		30		28		48		179	