A History of Marula Use in North-central Namibia

Andy Botelle

A Report Submitted to CRIAA SA-DC (Namibia)

By

Mamokobo Video and Research (October 2001)
**Table of Contents**

List of Tables i  
List of Photos i  
List of Useful Marula Phrases (Oshikwanyama) iii-  
v Acknowledgements vi  
Map 1: (African) Distribution of Sclerocarya (Anacardiceae) vii  
Map 2: (Southern African) Distribution of Sclerocarya (Anacardiceae) viii  
Map 3: Population in North-Central Namibia (1998) with Location of Eudafano Village Committees ix  

Purpose of this Study 1  
Objectives of this Study 2  

Methodology 2  
   Desk Study: A Summary of Key Literary Findings 2  
   Field Research 5  

Presenting Information and Layout of the Report 8  
   Conclusion to the Methodology
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits and Seasonality</td>
<td>9</td>
</tr>
<tr>
<td>Uses of the Marula Tree</td>
<td>16</td>
</tr>
<tr>
<td>Within Local Farming Systems</td>
<td>17</td>
</tr>
<tr>
<td>Shade (Omudile)</td>
<td>18</td>
</tr>
<tr>
<td>Leaves (Omafo)</td>
<td>20</td>
</tr>
<tr>
<td>Branches (Oitcn)</td>
<td>20</td>
</tr>
<tr>
<td>Trunk and Bark (Efina and Epetd)</td>
<td>22</td>
</tr>
<tr>
<td>Roots (Omidi)</td>
<td>22</td>
</tr>
<tr>
<td>Fresh Marula Fruit (Ongongo)</td>
<td>23</td>
</tr>
<tr>
<td>Processing Marula Fruits</td>
<td>23</td>
</tr>
<tr>
<td>Preparing Alcoholic Marula Drinks (Omaongo)</td>
<td>25</td>
</tr>
<tr>
<td>Preparing non(low)-alcoholic Marula Juice (Oshinwa)</td>
<td>27</td>
</tr>
<tr>
<td>The Marula Wine Season (Ongongola, Ondala and Praise Songs)</td>
<td>28</td>
</tr>
<tr>
<td>Marula: For King and Country (Onghatd)</td>
<td>32</td>
</tr>
<tr>
<td>Changing Patterns of Consumption: From Gift to Commodity</td>
<td>34</td>
</tr>
<tr>
<td>The CRIAA SA-DC Marula Fruit Press</td>
<td>35</td>
</tr>
<tr>
<td>Other Uses of Omaongo and Oshinwa</td>
<td>36</td>
</tr>
<tr>
<td>Tree-Naming</td>
<td>37</td>
</tr>
<tr>
<td>Fruit Skins (Oipeta)</td>
<td>40</td>
</tr>
<tr>
<td>Marula Nuts (Oshingokoto)</td>
<td>41</td>
</tr>
<tr>
<td>Extracting the Kernel (Okatongona)</td>
<td>41</td>
</tr>
<tr>
<td>Fresh Kernel (Omaxuka)</td>
<td>42</td>
</tr>
<tr>
<td>Making Marula Oil (Okuhenga)</td>
<td>44</td>
</tr>
<tr>
<td>Uses of Raw and Cooked Marula Oil (Odjove)</td>
<td>45</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Cooking with Marula Oil and Some Recipes</td>
<td>45</td>
</tr>
<tr>
<td>The Consumption, Gift-Giving &amp; Sale of Marula Kernel and Oil</td>
<td>45</td>
</tr>
<tr>
<td>Marula Oil for Health and Beauty</td>
<td>47</td>
</tr>
<tr>
<td>Traditional and Cultural Importance of Marula Oil</td>
<td>49</td>
</tr>
<tr>
<td>Marula Nut Shells (Oshoongoti)</td>
<td>52</td>
</tr>
<tr>
<td>Traditional Rules and Formal Legislation</td>
<td>53</td>
</tr>
<tr>
<td>Pre-colonial and early Colonial Times (before 1915)</td>
<td>54</td>
</tr>
<tr>
<td>The Colonial Period (1915-1990)</td>
<td>56</td>
</tr>
<tr>
<td>Post-Colonial Period (1990 to present)</td>
<td>57</td>
</tr>
<tr>
<td>Propagation Trials: Improving Marula Fruit Quality and Yield</td>
<td>63</td>
</tr>
<tr>
<td>Common Methods of Marula Propagation</td>
<td>63</td>
</tr>
<tr>
<td>Used by Women Harvesters</td>
<td>65</td>
</tr>
<tr>
<td>Propagation Trials Since 1990</td>
<td>65</td>
</tr>
<tr>
<td>Proposed Methods to Improve Yield and Quality</td>
<td>65</td>
</tr>
<tr>
<td>Recommendations</td>
<td>66</td>
</tr>
<tr>
<td>Future Research Needs</td>
<td>68</td>
</tr>
<tr>
<td>Conclusions</td>
<td>70</td>
</tr>
<tr>
<td>Bibliography</td>
<td>72</td>
</tr>
<tr>
<td>Appendices</td>
<td></td>
</tr>
<tr>
<td>1. Contact Addresses For Eudafano Women's Co-operative Associations</td>
<td>76</td>
</tr>
<tr>
<td>2. Marula Recipes</td>
<td>77</td>
</tr>
<tr>
<td>3. Marula Praise Songs</td>
<td>81</td>
</tr>
<tr>
<td>4. Table1: The Uses of Marula Trees in North-central Namibia</td>
<td>85</td>
</tr>
<tr>
<td>Table 2: Market Prices of Marula Drinks and Oil</td>
<td>88</td>
</tr>
</tbody>
</table>
List of Tables: Appendix 4
Table 1: The Uses of Marula Trees in North-central Namibia 85
Table 2: Market Prices of Marula Drinks and Oil 87

List of Photos
Photo 1: Meme Shaimemanya in front of her favourite tree she named "Nakale". In her hands she is offering us a glimpse of her "special" marula fruits from Nakale Front Cover

Photo 2: The marula festival (April 2001) at the homestead of Omukwaniiwva ("King") Kauluma Eliphas of Ondonga, northern Namibia marking the official close of the marula season. Traditional Courts now re-open 7

Photo 3: King Kauluma Eliphas receiving a traditional cup of omaongo from Priscilla Nashandi of Ondangwa Association during the marula festival 7

Photo 4: Marula trees planted in an urban park in Keetmanshoop, southern Namibia 11

Photo 5: King Mandume with war councillors in the shade of marula trees (1915) 19

Photo 6: Giant marula tree shading about 200 people in the main market in Oshikango Town in Namibia, bordering Angola 24

Photo 7: Paulina Nambahu wearing 'relax' in her hair at the marula festival 24

Photo 8: A group of women extracting marula juice at the marula festival 26

Photo 9: Extracting marula juice using a sharp cow horn 26

Photo 10: Kwanyama artist, John Muafangejo's linocut, 'Drinking Marula Wine' 31

Photo 11: The CRIAA SA-DC marula juice press, Tsandi. Introduced in 2001 season 43

Photo 12: Extracting marula kernel using a wooden pole and upturned axe-blade 43

Photo 13: Extracting marula oil by crushing a handful of kernels with a pestle and mortar 46

Photo 14: Eating the "edi" (the marula nut sausage). A useful by-product of the marula oil process and a favourite of old and young 46

Photo 15: "When the men are playing the owela game they are always happy" 60

Photo 16: A sign promoting the conservation of trees in Outapi, Ombalantu 60
Photo 17: Marula propagation trials initiated in 1994. This site was not suitable for marula, producing stunted marula saplings

Photo 18: At the same site a marula tree planted by the President Dr. Sam Nujoma in 1994 has been well tended and has propagated successfully

Photo 19: Wild spinach with marula oil and a maize/millet porridge

Photo 20: Chicken with marula oil
List of Useful Marula Phrases (Oshikwanyama language)

Edi - crushed marula kernel (nut sausage)
Eembe - popular local fruit from the Omuve tree *Berchemia discolor*
Eengholwa - marula fruits which are processed into omaongo (fermented marula fruit juice/pulp)
Eengongo - Marula fruit (Ongongo - singular)
Eetanga - melon seeds crushed and applied as a body oil. Traditionally given to warriors before battle, as it "makes them strong". (Onhanga - singular)
Efina - tree trunk
Efiinga - rain-fed floods from mountains of Angola carrying fish into northern Namibia
Eholo - cup reserved for serving omaongo (custom maintains that a half-filled cup is drunk)
Ekolo - the squeezing of marula juice from marula fruit to make omaongo Epeta - tree bark
Etemba - drinking troughs for watering livestock (often made from marula branches/trunk)
Etumbo - collection of fresh marula fruits into a big pile
Evanda - indigenous dried 'spinach' cake. Often eaten with marula oil
Fipa - an abbreviated word (slang?) describing the way kids/adults roll fresh marula fruit in the palm of their hands to soften the skin, then bite an opening out of, to suck the juice from fresh fruit
Nailunda - local name for a tree suffering from a (ultimately) deadly parasite affecting marula trees in the north-central Region, "If we find it we cut it out".
Nanghalingongo, - Literally, edible "insects of the marula fruit",
Odjove - marula oil
Ohambo - cattle posts traditionally away from main settlement areas
Oihokolola - the official banning of weapons and the closing of law courts (usually February-March each year)
Oipeta - fruit skins
Oitai - branches
Oitoo - clay pots.
Oshitoo (singular) - clay pot
Oiyongoti - lots of kernel
Okufetununa - the name given to the rolling motion of the oshini to make edi
Okufudika ongholo - literally, "burying the horn", (referring to the cattle horn used to squeeze juice from the marula fruit), i.e. when it's "buried" it is the official end of the marula season
Okutongona - process of extracting kernel (cracking and picking with the oluvela)
Okayenga = extraction (Marula oil 30-35% of kernel. Melon seed oil: 2-10%, around 8% at KAP/CRIA SA-DC in Windhoek. Melon seed extraction rate ca. 15% in the UK)
Olambika - marula wine distilled to make brandy. Not common today.
Oluvela - picking tool used to extract marula kernel from the hard shell
Omafo - leaves
Omahangu - pearl millet (the staple crop grown in Ovambo)
Omahapwita - Marula trees with emerging before the flowers. Literally, "among the leaves" and, according to tradition, is a sign of a poor fruiting season to come
Omaongo - marula wine (cider or beer)
Omapu - The old, dried out fruit left on the ground until "after the thrashing and storing of the millet harvest", around June, when it is collected and decorticated to extract the oil
Omatala - local name given to open markets in north-central Namibia where marula products are sold
Omaxuku - kernel (**Omaxuku engongo** - marula kernel)
Omubudja - fresh
Ombulutwe - Marula trees which flower before the leaves emerge. Literally, "without horns" and, according to tradition, will provide the owner with a good fruiting season
Ominakufu - literally, "winter trees". Marula trees that put on fruits late in the season in May. According to tradition, these marula trees will have few fruit in the upcoming season
Omuhakuli - literally, "healer". (**Onganga** - witchdoctor)
Omukwaniilwa and Ohamba (Oshikwanyama) - Can be (roughly translated) as 'King' in English and refers to the paramount chief/headmen. It is not an easy word to translate exactly as it has all kinds of historical-religious-geographical-social-and-political overtones
Omushi - pestle (pounding club)
Omwai (1) - n - festivity opening the season for omwoongo fruits
Omwai (2) - n - condiment, sauce
Onwano - a pile of processed, fresh marula fruit left on the ground to dry before cracking
Omwoongo - marula tree
Ondala - a party at a friend's or neighbour's house to celebrate and consume marula
Ondulii - special, one-eyed marula nuts used by traditional healers to cure mental patients
Ongangan - traditional doctor/healer
Onghata - the time of no weapons during the marula season (literally, "grass carrier") usually February and March each year
Ongholo - sharp cattle horn used to extract marula juice
Ongoma - large kwanyama (largest ethnic group residing in the north) drum. (**Eengoma** - pi)
Ongongo (singular)/Eengongo (pi) - marula fruit(s), literally "seed"
Ongonola - marula season
Ookahola - marula trees that put on flowers late in the season in January
Oshana (1) - ("oyana" = pi.) describes the inland delta system of Owamboland and the Cuvelai drainage network inside Namibia. Shallow, saline basins and meandering 'rivers' ("omuramba") eventually feeding into the Etosha Pan
Oshana (2) - a political region named after the Cuvelai-Oshana drainage network typical of north-central Namibia
Oshifima - pearl millet porridge
Oshilundav - local name for a trees parasite affecting marula trees in north-central Namibia
Oshimbudju - container used to serve omaongo to guests
Oshingokoto (pi) - marula nuts
Oshini - mortar (pounding bowl)
Oshinwa - lightly fermented marula juice mixed and diluted with water
Oshipatu is the "small face" cut from the top of the nut and used in traditional medicines and as firewood
Oshito - group of women carrying clay containers to the home of a friend for Ondala
Oshiyongoti (oiyongoti - plural) - shell of marula nut
Oshinelela - Literally, "main dish"
Owambo (Ovambo) - Ova-ambo, literally "the-people-with-cattle-outposts". (see also the footnote on the bottom page 1)

Owela - traditional owambo game using marula nuts/shells

Sclerocarya caffra - species of marula tree found in north-central Namibia

Shitapako - eating raw, crushed marula kernel

Note: See pages 39-40 for common names given to marula trees by women harvesters and their meaning, as well as page 50 for the names of feasts/rituals where marula is an important ingredient.
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Lastly, this paper is dedicated to all the marula meme’s ("mothers"), especially the Eudafano committee members, who are so wisely looking back to their past in order to develop a thriving Namibian marula industry in the future. Thanks for your generous hospitality, stories, dance, food and drinks so laden with marula.
Distribution of Scleroarya (Anacardiaceae)

John B. Hall, Jeremy H. Williams, Eileen M. O’Brien and Fergus L. Sinclair

Throughout Africa the people of savanna regions utilise and market fruits and kernels from wild maniwa trees. Proactive management of this resource is required to sustain and improve rural livelihoods through higher yield and quality of fruit used for home consumption and cash generation.

Improved management involves identification and use of high quality germplasm together with appropriate husbandry of individual trees. Progress with domestication relies upon a comprehensive understanding of variation and geographical distribution.

Here we present a new distribution map for maniwa (Figure 1) that, for the first time, incorporates the full ranges of all three subspecies. This shows it to be one of the widest ranging African trees. Subsp. bierea and caffeea are shown to have northern and southern distributions, respectively, coinciding only in south-east Kenya and north Tanzania. Distributions are interpreted in terms of elevation (Figure 2) and rainfall (Figure 3).

Figure 1. Distribution map of the three subspecies of Scleroarya bierea (A. Rich.) Hochst and of S. gillettii Kokwaro.

Subsp. bierea (green) from Senegal to Eritrea and south through the Sudan / Ethiopia border area to Kenya and northern Tanzania

Subsp. gillettii (purple) occurs where the ranges of the other subsp. overlap in Tanzania; undifferentiated records (yellow) are also shown.

Subsp. caffeea (red) south of the equator, from South Africa northwards to Tanzania and coastal Kenya, across the continent to the Angolan coast and in Madagascar.

Figure 2. Distribution of Scleroarya in relation to elevation

Subspecies caffeea and bierea both occur at elevations from sea level to around 1500 m, but mostly <1200 m.

The highest record is at 1800 m in the Jebel Marra area, Sudan.

Figure 3. Distribution of Scleroarya bierea subsp. bierea (upper) and subsp. caffeea (lower) in relation to mean annual rainfall

Scleroarya bierea normally grows where mean annual rainfall is in the range 500-1250 mm.

Below 500 mm, subsp. bierea occurs in locally humid conditions in the Nile and Niger valleys.

Subsp. bierea has been spread into wetter climates following southward spread along cattle trails.

Subsp. caffeea is associated more with wetter climates than subsp. bierea. Wet refers to over 1000 mm mean annual rainfall and more than six wet months.

Acknowledgements: This poster is an output from a research project funded by the UK Department for International Development (DFID) for the benefit of developing countries. The views expressed are not necessarily those of DFID. 87307 Forestry Research Programme.
MAP 2
Distribution of *Sclerocarya* (Anarcardiceae) in Southern Africa (Adapted from Palgrave, 1977)
A History of Marula Use in North-central Namibia

Purpose of this Study

Within the broader project of establishing a marula industry in Namibia there is a need to assess the range of marula products currently being used and to understand their potential uses.

Collectively Eudafano Women's Co-operative has more than a thousand members - all women - responsible for the harvesting and supply of marula oil for local and overseas markets. Spread across north-central Namibia these women have a wealth of knowledge and experience working and living with marula. Although its most common uses have been widely reported - most notably the production of quality alcoholic drinks and nutritious oil - very little is understood about the multitude of other local uses of marula. CRIAA SA-DC and Eudafano members agreed that the most cost-effective and reliable means of assessing the uses of marula would be to spend time with the women harvesters recording how different products are processed and used by local communities.

The women of Ondangwa association summarised their reasons for wanting to be involved in this research project: "The different Owambo tribes have different ways of processing and using marula. A good example is the way we use odjove, or marula oil. In the past, many women used odjove as a body oil, a practice that has since died out because of the influence of early missionaries. Today, we use marula oil in food. The tribes living in south-western Owambo though use marula oil with a lot of salt to make thick sauces. The Kwanyama on the other hand, living in the far north of the country, like to add onions, tomatoes and other ingredients. What this shows is that each region and each tribe uses marula differently from their neighbours, and that between us there are many possible ways of using marula oil, in food and as a cosmetic. And today marula can also be used to make money. For example, we Ondonga people, until recently, wasted a lot of marula kernel. We even fed it to our chickens and pigs. We had no idea of the high sales value of it. Now we sell a lot of kernel to raise money. The same applies to the whole marula tree. It's a great resource. If we start researching more about marula culture and marula use within each tribe and understand how each tribe has their own way of using it, this information could become important in the future. Marula could be a gold mine, enabling our women to be even more self-sufficient. We have to practice our traditional technology even if we think it is irrelevant now. We have to pass it on. Our young girls think our world, our way, is finished. Maybe it isn't. Maybe they are chasing an empty dream. That is why we older women are taking

' North-central Namibia or, the north-central region - the area that this study covers - consists of four political regions, popularly known as the '4-0 Regions', but officially the Oshikoto, Ohangwena, Omusati and Oshana Regions. The term 'Owambo' and 'Owamboland' are also used for convenience because almost everyone knows exactly what area they represent. No other concise name exists. Within Owambo are seven tribal groups each speaking a different dialect of 'Oshiwambo' the generic language, and each occupying a traditional land area. Again, these names, and the area they represent, are well known and understood by most Namibians. The use of the term 'communal' describes a (usufruct) tenure system. For clarification of these names, and the places they represent, refer to Map 3. (After Mendelsohn et al., 2000).
the responsibility to improve on the things we know best. And we know marula better than anyone else.” (Ondangwa)

The purpose of this study is to collate the experiences of the marula harvesters (Eudafano members) and to identify with them the potential for new, commercial applications of marula. By utilising existing knowledge women harvesters believe there is considerable potential for the diversification and modernisation of a larger marula industry than currently exists in Namibia. And reliable and detailed information is one of the first steps in developing ways of increasing benefits from this important and highly valued indigenous resource.

The information in this report will also be used to help harvesters, as de facto custodians of the marula resource, secure intellectual property rights over marula, which form the basis of the existing (and future) industry in Namibia.

**Objectives of the Study**

This study focuses on the following issues:

1. The origin and distribution of marula
2. Marula yields and seasonality
3. The different uses of marula in the past and today
4. The primary producers and consumers of marula products
5. The diversity of marula recipes and medicinal applications with marula ingredients
6. Legislation, rules and management of marula trees on-farm and on communal land
7. The methods of improving marula yields and quality of fruit
8. The priority research needs of Eudafano Women’s Co-operative and its members

**Methodology**

Mamokobo Video and Research undertook the following marula research study in close co-operation with CRIA A SA-DC and the Eudafano Women’s Co-operative.

**Desk Study: A Summary of Key Literary Findings**

An initial desk study was carried out to collate existing information on the management and uses of marula resources in north-central Namibia. Although it is widely acknowledged in the literature that marula is one of the most important indigenous fruit tree species in southern Africa there is only general, and mostly second-hand, information on its diverse uses within different population groups. To date there has been no research studies that focus specifically on marula use in Namibia.

Within the literature there are some interesting historical accounts describing marula use in pre-colonial times. The relevance of these earliest accounts comes as a result of our
ability to make a comparison between the practices and uses of marula back then compared with now. The earliest first-hand account comes from the German missionary Hermann Tonjes, working in Oukwanyama (written in 1908). Since the publication of his book, 'Ovamboland', there have been other books, papers and unpublished reports that touch on aspects of marula use in northern Namibia in pre/early-colonial times. Most of these studies focus on Oukwanyama, the largest tribal group in the Ovambo. Most of the other tribes, particularly the smallest groups, have been less intensively studied (or completely neglected).

One of the most comprehensive descriptions of marula use in Namibia was compiled by Robert J. Rodin in his book, 'The Ethnobotany of the Kwanyama' (1985). During his two trips to northern Namibia in 1947 and 1973 he collected a wealth of information and thousands of samples, not just on the plant usage, but also on the cultural and religious aspects of plants among the Owambo population. Rodin picks out marula for special treatment when he not only describes its subsistence and economic value but its overwhelming occurrence in festivals, ceremonies, rituals, rites of passage, and social gatherings. When he describes the "Month of Marula" Rodin touches on a deeper, neo-religious aspect of marula, where historically marula was an agent for political organisation and social integration. Rodin describes the month of marula as "a time of great festivity...unusual because there is a moratorium on crime...no court sessions are held.-a remarkable event..." (p. 37).

Similarly, Vilho Kaulinge (born 1900), in the book, 'Healing the Land' (1997), looking back at his own life during the reign (1911-17) of the last "divine king", Mandume Ndemufayo, describes not one of the practical uses of marula, but concentrates on explaining the crucial link between the productive capacity of the land and the health and unity of the nation. He describes specifically, and in great detail, how the divine Kings of Oukwanyama controlled people's close relationship with fruit trees to stamp their authority and style of leadership on royal subjects.

And in her thesis, 'Symbolic Power of Kings in Pre-Colonial Ovambo Societies', Marta Salokoski describes this role of Ovambo kings: By controlling a key resource like marula, "the king controlled the rhythm and activity in the country" (p.344). The value of marula in the Owambo calendric year is enhanced by the fact that it is the first fruit of the season, before the grain has matured. "In January and February the long, hard rains brought enforced idleness and so the opportunity for a drunken holiday" (p. 344). Like Kaulinge, Salokoski explains the importance of marula in centralising power in the hands of the king, through the official banning of weapons (onghata) the closing of law courts (oihokolold) and initiating marula ceremonies to mark the opening of the marula season:

"The King has certain rights over the marula trees and this right consisted in having part of the yield to use at the marula season. Otherwise trees "belonged" to those whose field was in close vicinity, or who in other ways had claimed the right of usufruct over it. As an opening of the marula season the kings invited [subjects] to a nation-wide celebration lasting for several weeks in which the king offered marula wine to everyone” (p. 345). Apart from this "sacrilization of marula by the kings and queens", a private ceremony would also be held in individual homesteads, similar in structure to the royal ceremony.
"These marula festival opening rites may be seen as expressing symbolically the fertiliy/reproductive capacity of king and queen, and of household head and his headwife...[and] together bring the 'sacralised' omaongo-brew into being and open access to the fruit of the fields” (p. 348).

Not all, but some of these beliefs, ceremonies and rules still exist. Some in practice and some simply in people's memories. Others have been 'watered down' and adapted for public performance. The 'marula festival', so symbolic of the past, has recently been resurrected by traditional leaders and their patrons, as a once-a-year cultural event among many of the tribal groups. A comparison of historical and contemporary accounts reveals the importance of marula as a symbol of the past, not just for the women harvesters, but also traditional leaders, who are seeking to 'reinvent' aspects of their tradition and culture, particularly since independence in 1990. And there is ample evidence to suggest that marula provides people in general with a direct link to events and characters of their past. These beliefs and practices influence how people perceive marula and, arguably, how they tend to, process and use marula today. So, even though Rodin noted drastic changes in people's livelihoods between 1947 and 1973², he was aware of the deeper value of marula. Of the hundreds of plants collected, described and analysed, Rodin chose marula to adorn the front cover of his book with a photograph encaptioned, "women making marula wine".

In terms of more recent studies, an Internet search revealed a large number of newspaper articles, research projects and case studies relating to every conceivable aspect of marula in southern Africa as well as in Israel, the UK, and other countries around the world. As well, video footage and TV programmes made in Namibia by various individuals and organisations were useful introductory tools to observe 'directly' how marula is used. Some of the most useful video and Internet sources referred to in this study are listed in the bibliography at the end of this report.

One specific publication, which should become available in the near future, is worth a mention. This is a detailed monograph of marula currently being undertaken by the University of Bangor in the UK headed by Dr. John Hall. The finished monograph should provide CRIAA SA-DC and the Eudafano Women’s Co-operative, representing the marula harvesters and suppliers in Namibia, with considerable background information regarding the abundance, distribution, uses and future prospects for the commercialisation of marula resources in Africa. This particular research study, investigating the history of marula use in Namibia, will feed directly into the academic research currently being done at Bangor.

² Rodin believed many of changes in peoples lives between 1947 and 1973 could be "explained by the fact that there has been a transition from a predominantly and strongly polygynous society to a monogamous one, influenced by Christian missions" (p. 14). He also noted the changes brought about by the migrant labour system, resulting in 38% of all 18-60 year old men residing outside of north-central Namibia by 1958 (p. 20-21)
The last source of written information came directly from the women of Eudafano. Prior to the field work I met with Eudafano committee members in Windhoek where we discussed the aim and approach of the research. Eudafano Women's Co-operative comprises nine village committees spread throughout Owambo (see Map 3). In order for me to have at least a modicum of insight into the life of a marula harvester, representatives from each committee decided to prepare written accounts of the importance of marula in their lives. These 'essays' were translated from the original Oshiwambo (the local Bantu language) into English\(^3\). As well as written descriptions, they included pictures of marula trees drawn by local women and children. Before the field trip began I had been provided with an introductory understanding of the following:

1) The physical attributes of the marula tree, including descriptions and an explanation of how each part of the marula tree can be used. (Some of the most common Oshiwambo names and phrases used are included on page iii-v at the beginning of this paper).
2) A history of marula use in the past and today.
3) Key recipes for food, drinks and medicines derived from marula. Each recipe included the specific marula ingredient, its preparation and its most important uses.
4) The rules associated with using marula trees and methods of tending them both in communal areas and on private land (allocated by the local traditional authority).
5) The cultural value of marula including popular praise songs, poems, and stories about marula.

Armed with a basic understanding of the uses of marula and its importance in peoples lives it was time to see if things had changed and, if so, how.

**Field Research**

Taking the advice of the 'marula meme's' ("marula mothers") field work was timed to coincide with the peak fruiting season. As they predicted, April was an ideal time to observe directly the pervasive nature of marula in people's lives; women took me into their fields to show me their favourite marula trees (see the photo on the front cover); they showed me how to protect marula seedlings and how they tend to fruiting trees; they showed me how to prepare their favourite marula recipes, and best of all, they let me taste the fruits of their work; the drinks, dishes, songs, dances and stories laden with marula, literally and figuratively. And I was fortunate that the end of my field trip coincided with the end of the marula season. As a climax to the field trip I was invited to participate in a marula festival to celebrate the official closing of the marula season, hosted by Omukaniilwa ('king') Kauluma Eliphas of the Ondonga tribe. Photos from this cultural event are included on page 7.

The bulk of my time was spent visiting each of the nine village associations spread across north-central Namibia. Before leaving for the north I had condensed each of the original

\(^3\) There are seven dialects of Oshiwambo spoken in northern Namibia. This study uses Oshikwanyama only, as it is the largest indigenous language group in north-central Namibia and, incidentally, the largest language group in the whole of Namibia. A useful student project would be to compile a table of equivalent terms in other dialects. This table could be continually expanded and updated by researchers and harvesters.
(Oshiwambo) group essays into a simple table (also in Oshiwambo). This allowed women to quickly recap and update the long list of marula uses they had originally sent to me. At the same time they were able to read the submissions from all the other groups to learn about marula use in areas outside of their personal experience. In this way the initial information given to me in Windhoek was continually refined and updated by each successive group. (A summary of the most common uses of marula is included in Table 1 in Appendix 4 at the end of this report on p.85).

Their own knowledge acted as a catalyst for each other, providing new ideas as well as the background knowledge for a more detailed discussion on more complex issues such as the 'ownership' of marula trees, their propagation, variations in fruit yields from year to year and between sites (biomes), the practice of tree-naming and the effects of increased commercialisation on methods of production and patterns of consumption.

Meetings with key informants within the Directorate of Forestry in Ongwediva and local traditional leaders provided more detailed information on the 'official' rules and regulations affecting marula use. Based on these discussions two projects currently being conducted by the Directorate of Forestry in Namibia were identified as having overlap with this study. The first is the National Tree Inventory project based in Windhoek and the second is the ongoing marula propagation trials done by forestry research staff at the Forest Research Centre in Okahandja.

During the course of field work it became obvious that traditional healers and herbalists are notoriously guarded when it comes to revealing the source of the powers of their healing, it is their trade secrets we are asking for after all. Due to the sensitive nature of this local industry, the methodology applied in this study and the time available was too short to investigate the medicinal uses of marula in north-central Namibia. Of all the women I spoke to only one admitted to being 'onganga' (a traditional doctor). The few medicinal recipes and applications which were revealed to me, therefore, are not representative of the potential medicinal uses. Rather, they represent what is 'common knowledge', home remedies applied in homesteads throughout the north. The deeper knowledge hidden behind the doors of those practitioners who make a living from healing has yet to be tapped. Due to this lack of detail, I have included some of the most frequently quoted medicinal uses from the literature (although it must still be investigated to see if people living in north-central Namibia know of these, or alternative, applications for marula).
Presenting Information and Layout of this Report

Out of necessity (limited space and consistency), academic and industrial literature often de-personalises original source materials. The information I received from the women of Eudafano revealed a definite pattern (and passion) in the way they perceive their marula resource. In all written and verbal accounts, women would first introduce the tree, describing it as a unique, conspicuous and "beautiful" tree utilised by people, birds and animals. They would then explain how marula is "a natural factory", every part of the tree being used for something. The tree was then described according to its physical characteristics: beginning with the leaves, then the small branches, followed by the uses of big branches, the trunk, the bark, the roots, fruit for juice and pulp, fruit skins, shells of nuts, kernel and oil. At the end of each description would be a discussion on the cultural importance of marula, particularly in the past, with often hilarious, insightful and sometimes unbelievable anecdotes about characters and happenings during marula seasons of yester-year.

(Hopefully) their original content, style and format has been maintained in this report. The justification for this being that a familiar approach can be quickly updated and refined by the women themselves, especially if this report can be translated into Oshiwambo and distributed to each village association. The women know a lot about the day-to-day uses of marula. But they are not as familiar or confident about how their knowledge fits into the bigger marula industry being created by their close association with CRIAA SA-DC, government departments, other marula-producing nations and overseas markets. By maintaining what I hope is an 'obvious' structure to this report and by circulating and discussing it as widely as possible with Eudafano members, the women are more likely to understand the value of their indigenous knowledge in guiding the future development of 'new' marula products.

This report layout is also designed to educate and inform readers with little or no firsthand experience harvesting and using marula. As much as possible I have tried to use the original words and ideas of the women, those people most directly linked to the marula resource. The idea being that researchers can take these experiences and re-work them into their own ideas, hypotheses and formats.

Common Oshikwanyama words and phrases used in this study are listed at the beginning of this report on page iii-v. And a list of contact addresses for each of the Eudafano Associations is included in appendix 1, with their physical locations shown on map 3.

Conclusion to the Methodology

The key finding after comparing historical accounts with fieldwork carried out during March 2001 is the
wealth of 'hidden' knowledge about marula use. Not surprisingly, there is a direct link between what people did in the past and what people continue to do today. Alongside cattle and grain - perhaps the most important natural resources in northern Namibia - marula is one of the few resources people continue to rely on year after year. This unbroken link with the past and the practices of people's ancestors provides a unique
insight into life in the past, for the simple reason that it is relevant today. And with Independence in Namibia in 1990 marula has once again become a focus for practising 'tradition' and ritual. There has been a revival of music, song, dance, stories and festivals utilising marula. Growing out of this 'living history' have emerged new opportunities. Far from competing with traditional values and practices, the increased commercialisation of marula has brought new opportunities for local marula producers, albeit very different uses from those of their foremothers. People today are drawing on the past to develop new opportunities using marula, all the while discarding what is irrelevant, modernising what no longer works efficiently and taking on board brand new technologies, supply structures and marketing opportunities. Building on a rich and unique culture marula remains an important resource in people's lives, a dynamic industry and one of the few land-use opportunities with the capacity for growth in the future.

Marula Distribution and Origin

The marula tree is widely distributed throughout the African continent. (See map 1). In southern Africa only the sub-species *caffra* is found, and it occurs over practically all of the subtropical regions. In Namibia marula grows naturally in a belt across northern Namibia from the Caprivi, Kavango into Owamboland and into eastern Bushmanland.

Although marula trees prefer free draining and fertile, loamy soils they can tolerate semi-arid, infertile sandy conditions better than most indigenous fruit trees. "They need only 17 cubic metres a year of water. Even a cow needs more than that" (Salowey), and they "can produce 500kg of fruit per year despite being irrigated with 20% sea water" (Mizrahvi conducting research in Israel. Quoted in Van Wyk & Gericke, 2000). This relatively hardy nature enables marula to grow in a wide variety of geographical locations although its level of fruit production will be compromised accordingly. Marula has a natural resistance to drought, capable of thriving on the brackish underground water sources typical of the Cuvelai delta. In Namibia frost and pests (livestock and rodents) are a major constraints for successful marula propagation, although individual trees, with experience can be grown in all quarters of Namibia. Isolated individuals and pockets of marula can be found outside of its "natural" growing area as a result of human propagation. Photo 4 on page 11 shows an example of marula trees grown as shade trees in an urban park in Keetmanshoop town. Other examples are marula growing in private gardens in Rosh Pinah. These sites are located in the far south of Namibia outside of the 'official' distribution range of marula.

There is growing evidence that the distribution and frequency of marula in north-central Namibia is heavily influenced by the history of human settlement. There is some debate as to how this relationship first came about; whether 1) people settled on the good soils where large numbers of marula trees aggregate naturally or; 2) people settled on the best soils and then, through their intensive use of marula fruit (seeds), increased the rate of propagation around settlements. Most likely the current distribution of marula in north-central Namibia is a combination of both practices; it has a natural distribution and it is
actively cultivated. "Newcomers set up their homesteads on the best soils where the largest
marula groves occur naturally, and then tend to these marula trees in order to increase their
numbers in their fields" (pers. comm. Victor Ueyulu, Senior headman of Oukwanyama
Traditional Authority). As Rusta Hangula from the Directorate of Forestry explained, "Humans
settle in areas with high concentrations of marula trees. In Owamboland the quality of a field and
the desirability of a plot is determined by the soil, the water, and number of important fruit trees
found there - marula, Omwandi (Diospyros mespiliformis), Omulunga (Hyphaene petersian). People
will ask themselves, 'Is this a good place to put my homestead?' If there is good soil, a
source of water nearby and a number of different fruiting trees on the plot, the answer will be
'yes'. Unfortunately, today only poor land is available. All the best land has been taken. More and
more people today are forced to tend to and use marula belonging to neighbours. And this
practice of taking marula and processing it on plots without fruit trees increases the chances of
propagation into new areas. In this way, marula can spread across the land."

Emmanuel H.P.M. Kreike (1995) proposes a similar hypothesis, albeit on a grander scale, that:
The north-central Namibia (and the section of the Cuvelai drainage system extending into south-
central Angola) comprises a completely fabricated vegetation cover, heavily influenced by man.
He believes, "At present, many of the fruit trees in north-central Namibia are outside of what
originally their "natural" range. In the recent past the source of fruit from the marula and Omuve
trees (Berchemia discolor) was the Owambo floodplain in Angola and on the Namibian side of
the border these trees were rare. During the colonial occupation of north-central Namibia [1915-
1917] marula and Omuve expanded south, southwest and southeast. The spread of these trees
into north-central Namibia is always associated with farms and fields and was and is a result of
human agency. Both active and passive regeneration occurred, but propagation of these trees was
always active. Women play a dominant role in the propagation, use and management of fruit
trees" (Kreike, p.50)⁴

The key to understanding the distribution and frequency of marula trees throughout north-central
Namibia, therefore, is that "it is a beneficial 'tree-crop', propagated within fields, and a result of
agro-forestry [actively protecting and tending trees], and not the gathering of fruits from 'wild

This is further borne out by the fact that today the highest concentrations of marula occur in
places where settlements have been established the longest. "Based on living and working in the
north, my quick conclusion is that Ohangwena Region has the greatest density of marula in
Namibia, coinciding with the highest density of farm plots and the best soils. There are also high
concentrations of marula in patches throughout the Oshana Region and in Ombalantu,
neighbouring Outapi (in the Omusati Region). Here you find pockets of marula, and it is not
uncommon to find individual households having up to 10 or 12 trees on a 3-5 hectare plot of
land. As a rule of thumb marula is spread across north-central Namibia with concentrations on
the best soils." (pers. comm. R. Hangula, Vegetative Propagation Project, Forestry Research
Centre, Okahandja).

⁴ Kreike (1995) based his findings on informal sources including interviews with 70 farmers from 30 settlements
spread across Owambo (p. 73).
"It is widely known that the Ohangwena Region has the highest frequency of marula trees in the north." (pers. comm. Simon Angombe, National Tree Inventory Project). Recent survey work carried out by staff from the Directorate of Forestry's National Forestry Research Centre in Okahandja also supports this theory and reveals the effects of human settlement on the distribution and frequency of female marula trees compared to male trees. It is well documented that female trees, because they produce fruit, are highly desirable compared to male trees. In the Caprivi where marula is rarely, if ever, used by the local human population, forests have a 'natural' ratio of male to female trees in the order of 3 to 1 or 1 to 1. In the most densely populated areas of Ohangwena Region, where settlements have been established longest, and where people actively tend to female marula trees on their plots, there are many more female trees than male trees, in the order of 12 to 1 or 15 to 1. And the average ratio of female to male trees in the marula growing regions of northern Namibia (including the Caprivi, Kavango and Owambo) is close to 5 female trees for every 1 male (Hangula, 2000).

Although the data has yet to be fully analysed there is evidence that, "outside of people's farm plots (on communal land) very few marula trees survive to maturity. Most are eaten or damaged by grazing/browsing stock. The national tree inventory project recorded very few cases of marula outside fenced plots. Within leased plots farmers and their wives actively protect marula trees from livestock and deliberately tend to marula trees." (pers. comm. Simon Angombe, Directorate of Forestry). The incidence of marula and the level of regeneration on-farm, therefore, is much higher than on communal lands outside the care of a family where seedlings are exposed to the mouths of hungry goats.

In terms of developing a sustainable marula industry in Namibia it is important to assess the level of regeneration. "In recent decades rainfall has been below average and local water tables have lowered. I believe climatic factors play an important role in the level of regeneration of young fruit trees. It is difficult to estimate regeneration of marula. It is not a good idea to say, 'In 100 years there will be as many marula trees as there are now'. We simply don't know that. If I look at the incidence of young marula trees it is probably less than 10-20%. On the positive side there have been recent endeavours made to propagate more marula throughout the north. Since Independence in 1990 people have been attempting to actively protect marula in their own fields and we have joined hands with local communities to plant woodlots using indigenous trees such as marula. This type of land use is both desirable and appropriate for local farming systems". (Rusta Hangula, Directorate of Forestry. See also p.65, 'Propagation Trials since 1990' for more details).

**Origin of Marula**

According to the most recent studies, marula is indigenous throughout sub-tropical Africa (See map 1). "Marula is indigenous to northern Namibia. We Owambo people found it here when we came on our migration from the north. It occurs here naturally. It was not brought with us."
The women of Ohangwena Association believe, "Marula is a creation of God. When we came to Namibia we found it here. Over many, many years we tested that tree to see what we could use. That's how we learned to use marula." And Rusta Hangula conducting research into the propagation of marula believes, "My gut feeling is that marula is indigenous to northern Namibia. It occurs all over Africa and this indicates to me that it has evolved in Africa and spread to regions experiencing similar conditions, perhaps through the movement and migration of animals (Pers. comm. Rusta Hangula, Directorate of Forestry).

And in South Africa a local newspaper featured an article describing the early inhabitants of Ndondondwane, Tugela Valley, in KwaZulu-Natal. Although not the earliest known Early Iron Age settlement in the province, this site has provided details about farm life more than 1300 years ago: "...The community grew millet and perhaps other crops, and made use of various wild plants such as the nuts of the marula tree... We also know that they made beer." (The Natal Witness, January 1999, "The Way we Were"). This implies a long history of marula use in southern Africa and an indigenous marula population long before the Owambo (western Bantu group) arrived in north-central Namibia (probably around 1600. Williams, 1991, p.53). What also seems apparent is the huge and direct influence agro-forestry-pastoralists, like the Owambo, have had on the spread and numbers of fruit trees in Africa. And marula has been one of the most successful immigrants, moving and settling with the people who use it.
Fruit Yields and Seasonality

There has been no attempt to accurately quantify the number of marula trees in north-central Namibia. In order to provide an idea of the scale of possible marula fruit production in north-central Namibia, 'guestimates' - based purely on observation and discussion - place the total number of marula trees in Owambo in the order of 1 to 1.5 million (pers comm. Pierre du Plessis, CRIAA SA-DC). If the lower figure of 1 million is assumed, and an average of 5 out of every 6 trees is a fruit producing female (based on the research of Rusta Hangula; refer to page 11 above), then approximately 800,000 will be fruit-producing trees. It is not known how many trees are readily available to harvesters, but considering most occur in people's fields in the most densely populated areas of Owambo, then the bulk of these trees can assumed to be harvested every year; a conservative estimate might be in the order of 500,000 trees.

Unfortunately no detailed studies have been conducted in Namibia to assess individual tree yields but we do know fruit production varies enormously from tree to tree and from year to year. Specific trees are known to be highly productive (in most years), whilst other female trees are virtually barren every year. Research conducted by Holzhausen reveals that selected cultivars can reliably produce one ton of fruit every year. And P.W. Taylor measured some yields "upto four and a half tonnes per tree in Botswana". "On average mature fruit trees produce between one and three tonnes of fruit per season, with some trees capable of producing six tonnes". (Taylor 1997. p.3)

Although exceptional yields like these can be obtained in Namibia, "fruit yields of 0.4 to 1.6 tons (approximately 21,700 to 91,000 fruits per tree) have been recorded throughout southern Africa and yields are probably as high in Owambo" (p. 31. Marsh and Seely, 1992). An average annual yield of 570 kilograms is recorded in the Okavango Delta Region of Botswana (Roodt, 1988) and 500 kilograms in 12-year old trees in Israel (Nerd & Mizrahi, 1993). If we assume an average of 500 kilograms per female tree per year, total available fruit production could be in the order of 250,000 tons. This represents a huge potential resource.

In terms of the length of the growing season and available yield, the short abscission period has traditionally meant a glut of marula in good years. According to women harvesters a bumper harvest will produce such volumes of fruit that they are unable to process it all, although the actual amount will vary from place to place and from season to season. Even though marula fruits ripen on the ground and can remain there for some weeks before beginning natural fermentation, women are often unable to process all the available marula within just a few weeks. (Perhaps this is another reason why traditionally women are so preoccupied with marula during the January-April season; they have to make the most of it while it is still fresh). Specifically, women harvesters mentioned that the oil extracted from "old" fruit left on the ground for too long is not of the same quality as oil extracted from the freshly fallen fruits. Women, therefore, are forced to process as much marula as possible during the short time it is available. "Because many marula trees [abscise their] fruit at the same time there are often excessive quantities of fruit to process. People are unable to collect all of them to make
omaongo, so they rot on the ground. These fruit are also collected and processed after they have dried out. Women gather them after they have finished threshing their mahangu (millet) and storing it [usually around July]. These marula fruit are called "omapu", meaning, "dry marula fruit together with their skins".

New machines have helped speed up the processing of the fruit. A CRIAA SA-DC designed marula press was introduced to each of the Eudafano associations during the 2001 fruiting season. Larger batches of marula can now be processed quickly for their juice. If more marula fruit presses can be introduced to a wider range of communities, then a larger proportion of the available yield can be processed before it is wasted. (See also the section entitled, The CRIAA SA-DC Marula Fruit Press on page 35).

Although individual trees have the unique ability to produce fruit outside of the 'normal' fruiting season, women harvesters explained that in most instances the first fruits of the season abscise in Ohangwena Region in north-east Owambo, usually in late January, and the last fruits to abscise are in south-west Owambo in May, equivalent to a 3-4 months fruiting season across the region. Pierre du Plessis of CRIAA SA-DC, working on the Indigenous Fruits Project in Kavango and Owambo, recently learned from local residents and government extension staff that marula in the Kavango (further east) begins to abscise much later in the year, some trees continuing to fruit until August. And in Tsumeb marula trees regularly fruit into June and July.

The potential fruiting season across the entire northern Namibia, therefore, could be double what was initially thought; the 3-4 month fruiting season typical of trees growing in north-central Namibia could well be extended to nearer 8 months, if the marula growing in Kavango and Caprivi can be harvested. It should be noted that this does not give us any indication of total available yield as the harvesting of marula is likely to be much lower in Kavango and Caprivi due to 1) the lower absolute numbers of female trees dispersed throughout eastern forests (based on estimates provided by Hangula, 2000. See page 11) and 2) because people do not traditionally harvest marula in these areas.

Women harvesters have also identified certain trees that produce leaves and flowers outside of the normal spring season: "Those marula trees that put on flowers late in the season in January are called "ookahola", and those that put on fruits late in the season in May are called "ominakufit", meaning, "winter trees". (Extract from an essay by Qhangwena Association). Identifying early and late fruiting trees is an important part of ongoing research within the Directorate of Forestry.

As one of the most important fruit trees in north-central Namibia the Directorate of Forestry is busy evaluating the potential to improve fruit yields. One way to do this is to identify specific trees known to produce high quality (sweet and juicy), high yielding fruit outside the regular growing season, January to May, and to propagate trees with these beneficial characteristics. (This is discussed in more detail on page 65).
Cultural Aspects of Seasonality: Marula as a Weather Prophet

"This year everyone is complaining that there is not enough marula fruit. This is because last year we had poor rains. Next year, on the other hand, will be a good marula harvest because rainfall this year was good. Some people, the older farmers mostly, study each of their marula trees carefully. They say the marula trees tell them the future; 'this one is behaving as if drought is likely'... 'this one is telling me the "Efundja" (floods) will come' " (Victor Ueyulu, Senior Headman, Oukwanyama Traditional Authority).

"Ondobe is a good area for marula trees. There are plenty here. This year though is not a good marula fruiting season. Last year we received poor rains so there's not enough fruit for us to produce all the juice and oil we need for the year ahead. It means we have to collect more intensively this year. Not like last year when there was a carpet of marula over the whole country" (Ondobe Association).

It seems common knowledge - all groups mentioned it - that the rain of the previous year determines the upcoming marula yield. And the poor rains of 2000 meant that by March (2001) harvesters in all areas were complaining that the only decent quantities of marula available were away from the towns and densely populated farming districts. Most of the marula in people's fields had been harvested and the only fruit left were considered too small and too much effort to collect. This year's rainy season (2000-2001), on the other hand, was a good rainy season, and everyone is predicting an average/above average harvest for the coming year (2002-2003).

Harvesters from Ohangwena noted that usually the flowers of marula start shooting in September together with the leaves. "If, one year, a marula flowers before the leaves emerge then there will be more fruit Those trees are known as, "Ombulutwe", ("without homes", referring to the absence of leaves). And if the leaves come first then those marula trees will have few fruit. We call these "Omahapwita" ("among the leaves")." (Extract from an essay by Ohangwena Association).

Many groups explained how a wise owner will use his marula trees in his field as a weather prophet for other agricultural practices. "Some marula trees are prophets. If you see many flowers and fruits forming, it means the season ahead will be a good rainy season" (Okahao).
"Experienced farmers will use the tree to understand where the rain will fall. They say that if the east side of the tree has many fruits then the rain will fall heaviest in that part of the nation. If fruits form on the west side of the tree, rain will be best in the west. And if there are only a few fruits in the centre of the tree, then the middle part of the nation will be relatively dry this year" (Ohangwena Association).

"Did you know that a marula tree can be a prophet too? Meme Shaimemanya [of the Ondobe group] has a tree that fruits in three ways: Sometimes one side of the tree will grow fruit only, and they may be big and juicy. This tells her the rain will be good on that side of the country and poor on the other side. Or it may grow small fruit on the inside of the tree that means there will be small rains on our land here at Ondobe. Or the tree may
fruit on the other side of the tree meaning there will be good rains on the far side of the country” (Ondobe Association).

"A marula tree can tell you the weather pattern for the coming year. Marula trees flower in September and October. Many healthy flowers indicate a good year ahead. And big fruit growing over the entire tree will tell us the whole country will receive enough rain. We also know that a severe drought in a previous year will give really poor fruit the following season. In this way all trees are prophets. *Omuve* (*Berchemia discolor*) is a very good tree for helping us make good decisions about farming. Some people concentrate on male trees to give them signs: If you see leaves sprouting from a male tree then it's time to plant” (Ondobe Association).

### Uses of the Marula Tree

"Marula is the most important tree here because it produces so many things. Other fruit trees produce just fruit and perhaps have a few other uses. With marula anything and everything can be used.” (Ombalantu Association).

A 1991/92 survey of 40 households in north-central Namibia concluded that, “marula trees are the most common trees in cultivated lands in Ovambo”. The study revealed widespread use of marula for an array of different applications. Of the 40 households sampled all reported using marula trees, with 95% of all households brewing omaongo, and 20% using the edible nuts to make marula oil (quoted in Marsh and Seely, 1992. p.30-31). Over the last decade it is likely that the number of marula users and the range of marula products could be even higher due to improved commercial markets for marula, both locally and overseas, and the rising demand for natural resources for domestic consumption among the growing Ovambo population.

Van Wyk and Gericke (2000, p.56) believe marula to be, "perhaps the most important of all southern African fruit trees”. Apart from its growing commercial potential, the poorest households traditionally benefit from marula. As Marsh and Seely noted (1992, p.30), the “gathering and storing of wild plant resources is an important means of coping with drought and marginal agricultural production throughout the Oshana area.” They also highlighted the value of marula fruits in maintaining nutritional intake among children and the importance of marula kernels as food for old people unable to cultivate large fields. Marula fruits contain important sources of vitamins, trace elements and are rich in protein. Pensioners are able to supplement their diet by processing marula on their plot. With 'richer' households now expanding production for sales, marula is becoming more important than ever, both as a source of food and nutrition, and as a means of making money.

"The most important tree for us is the marula, followed by *Omuve, Omwandi, Omulunga* and *Omukwiyu. Omusati* is also important for many day-to-day uses, as firewood and for construction purposes”. (From an essay by Ondobe Association, Ohangwena Region).
"A symbol of prosperity, a woman with many marula trees is regarded as blessed. For centuries the marula tree has been an important source of food and of cultural significance." (NBC, Open File, 2000)

**Marula Use within Local Farming Systems**

One of the less obvious roles of marula is its contribution to farm life in north-central Namibia. The Owambo farming system can be classified as an agro-forestry-pastoral system because it consists of three main components:

1. Agriculture: Crop production
2. Forestry: Tree tending and use
3. Pastoralism: Transhumant livestock production on (seasonal) pastures

Marula constitutes not only an important resource in its own right, but also provides important linkages between the daily needs of family life, livestock and crop production.

Experienced farmers in Owambo are very aware of the relationship between marula and crops and practice a variety of agroforestry techniques. They consider trees as important windbreaks. Marula in and around fields reduce waterless, buffer temperature extremes (shade on hot days and frost in exceptional winters) and protect delicate flowers, leaves and young fruits from desiccating dust storms. Older farmers are also aware of a strong link between trees and soils. Some trees have "bad roots" as one farmer put it, rapidly mining moisture and nutrients from the soil and harming crops while others, like marula, are favoured because of their less deleterious effects. (Kreike, 1995. p 49).

"Marula is probably the most tended crop on the farm. Planted on the best soils, it provides one of the highest returns. Tenure affects how families tend to a tree. Some people though have experiences with too many marula trees decreasing the productivity of the land as it competes with other crops and vegetables", (pers. comm. Michael O'Brien, DANCED project, Directorate of Forestry, Ongwediva).

"If you see marula trees in your field you feel proud of them. But if you see too many in your fields then that is dangerous. Too many marula trees in your arable fields will take all the water and nutrients". (Lilja litenge, Okahao Association).

"A lot of people benefit from that tree. These trees grow fast in good, soft soil. Too many marula trees in a field will make it difficult to grow sufficient mahangu, because marula trees consume most of the soil moisture and nutrients". (Ongenga Association).

In the following section some of the most important uses of marula are discussed. We will see that, along with its contribution to the farm, marula - in all its forms - has a central place in the home and in the market place.
As the Endola group summarised, the marula tree is important on a practical level because it is a source of:

1. shade (*omudile*)
2. firewood (*pikuni*)
3. Palisade fencing around traditional homesteads (*piti yokundikd*)
4. Fruit (*eengongo*)
5. Marula juice (*oshinwa*)
6. Fermented and distilled alcoholic drinks (*omaongo* and *olambika*, respectively)
7. Marula oil (*odjove*)

**Shade (*omudile*)**

"We have a lot of trees in Namibia that give fruit and an important source of livelihood for many people. Marula is the most famous of these fruit trees. We call marula trees *Omwoongo*. A marula tree is a big tree with an umbrella-shaped crown. It is very beautiful." (Opening sentence to an essay written by Endola Women's Association)

"The marula provides a wonderfully shady resting place. Although its leaves are small its foliage is so dense that the rays of sun barely penetrate it." (Endola Association)

As one of the few really big trees in Ovamboland - on occasions up to 20 metres tall - the canopy of a fully-grown male or female marula tree provides a large expanse of solid shade. In the heat of the day this shade is a welcome resting place for birds, animals (especially domestic animals), people and their cars. As a result marula trees create an ideal meeting and resting place.

Marula trees are one of the longest surviving and most conspicuous landmarks in north-central Namibia. As a result some of the largest and oldest trees have become important historical sites. One local Kwanyama story-teller took me to Omhedi near Ohangwena town to a grove of large marula trees. It was here where the last Kwanyama *Ohamba* (‘king’) Mandume met to discuss war tactics with his councillors, in the shade of these very same marula trees (see photo 5 on page 19 below). This same story-teller also showed me another "sacred" spot not far away from Onekwiya School also in Ohangwena Region where a *Omwandi* tree and a marula tree grow from the same spot. This place was also frequented by Mandume where, "in the cool shade, and never with his mother, Mandume wiled away many an afternoon with his concubines. These trees take it in turns to bear fruit; first one and then the other. And they are special fruit. Very sweet. Totally different from any other. After Mandume was killed the missionaries held their church in this important place." (pers, comm. Pastor Shinana from Engela in Ohangwena Region). These stories and these trees are still revered today.

In many towns and villages in north-central Namibia the largest marula trees often serve as open markets, *Omatala*. Photo 6 on page 24 shows a giant marula tree shading about 200 people in the main open market in Oshikango, Ohangwena Region.
"In the summer months, particularly during the marula season, it is common to find women sitting together under shade of marula trees in their fields to meet and work on their daily chores, like mending clothes, weaving baskets, and cracking marula nuts." (Okahao Association, Omusati Region)

The marula tree, because of its relatively common occurrence, its grand canopy and solid shade, is a natural meeting place, a cool habitat and an important place of natural beauty. "Nature is most beautiful when there are many trees and a cover of good vegetation. All plants give something. For us Marula is most important as a shade tree and a fruit tree.’ (Extract from an essay by Endola Association).

**Leaves (Omafo)**

Marula produce their first flush of leaves in spring when temperatures rise quickly in September. Leaves usually fall in autumn at the end of the fruiting season, around June. (It should be noted that the timing of the first and last leaves as well as flowering and fruiting varies from tree to tree, from year to year and from place to place.

The primary use of marula leaves is the supply of a nutritional feed for goats and cattle. Leaves can be collected and stored as a fodder bank for use in the dry season when grazing is scarce. People also use dry leaves as fertiliser for their fields. "To make good fertiliser you first dig a big hole and fill it with leaves. Leave them for two weeks and it's ready to use as manure”.

(Ohangwena Association) Some women mentioned that bums can be treated with marula leaves. (Specifically, Venter & Venter, 1996) also report the use of an essence made from marula leaves to treat bums and abscesses).

**Branches (Oitai)**

An important use of live branches is to propagate new trees. The procedure is described below and comes from the Ongenga Association:

Step 1 - cut a 2-3 metre long branch from a desirable mother tree. Step 2 - dig a hole in the ground to the depth of your elbow, up to 1 metre deep. Step 3 - plant in September [when the trees growth hormones are most active]. Step 4 - fence off the cutting to protect it from grazing/browsing animals. Step 5 - water the cutting in the early stages (of root establishment and re-growth). Step 6 - Female trees propagated from truncheons can occasionally produce fruit within 3 years, but usually it takes between 5-10 years.

5 A 'desirable' tree is one that produces high quality fruit in large quantities. (See also the section on Propagation and Improving Tree Yields below for a deeper discussion on propagation techniques using truncheons, seeds and grafting).
"It is important to remember that a truncheon cut from a female marula tree and planted in good soil will produce a new female tree once it has matured. If you cut a branch from a male tree and plant it, that branch will grow into a male tree. We plant truncheons from female trees only, because we are after the desirable marula fruit". (Endola Association).

"In the old times people did not plant marula trees like this [using truncheon cuttings]. Today, if we plant this way, most people do not think it necessary to water them. In most cases marula truncheon cuttings are left to nature. It is important though to protect them from browsing by stock or wild animals by constructing a fence of wire or thom brush. (Okahao Association).

"Marula timber is very good for carving and the branches of male trees can be cut for use as fence poles", (pers. comm. Rusta Hangula). Although not widely practiced some of the women's association reported (what appears to be) the pollarding of marula trees in northern Namibia: "On occasions the entire head of a male tree is cut off at the trunk, usually in winter/early spring. This will force the tree to produce a thick mass of new and smaller branches. Within a year or two these new branches can be cut to make ideal fence poles. Cutting a male tree like this will also cause the tree to produce more leaves and small branches. These can be used to feed our livestock. Some people even cut the big branches of female trees. This will make the tree produce more branches and more fruit." (Ongenga Association). Pierre du Plessis (CRIAA SA-DC) also reported farmers using similar pruning techniques in the Kavango Region. (Pers. comm.)

"Even though today marula is not a preferred timber, people in Owambo did, in previous times, construct their homestead or cattle kraal using the largest dried branches and trunks of male marula trees. Some farmers use marula branches to make fence poles for fields and for houses, although this is also not so common any more, with the availability of new and improved materials. The largest branches are still worked to make chairs or to make drinking troughs (Etembd) for watering livestock (Endola Association).

"Firewood from the branches of dead marula trees is widely respected. You have to be careful to dry the wood properly though because marula wood contains a lot of oil and it takes longer than usual to dry. Well cured marula branches are used for firewood." (Okahao Association)

"Chewing the small branches and swallowing the saliva can cure coughing." (Ongenga Association).

In South Africa, the (tourist) curio industry has found a unique way of dealing with a ongoing problem: The branches of marula trees are the first to suffer from attack by certain plant parasites, which gradually invade and kill the host tree. The tree responds by producing, "Woodroses,...flower-like, intricate, cancerous outgrowths...formed in response to mistletoe. Woodrose mistletoes are most often found on marula trees" (Van Wyk & Gericke, 2000, p.276). In Namibia these parasites have been widely reported to cause the death of productive marula trees. South African entrepreneurs have come up with a unique solution, suiting both their need for a cash income and their desire to
protect a valuable marula resource: By cutting off and removing branches infected with the parasite, the host tree is less likely to die and less likely to spread the disease to neighbouring healthy trees. At the same time, harvesters can collect the woodroses to sell as curios, ridding the marula tree of a problem and providing a cash income for others.

**Trunk (Efina) and Bark (Epeta)**

"When a marula tree is old or dead, if properly dried, can be used to make furniture, such as big chairs." (Endola Association).

Rodin noted how marula provides a useful, splinter-free, and easily workable wood that is the source of farm implements (drinking troughs and fence poles), carved ornaments and household items (wooden platters, spoons, stamping blocks and milk pails). The large Kwanyama drum, *ongoma*, is about 1.5 metres long and carved from one piece of wood, usually from either a male marula tree or from *omuuva*, *Pterocarpus angolensis*. (Rodin, 1985.p.25).

"The bark of living marula trees contains insects which are edible". (Ohangwena).

Women also use the bark of marula trees to produce a popular hair care product known locally as "relax", described here by the women of Tsandi:

Step 1 - bum some marula bark on a fire until it turns to ash
Step 2 - remove it from the fire and let it cool
Step 3 - make a paste from the ash by mixing it with water
Step 4 - apply it to the hair with a cloth.
Step 5 - comb your hair and then rinse it out

Relax' applied this way will straighten curly hair and give it a desirable, silver sheen. Hence the name 'relax'. "I use it all the time to get the Sade look", (pers. Comm. Tuhafeni Kafula, from Endola). (Photo 7 on page 24 shows meme Paulina Nambahu wearing 'relax' in her hair at a marula festival).

**Roots (Omidi)**

"The roots of male marula trees can be used to cure coughing. Bark from a root is chewed fresh and the saliva swallowed. Fresh roots from a marula tree can be crushed, mixed with water and fed to the goats to cure their diarrhoea". (Ohangwena Association).

According to the women of Ongenga root bark can also be used to make a traditional marula brandy called *olambika* although none of the women had any experience with it and knew nothing of the process of preparing and distilling traditional brandy using marula roots. Rodin (1985) however, does describe the process of making marula brandy,

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6 In the 1950's Marula was declared a protected tree species in South Africa because it was being over-harvested to make toilet seats, (pers. Comm. Pierre du Plessis, CRIAA SA-DC)
but he maintains that the local brandy, "the strongest of all alcoholic drinks in the north", is derived from fermenting and then distilling the fruit, not the root.

**Fresh Marula Fruit (Ongongo)**

Between January and May each year marula fruits turn a pale yellow-green and then fall from the tree. Women, children, men, livestock, birds and the remaining small mammals in the wild consume these freshly fallen fruit. And it is common to find kids and adults in towns collecting a few fruits and eating them on their way to school or the shops, or in the bush while herding stock or collecting water. According to Tonjes, of the many fruit trees used in Owanbo only 3 are eaten raw, and marula is the most prized of all (p.34)^. As well as collecting fruit to eat fresh, marula can lie on the ground for several weeks without spoiling. This allows residents to consume fresh marula fruit for around four months of the year, from January to May. Women harvesters begin processing marula into drinks and oil immediately upon harvesting.

"Marula trees drop their ripe fruit usually from January to April in Ombalantu. Inside the skins of the fruit are small caterpillars, *Nanghalingongo*, ("insects of the marula fruit"), which we eat." (Ombalantu Association).

**Processing Marula Fruit**

"The neighbour is a neck-bone" (Williams 1991, p.50).

Marula production in Owanbo is a social phenomenon. Neighbouring homesteads assist each other in this agro-forestry work. Women ask their neighbours a week or less in advance to come and help with processing, and after work the host will serve a meal with millet porridge.

Women and girls above the age of about five years are responsible for processing marula fruit into its many products. They come from the neighbourhood to work in a group together. The women first gather all the ripe fruit into a large pile under the shade of one of the marula trees they are collecting from. This pile of fruit ready for processing the women call, *etumbo*. Rusta Hangula, from the Directorate of Forestry investigating the propagation of high quality marula fruit explained, "Women sort the marula into piles according to the level of ripening", (pers. comm. Rusta Hangula). The marula fruits which are processed into *omaongo* are called "*eengholwa*". (Ohangwena Association).

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^ Rusta Hangula (Directorate of Forestry, Okahandja) emphasised that, "although marula is a prized fruit, most indigenous fruits are eaten raw". 
other hand they squeeze out the juice into a small woven basket [today women also use clay pots and plastic containers] holding perhaps 2 or 3 cups of liquid. When the basket is partly filled the woman dumps it into a clay pot... Six or eight women and their children will sit and talk and sing joyously and laugh while they squeeze out the juice." (Rodin (1985) p. 36) (See photos 8 and 9 on page 26 showing the traditional juice extraction process).

During the squeezing process the marula skins are put into a pile on one side. (The skins are often saved, and either put on fields as fertiliser or dried and stored for use in the home or on the farm. See section on Fruit Skins below for more details). The remaining marula nut and pith are piled into a second clay pot.

The two remaining raw products are now ready for processing: The first clay pot containing pure marula juice is brewed to make *omaongo*. The second clay pot containing the nut and remaining fruit pulp still attached is filled with water and left overnight to make *oshinwa*, an unfermented (or lightly fermented) marula juice - "marula-ade".

For their contribution to the marula processing the host will tell her guest workers, "Brine your marula juice here we are going to eat a cow", meaning they will be offered food and *omaongo* for their contribution (Endola Association).

**Preparing (Alcoholic) Marula Drinks (*Omaongo*)**

Rodin (1985) lists 19 fruits known to be used to make wine and concluded, "The only really popular and universally drunk wine is that made from the fruit of *Sclerocarya caffra*, a relative of the mango" (p. 36).

**Recipe for Brewing *Omaongo* (Ombalantu Association):**

Step 1 - After squeezing marula juice from the fruit into bowl. mix 1 litre of water for every 10 litres of fruit juice used.

Step 2 - Leave for 2-3 days

Step 3 - Skim foam off surface of bucket

Step 4 - Sieve remaining juice using a grass sieve into separate container

Step 5 - Feed "waste" to pigs, chickens, etc.

Some groups maintained that no water should be added to the fresh juice as this may reduce the shelf-life of the *omaongo* brew. "The squeezed marula juice is put in fermenting containers, clay pots, covered with a cloth and put in a cool, dark place. Clay pots contain yeast from the previous brews, which triggers fermentation. For 3 to 4 days it is left alone. When it's ready the foam is removed and the *omaongo* sieved so it is clear and most delicious." (Endola Association)
Photo 9. Extracting marula juice using a sharp cow horn to pierce the marula fruits leathery skin. The reed basket on the left holds fresh marula juice. Later it will be transferred to a clay pot and brewed for 1 – 3 days to make omaongo, an alcoholic fruit cider; sweeter fruit take longer to ferment. The clay pot on the right holds the remaining marula seed with juice and flesh attached. By adding water and leaving overnight the women make “oshinwa”, a non alcoholic “marula-ade” from the same fruit.

"Some omaongo brews take one day or two to ferment. Others take 3-4 days. Some take even longer. Those that take more days to ferment are said to be sweet. When we mention omaongo sweetness we mean both tongue sweetness, how it tastes, and also its intoxicating effects; it's potency. Trees producing sweet fruits, we jokingly say should be cut down because of their intoxicating potential.” (Extract from an essay by Ohangwena Association).

"The alcohol content of the 'beer' is equal to canned beer“ (Roodt 1988). As a rule of thumb, the alcohol content will be about half the sugar content which ranges from about 6-16%, with an average of about 8%. Alcohol content, therefore, is usually around 4% to 4.5% but can vary by as much as 3% to 8%. It's a strongish beer. Out of the thousands of sweet fruit tested by Professor Holtzhauzen, the highest was around 16% sugar content” (pers. comm. Pierre du Plessis, CRIAA SA-DC).

"A particularly potent brew of omaongo can be made for special occasions, like the annual marula festival. This special brew takes about 5 days to mature and because of its intoxicating effect and sour taste is always preferred when there is plenty of meat available, especially goat meat. When the brew is ready a thick foam rises to the surface. This omaongo is virtually still with little or no gas. During fermentation a distinct line forms on the surface, dividing the foam into two halves. This is why people say, "let the omaongo split". In other words, "let's make that really potent brew". (Ombalantu Association)

"At the end of the season, the very last batches of the best omaongo (the sweetest brews) are prepared differently, and stored specially for use later in the year. The last omaongo (usually end April) is placed in a big clay pot and covered with a skin/cloth. These pots are buried underground and the soil around wetted to keep it cool, like a modem fridge. It works very well, particularly as this time of year coincides with the winter months. These brews are taken and consumed just before the start of the next marula season. This omaongo will be fresh, even in December, eight months later.” (Okahao Association).

It appears that there are subtle, yet important, differences in the way women brew omaongo. It would be interesting to identify the different types of omaongo and the various methods of brewing them, as well as the natural yeast strains, as this may provide ideas for enhanced flavour, alcohol content and shelf-life for a more standardised commercial brew of omaongo in the future, or for 'special brews'. A catchy name coined by a famous Kwanyama artist springs to mind: "Marula Boom". (See photo 10, page 31).

Preparing non(low)-alcoholic Marula Juice (Oshinwa)

Recipe for Making Oshinwa (Pendapala Association):
Step 1 - Mix 20 litres of squeezed fruit (the nut with some flesh still attached) with 30-35 litres clean water
Step 2 - Leave for one night and drink
"In the morning, if it is ready, a foamy scum will appear on the surface of the juice. This scum is skimmed off the surface and filtered out using a grass sieve into a separate clean bowl. This juice is for women and children. (Okahao Association). "You can do this process twice, as the second oshinwa still tastes good" (Ondangwa Association). After using the nut with fruit attached to make oshinwa, the nuts are placed in the sun to dry. They will be cracked open later to extract the kernel and oil.

**The Marula 'Wine' Season (Ongongola, Ondala, Marula Praise Songs)**

"When the old people are young". (Victor Ueyulu).

"When the green fruit are still in the branches, we call them ongongo. When they are ripe and fall down, this time is known as ongongola, meaning that it is now the, 'marula wine season'. "It's the time when people are most healthy, they look good and feel good." (Extract from an essay by Ongangwena Association)

The marula season (typically January to April) is a time of relative plenty. People want to celebrate and give thanks, visit friends, offer gifts and catch up on gossip. Marula facilitates all these social gatherings. During the days of hard rain people do not like to work in their fields. *Omaongo*, and the many other foods and drinks originating from marula, is the ideal catalyst for merry-making. And people take full advantage of it.

"The feast starts. People eating and drinking wine, singing marula wine songs, and dancing". (Extract from an essay by Ongangwena Group). "Traditionally people gather together in a neighbour's or relative's homestead and spend the whole night drinking and partying. This get-together we call 'ondald'. The host will slaughter a goat, or even an ox, for his guests to eat free of charge. Guests may bring their own omaongo as a gift for the host. When people drink they will thank the owner and respect him. Together everyone will sing special songs in praise of the host, the omaongo they drink, the old kings, the marula tree, and to all things derived from the marula tree, they will drink. And when they finish the host will offer each guest a plate of meat to take home" (Extract from an essay by Ombalantu Association). (See photo 10 on page 31).

"We jokingly say that the ongongola season is the time when we wish that the omaongo would be finished so we can go back to drinking oshikundu, a non-alcoholic millet drink, which is consumed in much the same way Europeans drink tea. That's what people would sing if they are so satisfied after drinking omaongo; when they are totally intoxicated. These words we sing because during ongongola we Owambo do not make oshikundu. We jokingly long for it." (Extract from an essay by Ongangwena Association)

"This is traditionally a time of peace and plenty. Even today, this peace is respected. People say the marula season is the time when the old people are young. They remember that they can dance and sing. People are really happy." (pers. comm. Victor Ueyulu.

Over the years local residents have composed numerous songs about marula:
My name is Mr Marula
A tree who likes to give
A tree who likes to share
To the animal I give the skin
To the insect I give the leaf
To the woman I give the nut for her to process the oil
To the man I give marula wine so he can express himself
And a passer-by will always say, 'This is nice shelter. I can rest here and continue when the sun is low.'
I like to give to make the stranger happy

Only after participating in the marula season did I fully appreciate the pivotal role marula plays in the lives of people where it occurs. After months, often years, of drought the marula season - three or four short months of relative abundance - spawns a feeling of release, respect and gratitude in every woman, man and child. Apart from the obvious pleasure derived from the performance itself, marula songs and poems reiterate "onjudo yomoongo", ("the value of the marula tree"). Season after season of ongongola, and days and nights filled with singing, dancing, clapping, eating, visiting friends and drinking marula wine, is remembered and romanticised by participating in marula festivals and celebrations. Marula praise songs motivate us to think about all the good things on offer, about life in Owambo, of days gone by and the good times to come. It is no wonder marula is so revered: The collective spirit of these performances and the messages they contain reveal a deeper cultural core. One saturated with marula.

The spin-offs of the marula season are profound: "Because the marula season is a time of festivity it was always a popular time for traditional weddings, where young girls choose to be married. This was also the time when girls were requested to attend the King's palace and celebrate the marula season by performing traditional dances, songs and stories. Everyone would sit together in the King's olupale, the traditional reception room, one of the biggest open areas in any homestead, so guests could relax and enjoy themselves." (Extract from an essay by Okahao Association).

There are many popular marula songs performed at this time particularly at social gatherings. Here are a few of the most popular song titles, "omaongo, where do you stay all year long", "marula, come quench our thirst", and "I don't like a drunken woman". When the season is drawing to an end people perform songs like, "omaongo, go back to your village", and, "if the omaongo is finished, we will drink omalodu" (millet "tea"). (Extract from an article in The Namibian Newspaper, March 31st. 2000)

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8 This marula poem was written by Lazarus Nghiimbwasha from Oldimba village in the Ohangwena Region. From the video, 'The Forest is my Farm' (Mamokobo Video and Research/NBC, 1996). Appendix 2 includes two praise songs written by members of Eudafano Women's Co-operative.
Another unique aspect of marula culture in Owambo is that even 'non-drinkers' drink marula wine. I met many people who do not drink alcohol at all other than *omaongo* during *ongonga*, the marula wine season. Marula is seen as a real gift of nature; an almost neo-religious resource, "which should not be refused", and not dissimilar in importance to the way people revere their cattle. Even Namibia's President, Dr. Sam Nujoma, a staunch and self-proclaimed "non-drinker" gladly accepted and consumed a traditional cup of *omaongo* at the March 2000 Marula Festival held in Okahao, Omusati Region.

If marula did not exist, people would not starve. But, for four months of the year, marula permeates every aspect of people's lives; what they do and how they do it. Marula, particularly the intoxicating effects of *omaongo*, is so pervasive for the few months that it is available, that a number of unique rules and practices have evolved to 'guide' people's actions. These marula customs have, over the years, gradually been put in place by local kings and enforced by their headmen.

**Marula: For King and Country {Onghata}**

Marula has been controlled by Owambo kings and headmen for centuries. More importantly, the best marula products have traditionally been manufactured and reserved specifically for the king and his family.

"In old times *omaongo* was very important for both the owner of the tree and for the King. During the marula season, everyone would make as much *omaongo* as possible, for themselves and the King's family. If a homestead had marula trees on their land, the best *omaongo* would be taken to the King. The family, together with the headman, would choose one marula tree from their plot that would belong to the king. The family would tend it as normal. At the beginning of the marula season, omaongo produced from this tree would be carried to the local headman's homestead or directly to the king's palace as a gift." (Extract from an essay by Okahao Association)

In Britain, for example, there is a huge marketing advantage in being able to say a product is provided "by appointment", to the king. Goods and services requested by the royal family are granted special status: A commodity formally used by a monarch is granted the honour of advertising the fact, displaying the royal seal and highlighting the unique and desirable qualities of their 'royal' product.

There are many references to cattle when talking about and using marula: "eat the cow", is an expression used when going to visit a neighbours house for a marula drinking session: The game marula shells used to play the game "owel" are referred to as "cattle"; "hengobe" is a type of cow and refers to the mottled colouring on the skin of this type of fruit: Harvesters from Ohangwena noted that "trees that flower before the leaves emerge are known as," "ombulutwe", ("without horns", referring to the absence of leaves).

10 A quick glance at the websites, http://www.royal.gov.uk/yfaq/warrant.htm and http://vvvvw.byappomt.mentt(thermaj.estytheqyen.CQM will give readers an indication of the power, prestige and marketing value of using the British monarchy to sell (royal) products.
Photo 10: Kwanyama artist, John N. Muafangejo (1943-1987). Lmocut: The text reads 'Omarura ("Marula") Boom Drinking to Ovambo People. They are drunker for take more Omarura Boom'. (1987). The artist is depicting life during the 'marula season', specifically, the tradition of "ondala": Groups of friends visit a neighbour's homestead for a get-together, to drink, sing and dance the night away. During January to May each year, this scene is common in the marula-growing areas of Owambo.
Based on the personal histories of women harvesters and members of the ruling clans it is argued that the best marula products have also, for centuries, been requested "by appointment" to Owambo kings, not dissimilar to sovereign kings and queens in Europe. This specialisation and recognition can be a powerful marketing tool, not just in Namibia, but internationally too. As the women from Ohangwena explained, "Marula is for king and for countryfolk."

Both the best marula producers and the best products are well known locally. To make this point still further; of the 20-or-so omaongo brews I tasted during field work, by far the best (and most potent) was the omaongo made specially for king (Omukwaniilwd) Kauluma Eliphas of the Ondonga tribe during celebrations at his homestead, marking the formal closing of the marula season. Collectively, we celebrated by drinking the last and best brews of the year, in comfort and in style, with the king as our patron. By being there and by drinking and eating with us the king gave his countrywomen (and their goods and services) his royal blessing.

Because marula has ultimately always been controlled by royalty, it is worth looking at how Owambo kings and headmen practically 'guided' the production and consumption of marula products. In the future this may provide Owambo harvesters with a unique marketing edge over other potential marula producers (in southern Africa, as well as future producers like Israel), whose marula culture is either non-existent, less well defined or poorly understood.

"In the past every homestead owner would know that the first batch of omaongo and oshinwa must be contributed to the royal family. The King would send his subordinates to collect the first juice from each house in the community. The Owambo kings instated a regulation that no one from any village should drink omaongo without his permission. If found out they would be killed. It was the job of the junior and senior headman to enforce these rules and report any insubordinations. At a certain date each year, announced by the Senior Headman, all residents ofOmbalantu are invited to a party of drinking, where the first omaongo is consumed in the King's homestead. A lot of meat is prepared and eaten free of charge. On the day of the feast, selected women from different villages are tasked to cook food and each must bring a calabash full of sorghum beer (omalodu) as a contribution to the feast." (Extract from an essay by Pendapala Association).

"In the past, when people wanted to begin drinking omaongo for the first time in the season they would journey to the Kings homestead or to the home of the village headman saying they are going to, "chew the charcoal" ("omundilo woshilongo"). which meant they wanted to pay respects to their ancestors and the nation/tribe. The first omaongo of the season would always be drunk at the headman or the king's homestead, nowhere else. It was here that the regulations would be put in place for the marula season. This is the time when people were told that it is now prohibited to carry weapons. After this ceremony people could then drink omaongo wherever and whenever they wished. And due to the sensitive nature of the marula season anyone committing a crime would be prosecuted after the marula season had ended, when the traditional courts reopened." (Extract from an essay by Endola Association).
Victor Ueyulu, chairperson of the Oukwanyama Traditional Authority (Ohangwena Region), explained further how the marula season was traditionally marked by "onghata", referring to, "the time of no weapons": "When the king officially opens the marula season with the marula festival (the same time that the first omaongo is presented to him by his subjects), from this day, no weapon can be carried by any person. This year onghata was from, if I remember correctly, 13th February to March 10th, 2001. In the old times if a person was caught carrying even a panga during onghata, even if it is meant for cutting some branches, he or she will be fined one ox. This rule did not apply to those living far away on the cattle posts (ohambo) or to those defending themselves from attack. Even today, if a person is convicted of 'spilling blood' during the official marula season, whatever punishment is deemed appropriate by the traditional court for the rest of the year, would have to be doubled because the offence took place during "the time of no weapons". For example, a person found guilty of spilling blood will normally be fined two head of cattle. If this same person has cut someone during the marula season he will be fined the normal two head of cattle plus an extra two, in punishment for contravening onghata, the marula law. (Victor Ueyulu, Senior Headman of Oukwanyama, pers. comm.)

"And if the King heard that somebody in his area had marula but did not give a donation of omaongo to the King's homestead, the King would send his servants to chase that owner and his family out of the village. The King will be so angry that the owner is not using his marula trees properly that he will take all his cattle and small stock, and give that plot of land to another owner". (Extract from an essay by Okahao Association)

All the women (and men) spoken to during field work emphasised the importance of marula as a resource ultimately controlled by the king and headmen. This aspect is touched on in more detail in the section, 'Traditional Rules and Formal Legislation', where, it is argued, Owambo Kings and traditional leaders have historically used marula to control their subjects by creating an array of rules and rituals around the marula resource.

In a real sense this marula culture is one of the last remaining aspects of a deeper Owambo culture. As Robert Rodin (1985) noted, because there was no longer a divine king in Oukwanyama, (the last king was killed in 1917) many rites and rituals associated with the divine kings (traditional weddings, tending the sacred fire, keeping the sacred stone, the practices of traditional doctors, maintaining divine laws, polygyny, etc.) have gradually died out. "These have been replaced to some degree by Christian rituals". Rodin noted far fewer occasions for group participation and cultural expression in Owamboland in 1973 compared with his first trip in 1947, although he specifically mentions that, "women still gather from several kraals when ripe fruit falls from the marula tree, and they sit around squeezing out juice which they collect in large clay pots for marula wine. They also gather in groups in a kraal to drink the wine the next day. These are times for gossip and socialising." (Rodin, p.22). With the outlawing of apartheid since Independence in 1990 and the concomitant freeing up of society, some

"Owambo society is now predominantly Christian. My own estimate is that at least 90% of the Kwanyama-speaking people are at least nominal Christians." (Rodin, 1985, p. 22)
aspects of a marula culture have been revived. This 'Owambo marula culture' can be tapped to create a unique and powerful marketing image in order to advertise their budding marula industry. For example, 'This year we had our marula festival on 24th March, 2001. It's a big music and cultural event too". (Okahao Association). Just as the highly successful Amarula Cream marketing campaign draws heavily on the notion of an African experience - elephants consuming the wild fruits of the African plains - so too local women, through their rich marula culture so full of royal song, dance and story-telling, can help promote their own marula industry.

**Changing Patterns of Consumption: From Gift to Commodity**

"To give is to keep". (Kwanyama riddle. Hango-Rummukainen (1991) p.71)

"Marula has traditionally been consumed by the household or given as a gift. Oshinwa is traditionally for women and children as it is non-alcoholic. It has always been produced in the home with ease, and it's free of charge and very good for you. oshinwa is for the family. It is never sold." (Ombalantu Association)

"Until recently women and children were drinking unfermented marula juice. Omaongo was reserved for our married men, over about the age of 30. Traditionally a special calabash-ladle is used to pour omaongo and a special cup is reserved for drinking marula wine, called "eholo". But these modern times have seen a change. People sell their marula in plastic and glass containers. Even the quality of drinks has changed. And women are free to drink omaongo. Sometimes you even see men and women drinking together." (Ongenga Association).

This section argues that, until very recently - until the mid-1990's - marula was valued primarily as a subsistence crop. Marula was always considered unique in that, even though the tree has multiple practical and cultural uses in the household, on the farm and in kingly rituals, it was never seen as a means of making cash incomes. Even Kreike, working in owamboland during the early-mid nineties, surmised, "marula fruit is most intriguing—since unlike the fruit of other trees - it is not really commodified. Marula fruit is fermented into wine in the rainy season, but it is rarely sold. In former days it was shared with local headmen, and even today it is shared with neighbours, friends and the local headmen on a voluntary basis." (Kreike (1995) p.48).

"In older times special juice and the best brews were reserved for the King and his headmen. Not now though. They are for anyone; because of need for cash incomes and the erosion of power of the king and the headmen." (Extract from an essay by the Endola Association)

Although attempts have been made on several occasions by private businesses and colonial governments to commercialise marula in Namibia it is only in the last five years or so that a local marula industry has developed in Owambo. And there is no question that most people continue to perceive marula as, first and foremost, a subsistence crop. But people's practices and perceptions are changing; Many women harvesters now
double as primary producers of marula for the household and as hawkers in the marketplace. Most will, at least, employ a daughter, niece or neighbour to do the actual selling on their behalf, usually in the local village or town market. And with the formalisation of Eudafano Women’s Co-operative in October 1999, there are now a growing number of possibilities for women to export their marula products more widely in Namibia as well as overseas.

These recent changes - over the last five years or so - have affected the way people consume marula in the household too. As the women from Ondangwa clearly stated (refer to page 1), until they recently embarked on a business partnership with CRIAA SA-DC and their partners, they were unaware of the high market value of marula kernels. Until about three years ago they were even feeding surplus marula kernels to their pigs and chickens. Similarly, other marula products - whether it be marula drinks, marula oil or any other part of the tree - are now much more sought after by consumers residing outside the homestead and the Owambo region.

In terms of recent changes in patterns of consumption, the added advantage of many marula products is their ability to be processed and stored for use later in the year. It is just the non-alcoholic beverage, oshinwa, "which goes sour within a few days, so it is always consumed quickly". (Ombalantu Association). This natural shelf-life of the most common marula products enables their relatively easy storage, transport and sale in other destinations outside the homestead. More importantly, women can store them for sale or consumption later in the year. It should be remembered that most women are aware of post-harvest techniques to ensure that the original quality of their drinks and oil is maintained. This aspect of supplying quality marula products to different markets throughout the year is one of the fundamental goals of Eudafano Women's Co-operative. It would be pertinent to conduct more detailed research into exactly which indigenous methods women use to extend the shelf-life of their products, whilst maintaining the original and 'natural' quality.

It is common knowledge that until recently it was only men who consumed marula wine; The drinking of marula wine has traditionally been the domain of the men. (And in a larger sense that of the King and his headmen). Today, all adults and a lot of teenagers have the right to buy, sell, and consume marula wine. This is why, "each and every person will look forward to the marula season. There are many parties and people visit each other. And because omaongo is so common at this time of year you are always welcome in another person's house." (Okahao Association). In a rural landscape where people still live in traditional homesteads physically apart from one other - homesteads are typically 500m to two kilometres distant and fenced off from each other - marula provides the context for closer ties, as it is freely available and socially inclusive. This day-to-day pattern of ondala - visiting neighbours for a get-together - is still common during the marula season. It is also noticeable that although women today do participate in drinking sessions, it is the men who remain the primary consumers.

Table 1 on pages 85-86 provides a summary of different marula products and how they are most commonly consumed today; either sold, given as gifts or primarily consumed in
the household. And Table 2 on page 87 lists the typical market price for marula products sold by Eudafano members in open markets in northern and central Namibia.

The CRIAA SA-DC Marula Fruit Press

A newly designed CRIAA SA-DC fruit press was introduced to each of the nine village associations during the 2000-2001 fruiting season to improve juice production. Although it is too early to gauge its full impact in the lives of women harvesters by improving fruit juice extraction, it is worth noting some of the women's initial observations and opinions.

Photo 11 on page 43 shows the Tsandi group with their CRIAA SA-DC press. The whole fruit is washed, placed in a perforated cylinder and squeezed using a hydraulic press. (Its design is based loosely on a French wine press). After extracting the marula juice the remaining mash of skins, pulp and nuts are put to one side. Separating the skins and the kernel from the pulp to make oshinwa, omaongo and marula oil must still be performed by hand at a later date. According to the women, when using the press, the production of oshinwa may become less common as it will have to be done manually. The women mentioned that they will mix the pressed fruit with water, leave it overnight, "but the skins will give it a sour taste". (Endola Association).

During demonstrations all machine operators were men. Perhaps the processing of marula using the CRIAA SA-DC press will become a male-dominated task. New innovations and new markets will most likely open up the 'traditional' division of labour as well as change the types and quality of products produced. "We will appoint someone to be responsible for the press. It could be a man or a woman." (Okahao Association). Although they had identified a few minor technical faults, the women were very happy with the press and were not at all perturbed when I suggested that the processing of marula using the press could become the principal job of a man. The improved production rate for higher cash sales is certainly the overriding factor in the women's decisions and opinions.

In terms of marula juice yield, "much more juice is produced using the press. And the juice from the press is cleaner with less sand." And unlike the group from Endola (see above) they stated that, "It tastes the same as the traditional processing method. The press is a great idea. Traditionally, the time of marula fruit can be a time of labour shortage. Some people are busy in their arable fields, weeding and planting. So a lot of fruit is left beneath the tree to dry or rot. With the new press we can use all available fruit. It is very heavy though, so transporting it is a problem." During a demonstration the women of Okahao produced 12 litres of juice from 3 x 20 litres buckets of whole fruit. From 5 x 20 litre buckets of fruit they produced 20 litres of juice. The women were happy with this production rate as, "these are the last fruit of the season, from a tree that has already produced its best fruit. Considering these fruit are a bit dry it's a good amount of juice. Next year we will test the young fruit as they are even juicier. We predict that next year we will produce even more juice using this press". (Okahao Association).
Other Uses of Omaongo and Oshinwa

"There is one thing about marula that is particularly respected in Ombalantu culture: omaongo is used as a prophylactic against malaria. At the beginning of the marula season, after the king has given permission for us to begin drinking omaongo, every homestead owner throughout the land will take a small wooden tankard (eholo) and give a little omaongo to each and every member of his homestead, including women and children. Omaongo is considered an effective vaccine against malaria and is given at this time (January) before the onset of the malaria season." (Extract from an essay by Ombalantu Association).

"The foam produced by making marula juice and brewing marula wine can be used to cure wounds produced by ticks on dogs. The foam is applied directly to the open wound."

(Ohangwena Association).

"The fresh marula juice - before it is brewed to make omaongo - can be used in other ways: it can be applied to external wounds and to cure problems such as skin rashes and boils, and it can be used in cooking. For example, our wild spinach {evandd} tastes nice when cooked with fresh marula juice". (Ongenga Association).

Rodin (1985) reports the manufacture of "olambika" a fruit brandy made from numerous indigenous fruits including the marula. During this study women harvesters had no experience producing marula brandy.

One of the most obvious indicators of cultural diversity (along with dress, music, language, religion etc.) is the types of foods consumed and the rituals and ceremonies associated with these foods. At the centre of Owambo cultural life are some key food resources: cattle, grain and fruit (as well as fish in years of exceptional floodwaters from Angola). Changes in people's tastes have come about as a result of exposure to outside cultures and markets. It is estimated that as many as 100,000 Namibians were in exile immediately prior to Independence (United Nations. 1987).

Most of these individuals originated from the Owambo region. Whilst in foreign lands they experienced new types of food and culinary skills. And today more people continue to travel and live in other parts of Namibia and the globe. As a result marula is used in a growing number of recipes drawing on new ingredients and new methods of preparation. (See also some of the most common marula recipes in appendix 2). A young Owambo entrepreneur living in Ongwediva has started a catering service selling local dishes with an international flavour. Some of the dishes and recipes she prepared for a 'marula platter' are shown in the photos at the end of this report.

Staff from the Directorate of Forestry office in Ongwediva in central Owambo also mentioned how a young man born and bred in the Kavango Region, (which traditionally is a part of Namibia without any history of cooking with marula), "uses the entire fruit and nut to make many different things". Today this man has a flourishing local marula business respected by even the most sceptical Owambo marula connoisseur.
Tree-Naming

On her farm near Ondobe, meme Shaimemanya took me to one of the 10-or so marula trees growing on her farm. Beneath the tree was a carpet of yellow fruits. She stooped down, picked one up and beckoned me over. For my education she slowly broke the skin with her nail, sucked out the juice, and smacked her lips theatrically. I took one she offered me and did the same. It was delicious. Very sweet and aromatic and full of juice. I told her so and ate some more to prove my point. She smiled proudly.

On the front cover of this report is a picture of meme Shaimemanya standing in front of her favourite marula tree. In her outstretched palm she is offering us some of her "special" marula fruit. This tree is of special significance in her life because the fruit is special. It is sweet and the fruit are juicy. The tree is large and produces plenty of shade. The tree's name is Nakale, literally, "tall".

Name-giving - whether to a person, a cow or a tree - is an important part of life. It reveals, and helps explain, people's close relationship with each other and their environment. It is common for women to care for and name their most valuable marula trees. And when meme Shaimemanya gave Nakale its name, she 'officially' laid claim to it, bringing it in one act into her care and into the family. As the women explained. "Something with a name is closely tied to the person who named it". (Endola Association).

By understanding a little about tree-naming we begin to understand more about the practical and cultural significance of marula. Some of the tree names can be translated directly, others are like riddles or poetry, requiring a deeper linguistic and cultural understanding of Ovambo lifestyles, particularly people's relationship with their marula resource. Sometimes the women play with the meaning; where an identical name can mean different things to different tree owners. (It must also be remembered that the many dialects of Oshiwambo give rise to different spellings and/or meanings to a similar name).

After sampling meme Shaimemanya's special fruit I asked the women of each group to give examples of the names they have given to their favourite marula trees. When translated, the women explained, some names describe the shape, colour or size of the tree. Most of them, however, describe the quality and quantity of fruit and nut, (not without a hint of humour): "Because different marula trees provide different omaongo tastes, people give their marula trees names, derived from the taste of the omaongo." (Endola). In Ohangwena, just 10-15 kilometres from Ondobe, meme Ndahafa Kakonda also has given one of her trees the name Nakale, but this name has a different translation from meme Shaimemanya's tree: "Marula trees are given different names according to the intoxicating potential of the fruit. Nakale' means, 'hit him in the seat of his pants', or 'do not let him stand'. What we really mean is that if a person drinks omaongo made from Nakale he or she will be unable to stand up to go outside. And if they do manage to get up and proceed to urinate, they may well fall down in the place where they're taking a leak, just for drinking two tankards. Marula wine is for men and that is why some marula
trees have names like 'Nadeelenge', which means that if a man wants to urinate, he will be so drunk he will forget to zip up his trousers and women will see his private parts”. (Extract from an essay by Ohangwena Association).

Of all the women attending group discussions, approximately one half have given at least one of the trees in their fields a name. For example, of the 40 women attending a group discussion in Endola, 20 have given a name to one or more of their trees, "because of the positive benefit of the tree". Of the 45 women present in the Ongenga group, 21 have given marula trees names; "If a tree is important we give it a name because it produces good nuts and sweet juice". They also explained that this is not always the case; "Two other women in Ongenga also have special trees but they have not given these trees a name." In Ohangwena, 6 of the 9 women present have named trees. And in Ondobe, 11 of the 17 women have given names to their own trees. Esther Haupindi, also of Ondobe, explained how she has given names to the trees she uses in her neighbours fields because she has none in her own fields and because she is the one looking after these trees.

Below is a list of some of the names given to marula trees by the women harvesters. This is a selection of names from different associations, as well as the names of a few specific women harvesters whose marula trees are particularly well known:

**Endola Association:**

- **Nashimbwaluke** "let it explode"
- **Shaendashapya** "when the fruit is squeezed it is already sour"
- **Shilulu** "bitterness"
- **Kapewamuyeni** "not given to strangers"
- **Leketeta** "lift the skirt"
- **Nadeelenge** "let them roll"
- **Naitetayalekwa** "lifted skirts"
- **Nameya** "watery"

**Julia Kautondokwa from Endola Association:**

- **Namesho** "Big eyes"
- **Namai** "Big eggs... "because the fruit is big and shaped like an egg. All the people in Endola like my trees because they are easy to process giving lots of tasty juice"

**Aili Nghishoongele from Endola Association:**

- **Kapewamuyeni** "Don't give just to anybody because it is so sweet [omaongo]"
- **Nakapale** "Produces lots of fruit" [probably named because it grows on/in the vicinity of the threshing floor: oshipale, okapale]

**Lusia Hamunyanyo from Endola Association:**

- **Ngobe ilaula** "Black cow fruit" [This type of fruit was mentioned and shown to me on different occasions and referred to as "special, because it's so sweet": This fruit derives its name from the colour of the marula skin. It is unusual because it is green when ripe (as opposed to yellow), with black blotches "like the skin of a cow").
Naiteta yalekwa  "If a woman drinks this one she won't even look after her skirt"
   (i.e. very sweet and producing a particularly intoxicating omaongo;
   "women get drunk quickly"

Karolina Nendongo of Endola Association:
Kambuta  "Named after a headman, Kambuta, who presided over this area in
   the 1930's. The marula from this tree was served to the King, after
   which he could not hold court, the drinks were so strong."

Okahao Association:
Shilulu  "sour"
Namulyo  "sweet"
Mapola  "between the fields"
Nakale  "tall"

Ongenga Association:
Nakale  "tall providing large shade area"
Naithau  "its juice does not taste good"

Ondobe Association:
Kaleke  "very sweet"
Nangudi  "from a branch will come a fence pole to bring us more fruit"

Amelia Shikolo of Ondobe Association:
Kelishivi  "go and invite the people to come", i.e. produces lots of fruit Puyeipawa Samuel
   of Ondobe Association:
Namesho  "big eyes" Namidi
   "a new tree growing from the root of a ploughed up marula tree"

Ohangwena:
Namesho  "big eyes" (meme Miriam Kautwima)
Eti   "producing bad juice. We can use the nut but not the juice".
Nakale  "Tall" (meme Ndahafa Kakonda)

Apart from emphasizing the close relationship between women harvesters and their marula
resource, tree-naming could provide a useful indicator when trying to identify desirable fruit trees
for propagation trials. It will also help strengthen individual's ownership claims for 'cultivars'
which may be selected for propagation in the future.

Fruit Skins (Oipetd)

During the processing of the fruit, skins are collected in a separate pile. According to all the
women spoken to, marula skins provide a nutritious supplement for livestock, and especially
favoured by goats. Moreover, skins can be collected and stored as a fodder bank. As well, when
mixed with the topsoil, a manure of marula fruit skins can be used to make fertiliser for arable
plots. Skins can also be used by people to deter mosquitoes. "The smoke from dried skins
smoulders nicely. In the evenings we put a few on the fire to kill and deter mosquitoes, just like
modern mosquito coils". (Ongenga Association).
"In recent years some people have learned to use the fresh skins to make jams and jellies." (Ohangwena Association)

"When people finish extracting the juice the skin is sometimes discarded at the base of the tree where the fruit came from, with the belief that next year the same tree will provide them with good fruit once again." (Endola Association).

**Marula Nuts (Oshingokoto)**

Marula gets its name, "Sclerocarya", from the Greek, "sclero", meaning "hard", and "carya", meaning "nut". It's a good description; marula has one very hard nut inside each fruit.

**Extracting the Kernel (Okutongond)**

Marula fruits produce a single nut with usually three (sometimes one or two) separate compartments. Each compartment contains a small kernel which is extracted by "cutting the face off, or chopping the head off the nut, using a short wooden pole and an upturned axe-blade. (See photo 12 on page 43). Considerable practice is required to crack open the hard nut to extract the kernels. Girls start to learn this skill when they reach about five years.

It took a particularly industrious ancestor to devise this technique now commonly employed to crack open the hard shell. According to the women they have been using the same iron-age technology for centuries. Before the arrival of the first traders, missionaries or foreign armies, Kwanyama blacksmiths smelted special, pointed picking tools, called oluvela, for their women. The process of extracting the kernel with an oluvela is called okutongona. These days women produce a similar tool by pounding a 10-centimetre building nail until it is flattened and curved slightly.

Women select the fruit with nuts producing the most kernel. Selection of the best nuts for decorticication is not easy. It is not simply about selecting the largest nuts. Rusta Hangula from the Directorate of Forestry explained. "A desirable marula fruit will be one which is easier to decorticicate than the average fruit. A good example are the marula nuts producing one kernel inside. Usually a nut will have three small kernels, each separated by hard shell, making it time consuming to decorticicate. A nut with a single seed is relatively quick to extract using the oluvela". (pers. comm. Rusta Hangula). "Kernels of marula fruit which have been used in the production of omaongo and oshinwa are said to be better than the "omapu" fruit; those which have been left on the ground and collected late in the season when the fruit has dried out." (Extract from an essay by Ohangwena Association).

The supply of marula kernel is the principal function of Eudafano Women's Cooperative. Although it is undeniably finicky and laborious, women continue to decorticicate marula in the same way as their foremothers. Even with new export markets requiring large volumes of kernel, women maintain this is a method well-suited to their own needs:
it is familiar, it allows them to work from home, at their own pace and in their own time and with neighbours and tools they can rely on. There is no question of its inefficiency in terms woman-hours per kilogram of kernel extracted, but no one has yet come up with a better decorticating technology. Investigating new methods of extracting the kernel mechanically is one aspect of the marula industry mentioned to me on numerous occasions. The women's motive for developing new technologies in general is to allow them to increase output and procure higher profits. This desire needs to be balanced with the real likelihood of powerful entrepreneurs seizing control of the kernel supply and/or flooding the market and depressing prices.

**Fresh Kernel (Omaxuku)**

The decorticated kernel is called *omaxuku* and can be eaten raw as a tasty snack, using the *oluvela* - "the picking tool". With an oil content of more than 50 per cent, and a high protein and iodine content (a scarce trace element in dryland regions such as Namibia) nuts are a nutritious and tasty snack, eaten raw or roasted. "To improve the flavour, nuts can be lightly roasted directly on a small fire of grass, or the woven basket holding the kernel put in the sun, or a little hot ash placed under a clay bowl to produce a lot of oil." (Endola) "If you feel hungry, take some nuts, stamp them, add luke warm water and some salt and start eating. We call this *shitapako.*" (Ohangwena).

"If someone is suffering from bums, marula nuts are chewed and placed on the wound. In a short time the wound will heal. Uncooked nuts can also cure babies suffering from painful or swollen eyes. Mothers take a small handful of nuts and chew them forming a paste in the mouth. Using the tip of their tonge a mother puts marula nut paste onto the eyes of her baby." (Extract from an essay by Ongenga Association).

A popular condiment or sauce is made by cooking fresh kernels. "*Omwayi wokayongotT\ a "sauce made from marula nuts", is added to the main ingredient such as meat, chicken, or dried wild spinach to make *oshivelelwe* (the 'main dish'). Fresh kernel is mixed with water and heated to give tasty sauce (*pmwayi*), then poured onto millet porridge (*pshifima*) and eaten with the hand. *Omwayi* is a basic ingredient, like butter, which today is added to a growing range of local and imported foodstuffs.

More commonly though, marula kernel is crushed and processed further to make a fine multi-purpose vegetable oil, called *odjove*. In the following section the main uses of marula oil are discussed. It should be noted that the properties of marula kernels are not so different from the properties of the oil; not suprising since the oil is derived from the same nut. Much of their chemical and physical properties will be the same, and that's why you will notice a clear overlap in the uses of marula kernels and the oil; they are similar products in a different form. CRIAA SA-DC and their research partners have studied the chemical and physical properties of marula oil intensively over the last few years. The marketing value of marula oil, both as a cosmetic and as a speciality industrial oil is clearly recognised. (For more information contact the CRIAA SA-DC office in Windhoek, Namibia). This study though focuses on the local uses of marula oil and not its immediate and potential industrial and cosmetic applications).
Photo 11: *The CRIAA SA-DC marula juice press, Tsandi Association. Introduced during the 200-2001 marula fruiting season to improve juice production, the press has been well received by Eudafano members.*

Photo 12: *Extracting marula kernel using the same iron-age technology their forefathers have used for centuries. From the age of about 5 girls learn to crack the hard marula nut by using a wooden pole to strike a single nut held onto an upturned axe-blade. Designing a decorticating machine to improve this traditional method is a top priority of Eudafano Women’s Co-operative*

### Making Marula Oil (Okuyengd)

The oil extraction process is explained by the women's groups and photos 13 and 14 on page 46 show women harvester's cracking the nuts and extracting the oil:

#### Stage 1: 'Cold' Pressing the Oil:

**Step 1** - Pour fresh 500-1000 grams of kernel (*omaxuku*) into a pestle (the same stamping gourd, sunken into the ground, used for crushing grain). Stamp them well with a mortar.

**Step 2** - Add a little cold/luke warm water (half/one cup). Some women add a little salt too. Keep stamping.

**Step 3** - Before the kernels produce oil some women may remove the half-crushed kernel and place it in "etitif" ("a shallow clay pot") in order to start eating immediately. This stage is called, "shitapako tashiningi omaadi" ("take it out before it produces oil"). Women will call people from nearby in the homestead, especially children, to come and taste a bit of the partially refined kernel. (Ohangwena Association).

**Step 4** - Usually the kernel is left in the pestle until oil is produced: "At the right time"* women begin to shape the crushed kernel with the mortar. With a [skilful] twisting of the wrists women roll the mash of crushed kernels around the base of the pestle until it forms a nut sausage shape. At this time "you see the oil coming out".

**Step 5** - Remove the leftover nut sausage (*edi*).

**Step 6** - Scoop out the marula oil from the bottom of the stamping gourd and store in a clay pot in a cool, dry place.

"After the marula nuts (*omaxuku*) have been crushed to extract the oil, the remaining kernel (the nut sausage or *edi*) is saved for use as oil-based flavouring in many types of food. The *edi* can be added to almost anything to make *omwelelo*, the general name for sauce or soup (literally, "condiment"). The *edi* is also tasty on its own, and is flavoured with some salt to make *oshidjenene*. Old people and kids especially, like the *edi* to eat. It's very rich and tasty. It is a also useful by-product because it can be used to make sweets or dried and stored for use later in the year. And some people used to make polish and soap using the *edi." (Extracts from essays by Okahao and Ohangwena Associations). (See also photos13 and 14 on page 47 below).

This is the first stage of making marula oil, separating the *odjove* (marula oil) from the *edi* (crushed kernel, or "nut sausage"). What we have now is raw marula oil. In most cases the women continue with processing to make a cooked marula oil.

#### Stage 2: 'Curing' Oil by Cooking:

In "epata", the kitchen, *odjove* is heated in a clay pot until a white foam forms on the surface, which quickly turns brown in colour. "At the right time", the smell and taste will change too. Once cooled it is ready to eat. Usually a batch of oil is made and stored in a cool, dark, dry place.
ready for use later in the year. The raw marula oil is heated, but it is important not to boil it, in order to preserve it. If it is not heated the raw marula oil may be 'sour' in a few weeks or days. "If it is heated correctly its natural flavour will be kept and it will last six months or more". (Extract from an essay by Okahao Association).
Good quality *omango* (alcoholic drink) is primarily dependent on the quality of fruit used; the sweeter the fruit the better quality of the drink. Quality marula oil on the other hand, is most dependent on the person making it, and is not so dependent on the original source of nuts: "A few degrees centigrade or a few minutes (over-)cooking makes a big difference in taste and smell as well as the shelf-life of the oil." (Pers. comm. Rusta Hangula, Directorate of Forestry).

The curing process is important not just to improve taste but also because it allows the nutritious vegetable oil to be stored for consumption later in the dry season. The stable nature of marula oil makes it an ideal resource to help alleviate times of hardship. So, even though marula is most commonly associated with the healthy season and times of relative abundance and plenty, marula has the additional value of being preserved during the dry season, potentially exploited as a nutritious supplement during times of hardship.

**Uses of Raw and Cooked Marula Oil (Qdjove)**

Marula oil today is still considered a luxury (indigenous) oil and is added to a wide variety of traditional (and modern) recipes. It is a key ingredient in a growing number of dishes to add a nutritious, rich nutty flavour and a smooth, buttery texture to foods. There are two basic types of marula oil; one cooked and one raw. Raw marula oil is less common as it lasts for a few days only. The raw oil is preferred when used as a topical application and to prevent minor ailments and is produced in much smaller quantities. Raw oil also has some specialist applications with traditional healers. Cooked oil (usually with salt added) is the most common and most preferred because of the taste and because it can be stored and used throughout the year.

**Cooking with Marula Oil and some Recipes**

Women and their families cherish marula oil for its taste and multiple uses in cooking, from sauces and tasty sweets to basting and flavouring vegetables and meats, the nuts and oil of marula have potential for numerous culinary applications.

A few of the most common local recipes are included in appendix 2 on pages 77-80. This aspect of traditional as well as more modern uses of marula oil in cooking requires more intensive research. There could well be some interesting and potentially marketable culinary applications for marula oil in formal markets, especially overseas. And with the modern trend of "natural", "healthy" vegetable oils there is potential for the supply of a "women's", "indigenous" marula oil to these high value markets.

**The Consumption, Gift-Giving & Sale of Marula Kernel and Oil**

Until recently, virtually all marula kernel and oil was given to honoured guests or consumed by family members within the household. Although marula oil is now being sold to generate income marula oil remains an important gift for friends, neighbours and honoured guests, particularly on special occasions and during important ceremonies such as births and weddings.
"One of the most prized gifts you can possibly receive is a batch of marula oil" (Endola). A significant quantity of marula oil is given away as gifts to relatives and friends. Many women said this is becoming more important as family members and friends leave their rural setting in northern Namibia to work in towns in other parts of Ovambo as well as further afield in central and southern Namibia. As a staple luxury (is this too oxymoronic?) there is a huge demand for all marula products, drinks and oil being the principle consumables. Families with marula trees understand the importance of family and friends being able to taste the marula fruits of the north and oblige by sending large quantities. According to the women these are not often sold but given as gifts. Working family member's will try to reciprocate by sending back cash and goods in an informal exchange.

During field work for this study I never saw marula oil being sold in local markets, although some women in the different groups stated that they did, on occasions, sell marula oil in local markets usually to cover immediate cash needs such as school fees. And Pierre du Plessis, working with CRIAA SA-DC, mentioned that he has seen marula oil being sold quite often in local street markets (Omatala). I only ever saw omaxuku (raw kernel) being sold at one market - the 2000 Ongwediva Trade Fair - where a woman was selling both marula oil and kernel, as well as other traditional foods such as wild spinach (Evanda), wild truffles, mopane worms, and alike.

Table 2 summarises the types of marula products sold by women and the different prices fetched in markets in the north and in Windhoek.

Recently marula kernel has been sold to CRIAA SA-DC through the Eudafano Women's Co-operative directly for cash. The remainder is consumed in the home, given to friends and family, offered to honoured guests, or used in traditional weddings and other ceremonies.

Over the last two-three years members of Eudafano are acting as middle-men for other members of their community who need cash but are not official members of Eudafano Women's Co-operative. Harvesters stash surplus kernel until CRIAA SA-DC project is in a position to buy. In some instances women mentioned how they buy kernel from neighbours for a low price and then sell to CRIAA SA-DC project, providing additional profit for some. (Ohangwena Association). CRIAA SA-DC and Eudafano effectively control the price of marula products and membership to the women's co-operative. This is significant not least because the project is heavily supported with public funding, (pers. comm. Pierre du Plessis, CRIAA SA-DC).

**Marula Oil for Health and Beauty**

Past studies of marula use in southern Africa reveal a long history of using marula oil as a body lotion. "The Tsonga people of South Africa and Mozambique use the oil for cooking and as a moisturiser for women and as a baby oil." (Patrick Ndlovu, pers. comm. Quoted in van Wyk &
Gericke, 2000, p.24). "The nut kernels can be boiled until an oily residue forms, which is rich in protein and iodine. This substance has been commercially used as moisturiser and is marketed in Madagascar, where it is known as Sokoa oil. Also
research has been carried out to check whether the oily residue of Marula could be marketed as a sunscreen". (Roodt 1988). And the Venda living in South Africa have traditionally used marula oil and marula kernels to preserve meat for up to six months. (Palmer and Pitman 1972, Peters 1988, Holtzhausen 1993).

Many vegetable oils are traditionally extracted from plants in Ovambo for use as a skin moisturiser. "Odjove was used as a moisturising lotion by women and applied to the whole body". (Ongenga Association). Melon-seed oil is the most widely used today because melon species are grown in abundance in people's fields. (Pers. comm. Pierre du Plessis, CRIAA SA-DC). In areas where marula trees grow abundantly though odjove is used more frequently and in a wider range of applications.

"In Ongandjera, we no longer use marula oil for a bride at her wedding. We were told it is bad for the skin and can even cause leprosy. This is what the missionaries told us. We used to do it, now we use melon seed oil. We are not sure if this is a lie!" (Tsandi Association). "Most people no longer use marula oil as a lotion because we do not want to waste our food. Instead we are using the oil from melon seeds and from Manketti nuts. These days we sell our marula oil to CRIAA SA-DC. We do not sell it to anyone else. In the old days we sold marula oil in the markets to get money for food and school kids fees, but not any more." (Extract from an essay by Okahao Association).

In past times oil was used only by women who applied it to their whole body as a moisturising lotion. According to most women working with Eudafano Women's Cooperative they do not know of anyone personally using marula oil in beauty products today. According to the women of Ondobe Association in Ohangwena Region they have heard from others, and had the experience themselves, that marula oil applied to the body can cause "skin irritation, spots on the body and a rash". They explained that some people suffer from an allergy when marula oil is put on their bodies. Some women mentioned that skin problems arise when the whole fruit is left in the sun to dry (when "omapu" fruits are used) which are collected late in the season to produce odjove: "There is something in the skin of marula fruit which, if it gets into the kernel, is harmful to the skin of humans“. (Ongenga Association). On the other hand many women emphasised the healing properties of raw marula oil in treating skin problems: "Fresh marula oil without salt can be used to cure a rash." (Ohangwena Association). There is no doubt that cold pressed marula oil does have powerful and beneficial properties as a skin moisturiser (CRIAA SA-DC). It is not clear though, whether the skin problems experienced by women who use marula oil is a result of 1) a successful campaign by the early missionaries to stop women using so-called "pagan" body oils in rituals and rites of passage (see section below on 'Traditional and Cultural Importance of Marula Oil"), or 2) whether women are using the wrong types of fruit, especially the dried out, "omapu", fruit, or 3) whether the processing of the marula oil requires special techniques and skills now forgotten and practised by only a few skilled women. This aspect - of the correct process of producing a indigenous body oil derived from marula - could be a useful research project, linking directly in to the ongoing research and marketing programmes, Understanding more about local cold press methods and processing of marula oil into a
body lotion would enhance the knowledge base of the ongoing marula oil export project currently being managed by Eudafano Women’s Co-operative and CRIAA SA-DC.

Although some women mentioned that marula oil irritates the skin, others disagreed stating that, "Marula oil can be used to clean necklaces. And you can mix marula oil with oshifima (millet porridge) and use it as a body scrub and a skin exfoliant. It makes your skin shine". (Okahao Association).

"In the old times women did not use water to clean themselves but used only marula oil. (We also used cattle and pig fat too). Some of us still use the pure marula oil (with no salt added) on our bodies." (Tsandi Association).

Raw marula oil in particular has been used in numerous traditional medicines and healing rituals: "Traditional healers in the past and today use marula raw oil to cure stomach diseases. The healer (ongangd) will use a sharp blade to cut two vertical incisions on the stomach, like the number 11. When the blood comes out of the incisions the onganga will take millet porridge (oshifima) which has been dipped in marula oil, and dab it on the wound. He will then eat it to take away the victim’s pain." (Ohangwena Association).

"Within the first week of birth a few drops of uncooked marula oil are put in the eyes and ears of a baby, to help clean any mucus from their system. Uncooked marula oil can also be used to cure blocked ears and sore eyes." (Extract from an essay by Okahao Association). "Marula oil is used to open and soften infants ears and nose." (Ombalantu Association).

"A few spoonfuls of uncooked, raw marula oil can be taken every few hours if a child has a cough or you want to prevent coughing. Marula kernel is also prepared explicitly for use by a traditional healer. Oil to be used for curing is kept in a separate clay bowl. If a baby accidentally eats from that pot this oil can no longer be used for curing." (Extract from an essay by Endola Association).

"Fresh marula oil without salt can be used to cure diarrhoea (Ohangwena Association). "Raw marula oil can be used to treat colic, intestinal problems and blindness." (Okahao Association).

"If you are lucky enough to have enough of that oil to eat throughout the year your eyes will be healthy’, (pers. comm. Loide Kankondi, Okahao Association).

**Traditional and Cultural Importance of Marula Oil**

Over the last 100 years the history of marula use in north-central Namibia has been heavily influenced by the desire of colonial governments to suppress people's spiritual, economic and political will. As would be expected this has had a profound effect on the way people perceive and use valuable resources such as marula. With the freeing-up of
society since Independence in 1990, some "traditions" and, specifically, the notion of "a marula culture" have made a resurgence, albeit in a different form.

There is a wide variety of experiences and opinions about the practical and religious uses for marula oil in the past, as well as its cultural importance today. These differences between are primarily a result of differences between: 1) marula use within each of the ethnic/language groups in Owambo which has evolved over time; 2) people living predominantly rural or urban lifestyles, which affects their day-to-day perception of marula; 3) the relative influence of traditional authorities to promote their marula culture today and to determine what is remembered and promoted; and; 4) the ability of older members to vocalise and motivate a revival in past practices and beliefs.

The history of marula use has always been one of innovation and change, but the last decade has seen unprecedented growth, not only in economic opportunities, but in cultural expression as well. Bearing in mind that this part of the globe, (and the cosmetics industry as a whole), is experiencing rapid transformation, the following section, looking at the traditional and cultural importance of marula oil, reveals a marriage (with the usual elbow contest) between the old and the new.

"In Owambo culture visitors are honoured with marula oil because they will always feel important and well received. In this way many people, from all the Owambo cultures, respect the marula oil. Marula oil is always present at important functions such as weddings, engagements, baptisms, confirmations, and alike. In the old days it would have been used in many aspects of rituals. Today though marula oil is used most often to make relishes for food and given to invited guests." (Ombalantu Association).

"There are traditionally important rituals and celebrations where marula oil must be present: oitendele ("the feast") will always require many pots of marula oil. The main feasts in Oukwanyama are edalo (birth), eshasho ("baptism of a new born"), efundula ("marriage"), oilyaipe ("the new year harvest"), omiitima (to cement a friendship, literally, "the heart feast"), and oiitenya ("engagement party"). Marula oil is served in oshingali ("a relish of beans and marula oil"). At all these feasts there has to be marula oil." (Extract from an essay by Ohangwena Association).

"This oil is very important especially at the traditional wedding ceremonies. On the day a girl is going to be married she will apply marula oil to her whole body." (Ombalantu Association).

"Traditional marriages use marula oil in the preparation of food and as a lotion as well. This practice of cleansing a girl's body before the ceremony we call, "making them cool". (Extract from an essay by Okahao Association). "At a local wedding in Owambo you must provide odjove for the guests to eat. (Okahao Association).

"When guests are invited to the house they are given marula oil as a sign of respect." (Okahao Association). "In the Owambo tradition it is very impolite and potentially dangerous to ask for marula oil if you are a guest in someone's house. It is believed the kind of person who asks for something so precious and revered must be beaten by the
elders because you are "crying tears of marula oil". In other words you are crying, 'crocodile tears; you are a coward, and weak in spirit. You are the kind of person who will 'let people die. For this insult you will be punished." (Ohangwena Association). "According to tradition sons- and daughters-in-law are very important people in Owambo society. They are considered special guests when they visit. They are honoured with special foods like marula oil with wild spinach (evanda)." (Ongenga Association). "If a son or daughter -in-law is invited and you do not prepare odjove for them with their food, they know already that you do not like them to be married to your child. But if you do offer marula oil they will know you are very fond of them and they will be welcome any time in the future and that this is now their home too," (Extract from an essay by Okahao Association).

"In the old days if you moved into a new house, the first time the owner goes to sleep there he will order a salad of beans to be made covered with marula oil (oshingali). This meal will be eaten the day before going to sleep in the new house. It is a sign of respect and brings good luck to the new homeowner." (Ongenga Association).

"Before the people started using the new omahangu (millet) of the season they would cook a big pot of porridge and bean salad covered with marula oil. This meal is divided into three equal parts. One part is thrown to the east, one to the west and the third is for the family. This means we still have a responsibility to feed our forefathers". (Ohangwena Association).

Rodin (1985), working in Oukwanyama (now the Ohangwena Region), mentions how vegetable oil from marula can be mixed with red ochre obtained from Pterocarpus angolensis (pmuuvd), and smeared on women's bodies, "for ornamentation and perhaps to keep off skin insects and keep the skin from drying in the hot season" (p. 38). As well he mentions how, "Seed oil may be mixed with red ochre and put on their women's cowhide or cow-stomach aprons. This was a very common tradition in 1947 but had been almost completely abandoned by 1973, since most women now wear dresses. My informant stated that only [so-called] pagan women now follow the old custom." (p. 49). Women harvesters from Eudafano also mentioned this application, that, "Marula oil can be used to soften animal skins." (Okahao Association).

"Pregnant women keep themselves busy with the cracking of marula nuts. A mother will prepare a lot of Marula oil for herself and her baby. Before a baby eats anything she must taste the pure marula oil [no salt added], A few drops of pure marula oil are put into the babies nose and ears, to clean them (like a balm), and to prevent colds, flu and any other potential disease through these orifices." (Okahao Association)

"Pure marula oil is an important gift to give the mother who have just given birth. Even today, neighbours and relatives will come and visit her as she returns from the hospital and offer a gift of marula oil intended solely for her and her new baby. (Okahao Association)
Agnes Akwaya from Onesi emphasised an alternative use for marula oil; as an aphrodisiac. "If you give it to your husband he will be strong in bed. He can maybe play three rounds!" (Pierre du Plessis, pers. comm.).

"Tell all your mothers and sisters in London that they must give marula oil to their sons-and daughters-in-law in their food, not just as a body lotion. Tell them this is very important in our tradition"..."And next time you come bring a whole box of our CRIAA SA-DC marula oil. We want to buy some for ourselves and our families. We want to see how it is sold in the shops." (Conclusion to an essay written by Ondobe Association).

Marula Nnt Shells (Oshoongoti or Oipatu or Oshipatu)

After extracting the kernel and marula oil, leftover marula shells (piyongoti) are sometimes collected and used. Having a rasping surface, like sandpaper, the leftover half-shells can be used to smooth the small round discs of ostrich egg-shells or snail-shell fragments which are strung into rows like beads to wear as necklaces and ornaments (called ondjeva). "In Owambo there are no naturally occurring rocks or stones which would normally be used as filing tools. So we use marula shells as 'sandpaper'." (Extract from an essay by Ongenga Association).

"Leftover shells of marula nuts make very good fire. They are water resistant [bum eves when wet]". (Okahao Association).

Hermann Tonjes (1911) describes another traditional use for marula nut shells: "I would like to draw attention to a game that could be described as the Ovambo's chess and which is played passionately throughout the country, namely "owela". Tonjes describes how marula nuts are referred to as "cattle" by the players, each nut used as one of the moving pieces (p.84). During the marula festival in king Eliphas's homestead in March 2001, a group of men played owela for our benefit. It 'ended' when all the men drank and ate themselves into a stupor. "When the men are playing that game they are always happy". (Okahao Association). (See photo 15 on page 60 showing these men playing owela).

Marula nut shells may be scattered on arable fields as a fertiliser. "This is important if you want to produce good spinach in that place". (Ohangwena Association).

"Shells can be used to cure headaches. Shells are thrown onto the fire, a blanket is placed over the whole body over the fire and the smoke inhaled." (Ongenga and Endola Associations).

"Shells of leftover marula nuts are sometimes used to make a strong, cement-like floor, m the stamping area (oshipale) where omahangu (pearl millet) is traditionally threshed. The marula shells are mixed with clay and water and pounded to make a hard, flat floor." (Endola Association).

"Before the kernels have been extracted marula nuts known to have 'one eye' are collected and used to cure mental people. The top of the nut (oshipatu) is cut the same
way as if extracting the kernel when making marula oil. The tops of these one-eyed kernels are collected and burnt on a fire. Covered with blanket, the mental patient is led to the fire and told to inhale the marula nut smoke. These special one-eyed nuts are known as "ondulif. (Ombalantu Association).

Based on discussions with women harvesters it is clear that the uses of marula in people's lives is both profound and variable. After considering the most important historical uses for marula the women went on to describe the most important of traditional rules and social norms influencing how they control the use their trees.

**Traditional Rules & Formal Legislation**

"The Marula tree is so highly valued for its fruit that it is never cut down." (Ohangwena)

When travelling around north-central Namibia one of the most obvious things is the number of fruit trees in people's fields. Although a rapidly expanding population has cleared much of the indigenous forests for cultivation, fruit trees have flourished. Oral and written sources recount a long history of tending fruit trees, of which marula is arguably the most important. Through these historical narratives emerges a resilient cultural core, which reflects back on its image to explain life today. At its heart lies the idea of connectedness, through kin and kings, expressed through stories that are intimately linked to the land and its productivity. This section will argue that, for centuries, marula has played a pivotal role in the emergence of order and the maintenance of the productive capacity of the land. And today these rules and practices, adapted and refined over centuries, remain central to how people negotiate and tend to their land.

Marula is one the most potent natural resources connecting people directly with their land and their past. Although many aspects of this ancient marula culture have been smothered and transformed by the influence of modern lifestyles and rapid changes in land tenure, fruit trees, particularly marula, remain at the heart of the productive cycle of life and a valuable resource central to modern farming systems. Go to Ondobe in March for example, and you will observe directly the powerful link between marula and the way people live off and work their land. This link is reflected in 1) the number of trees in people's fields, 2) the number of people seen processing marula, 3) the amount of time people spend processing marula, and 4) the number of people using marula day-to-day. And in terms of consumption, many men and women I met with, not to mention a few 'officials', (government employees, traditional leaders, and alike), were too 'consumed' by marula wine (and their goat meat) to work much after midday. To a considerable degree marula influences what people do and how they do it.

Within the Cuvelai floodplain, where people and marula are most concentrated, there has been a long history of settlement and expansion. Western Ohangwena, situated in the heart of the Cuvelai, is today the most densely populated area of Namibia and home to most of Namibia's marula trees. In the context of developing a modern marula industry, centred around Eudafano Women's Co-operative, how would one for example, best go
about establishing marula fruit orchards, especially in densely populated areas where there is intense competition for land and other natural resources? An understanding of the rules and regulations influencing how people tend to and use marula will assist marula harvesters and planners develop new methods of farming, with marula being promoted as part of a sustainable farming system and one of the most productive means of making a living off the land.

This following section explains how marula, in particular, is so well respected that it is tended and managed at the household and neighbourhood level with little or no outside intervention or arbitration necessary from other levels of government or from parallel power structures, such as traditional leaders. Due to the fact that the most detailed historical accounts focus on the former Kwanyama kingdom, and the fact that most marula are today concentrated in the same area (now the Ohangwena Region), means that this section is biased towards the rules and regulations of this important marula growing area. Future studies by researchers and the women harvesters could provide case studies of the practices and rules of tending to marula trees in other tribal areas and regions of the north.

Pre-colonial and early Colonial Times (before 1915)

Early Bantu settlers organised themselves according to clan, later aggregating within a more centralised political organisation with a king and/or headmen at its centre. These leaders began a long history of direct control over marula, still evident today.

"In African communities many tree species were protected long before European occupation. For example, in Owambo all fruit trees were guarded and contravention was severely punished. Marula was among the most valued tree species, mainly because the fruits could be made into alcoholic drink. All marula trees, regardless of where they grew, were the property of the king” (Erkkila and Siiskonen, 1992, p.78).

As Frieda-Nela Williams explained in her book, *Pre-Colonial Communities of Southwestern Africa* (1991), "Land is communal property over which a King or headmen presides and regulates its usufruct (or ownership) directly or indirectly through me local/ward headman12.” (p.43) The King or senior headman received a yearly tribute of marula from each homestead.

Vilho Kaulinge, a famous Kwanyama historian, tells one of the most explicit examples of fruit trees influencing the course of history.

Vilho Kaulinge was born in the pre-colonial era in 1900. He died in late 1992. He was a youth when the South African forces colonised the Kwanyama kingdom in 1915-17, and lived long enough to witness independence in 1990. His life spanned both colonisation

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12 Today, communities with no King include Uukolonkadhi, Onkwanakwa, Ondangwena. Qndombodhola, Ombalantu, (since the death of Kampaku in the mid 19th century), Kwanyama (since the death of Mandume in 1917) and Uukwambi (since the abduction of Hpumbu in 1932) (Williams, 1991, p.43).
and decolonisation. He died at his home in Ondobe, at the heart of Owambo marula country. In the book, 'Healing the Land' (1997), Vilho recounts how the teenage king, Mandume ya Ndemufayo, used fruit trees to stamp his authority on his divided nation as a means of uniting his people against the colonial onslaught.

The last Kwayyama King, Mandume ya Ndemufayo, came to power in 1911 at a time when war affected the whole nation. The European colonial powers were causing chaos by invading from the north [the Portuguese] and from the south [South Africans]:

"...Mandume took over the crown...as the one truly chosen by God to lead the nation, and to bring it out of a mess.

"So when Mandume took over the crown he started with a brief order. He convened the Council of Headmen... 7 want to give you something, discuss it, and come up with your own proposals when you finish '...He started with the fruit trees and said the trees have been created by God who gave them to the people. 'The trees bear fruits that are edible to human beings. Therefore I do not want to hear people are beating off unripe fruits from the trees—When the fruits become ripe, they fall down on their own. And when they fall down the children can pick them up and start eating—He told his men to take the order to his people. At the same time he organised for his secret police to go around the villages to check whether the king's rule was being complied with—One day those men found a man whose omuandi tree's fruit (bird plum) were lying unripe on the ground....

The farmer, with his basket of unripe fruits, was brought before the king and his headmen. Mandume wanted to set an example so that all his people would know that he is now in charge and that lawlessness would not be tolerated in the land...

King: Don't you know about the present law concerning fruit trees? That order came from me. These laws stated that the fruits must be allowed to get ripe while on the tree, that they must fall down on the ground on their own. Are those unripe fruits really from your own field?
Man: Yes, they are from my own garden
King: Didn't you hear what your headman had told you?
Man: Yes, it was made known by our headman.
King: You have admitted that it was made known. Now start eating your unripe fruits!

"That basket with unripe fruits was immediately known by almost everyone in the country. From that day on no-one tried to get unripe from the trees any longer." This oral history was told by


It is worth recounting this story in detail as it explains a longer-term pattern of leadership and political control, entrenched by leaders at different times in history and within each of the different kingdoms and chiefdoms spread across the entire north-central Namibia. Remnants of this form of leadership - based on survival, healing, productivity and unity enforced through a strict hierarchical order - still exist today. It is argued that the control
of important natural resources, such as marula, is key to understanding the health and security of households today, all the while ensuring traditional leaders are able to extend their influence over the local populations.

**The Colonial Period (1915-1990)**

As the women of Okahao Association explained, "Even today the unripened, green fruits on the fruit tree are left untouched. It is taboo. If you touch them and try to pick them you are not going to be able to see at night". Regardless whether people believe, literally, that a person may lose their eyesight, the traditions and the practices surrounding marula -such as leaving marula fruits 'til they abscise naturally - is so ingrained in the minds of the local population that, in most instances, they serve as an effective means of controlling the use of marula and conserving the resource.  

Even after the colonisation of all the tribal kingdoms and territories throughout northern Namibia, (the last kingdom, Oukwanyama, was defeated by the Union of South Africa in 1917) these laws related to fruit trees were so fundamental to the way of life in the north that many of them survived even colonial occupation. As the Native Commissioner for Owamboland, Cocky Hahn reported in 1931: *Fruit trees—are, generally speaking, protected in all the tribal areas. In fact certain species are jealously guarded and many trees have special names and there are definite laws in regard to their ownership*. (Quoted in Erkkila & Siiskonen, 1992. p.78)

The importance of marula in people's lives and its future potential was also recognised by successive colonial governments. Under the German period of occupation, between 1900-1914, marula was propagated in government nurseries (Erkkila and Siiskonen, 1992. p. 105-108). And later Keet, a forestry advisor to the South African government conducting an evaluation of Namibia's forest reserves, stated, "the most important tree species in the region—from the standpoint of commercial utilisation were [inter alia]... *Sclerocarya birrea*..." (Erkkila and Siiskonen, 1992. p. 112).

As a result of the recognition placed on marula, by 1952 marula had been officially included in the first forest legislation, *The Preservation of Trees and Forests Ordinance, No. 37 of 1952*. This list of 23 protected trees species was revised and increased in 1975 under, *The Proclamation of the SWA Administration, No.486*, to 43 species, once again listing marula as a valuable indigenous tree resource (Erkkila and Siiskonen, 1992. p 79). By protected or 'reserved trees' the legislation meant that, "the damage to and felling, destruction or removal of any such tree without prior permission shall be prohibited and punishable" (Breitenbach 1968, p79-84). This clause is still widely publicised throughout northern Namibia to emphasis the importance of forest resources to local users. (See photo 16 on page 61 below).

As Kreike (1995) summarised, "Colonial forestry legislation in as far as it was applied to north-central Namibia before Independence, notably the drawing up and enforcement of a

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13 Not all know this story: Pierre du Plessis, CRIAA SA-DC, mentioned that during fieldwork in March 2001 he saw children beating *eembe* from trees in Ondobe.
list of "protected trees", in fact confirmed the same general principle that underlie traditional law" (p.46).

As with many other resources and peoples throughout Africa, different people may have different rights to groups of or individual marula trees. Instead of a single "owner" with sole rights to a tree, there may be "bundled rights" to a tree or group of trees. In practice a marula tree is ultimately "owned" by the head of household (the leaseholder of the farm), but he will almost certainly allocate the tree to his wife or a daughter. The woman may use the tree to produce a range of products for consumption in the household and she may sell part of it. In years of surplus fruit neighbours may be given certain rights to use the fruit. If a family has no livestock, neighbours and other family members might be given permission to browse their stock on the fallen leaves and lower branches or even prune or coppice them in times of drought. Members of the household may only cut branches with permission from the household head. To cut the entire tree down permission may be necessary from the local headman or the Directorate of Forestry. (Kreike, 1995. p.48) And with the relatively recent commodisation of marula over the last decade, access and user rights over marula will almost certainly evolve once again.

In terms of land allocation and land tenure, it is important to understand that land tenure and marula tenure are separate things, where "ownership" of a plot of land does not necessarily confer ownership of marula trees located on the land. As we have heard, marula trees are managed by households on a day-to-day basis, but they have certain responsibilities to other members of the community as well as obligations to traditional leaders and the government of the Republic of Namibia.

**Post-Colonial Period (1990 to present)**

Today marula in Ovambo belongs to the state and custody is devolved first to traditional authorities who, in turn, pass the responsibility and management to individual households. Within households where marula occurs, women - the de facto custodians of the marula resource - remain the productive unit responsible for the entire process of production, from harvesting to storage, and in more recent times, the sale of marula products. Today, the role of women as the 'productive unit' has been expanded and reinforced through the Eudafano Women's Co-operative which, according to their constitution, groups together women into discrete village committees to perform essential marula production tasks. One of the principal new 'rules' regarding marula use and is that Eudafano ensures only women are eligible for membership to the marula co-operative.

There were very specific rules regarding the tending, processing and consumption of marula resources, and many of these social norms and rules still exist today, although many are symbolic rather than practical. As a result of this long and consistent history of protection, marula remains a highly respected and well-tended tree at all levels of society.

14 Bearing in mind that a farmer's right to own and use marula trees on his land is based on traditional lease agreements (subscribed by the local traditional authority)
The current leader of the nation, Dr. Sam Nujoma also recognised the importance of fruit trees, especially marula, perhaps following the example of former leaders, to emphasise the need for productive work on the land, to centralise power and to unite his people in the pursuit of a common goal. During a tree-planting campaign in central Owambo in 1998 the President symbolically planted a marula sapling to emphasise to local residents the importance of planting useful trees within the community.

Following the President's lead, the Directorate of Forestry has embarked on a series of projects to maintain and improve the use of marula as a multiple-use tree crop. "Social forestry" has become a catchphrase among development workers investigating ways to improve benefits to farmers using agro-forestry techniques; the propagation of marula being a focus for efforts to plant indigenous trees and improve on-farm productivity.

The rules regarding the protection of marula trees are quite clear: As a protected tree a person cannot damage marula. If found, that person will be liable for a fine. If a person wants to coppice a marula tree, for example, they have to obtain permission from the Directorate Forestry first, even on land leased from local headmen.

Forestry extension offices based in Ongwediva, however, explained that most of the half-million people living in north-central Namibia are unaware of this formal legislation aimed at protecting marula and other tree species: "The local population are not aware of the formal legislation regarding the use of marula trees. It is very difficult for us to reach out and explain and inform people. On the other hand, you cannot find a healthy marula tree which has been chopped down." (pers. comm. Paulina Banda, Directorate of Forestry, Ongwediva). As some women explained, "You can cut a male tree to make a fence for your farm." (Ongenga Association).

"A farmer will think, 'I paid the headman for this land. As long as I abide by the customary laws and do not offend any of my neighbours I can do what I want in my fields'. So, those responsible for looking after marula trees on a day to day basis will go ahead and cut branches off the tree to feed their goats. They have no idea it is against the law. Most people do not understand any of the formal legislation in place to protect marula. It must be emphasised though, that although it is difficult for us to inform people about these rules you will never find local people harming a healthy marula tree. Within the community, people know that if they are found damaging a tree they will be fined by the headman. This is why our Directorate has decided to work closely with the traditional authorities, because we know it is the headmen, in co-operation with their people, who negotiate and manage the resource in the best possible way. (pers. comm. Paulina Banda (Forest Technician), Kebby Mutanekelwa (Forest Ranger), Joseph Banda (Forest Ranger), from the Directorate of Forestry office in Ongwediva).

"Marula is the most important tree in Owambo. People do not abuse that tree, they have their own rules. It is impossible for me to harm marula unless the tree or branches falls to the ground on its own or is killed by a parasite or lightening." (Tsandi Association).
Similarly, in most areas of Owambo, there has been a long history - stretching at least 150 years in Ohangwena Region for example - of rules and regulations controlling how marula can be used, initially by the kings and his headmen, then by successive governments, (including this one), and lastly, by the local population themselves. It is clear that people from all walks of life continue with a deep respect for marula, (as well as other fruit trees and some timber species).

Photo 16 on the following page was taken in the town of Outapi in the Omusati Region. It reveals the link between past practices and recent efforts to unite government departments, traditional leaders and local residents in promoting the sustainable use of forest resources.

"In general there is very high degree of respect for trees in Owambo. The society and culture has introduced norms and user rules which are very respectful of important resources. There maybe a few conflicting rules between the different bodies managing and policing marula - at subsistence, traditional, and local government levels - but they are pretty much in line. We know that the sex of marula trees is heavily skewed towards female trees [averaging 5:1, female:male], based on personal observations and discussions with the women as well as on-farm surveys conducted by the Directorate of Forestry. This reveals a definite pattern of care towards productive trees. There is though a concern over a recent policy introduced by the Ministry of Agriculture Water and Rural Development to provide subsidised land clearance for new farmers to establish farm plots. When they clear the land they can also clear the productive trees, which contravenes existing forestry regulations. Generally, fruit trees are well respected, maybe not actively planted, but protected. And women are the ones involved in the protection of trees, as they are the wood collectors and fruit harvesters. Children are also involved as they go with the women." (Pers. comm. Michael O'Brien, DANCED Project, Directorate of Forestry, Ongwediva).

Women harvesters explained how, "in one case a farmer cut out male marula trees from his fields because he did not want it to be known that he has many marula trees on his plot. Some people still believe that marula trees are the property of the king and headmen and that they might get kicked off the land if their plot becomes too productive. And some people have the experience that too many marula trees decreases the productivity of the land as the roots will compete with other crops and vegetables for nutrients. So you can see there are a few isolated cases where marula is purposely destroyed, but this is not very common." (Ongenga Association).

"There is virtually no conflict over the management and ownership of marula trees in Ohangwena. Marula is very well respected. And people understand the traditional system of land allocation and arbitration. It's mostly common sense based on fair play. The only incidence I have ever heard of, and this is very rare, was an argument over the ownership of a specific marula tree that fell on the boundary between two plots. In this case we simply listened to each of their claims. In the end they worked it out for themselves." (Pers. comm. Victor Ueyulu, Chairperson of Oukwanyama Traditional Authority and Grandson of the late Kwanyama King, Ueyulu).
"If a conflict was to arise over access to marula we would try to arbitrate the situation enabling both parties to use the tree in question. If they cannot agree we will decide whether that tree should belong to one person, the other, or neither of them. I must stress, it's mostly common sense and, I have no experience of conflicts over marula resources or abuse of marula trees in this area. Every person respects that tree, so much so that people even share marula fruits with neighbours who do not have marula trees on their plot of land." (Pers. comm. Victor Ueyulu).

"In the future I do see a larger problem though and this relates to the allocation of land in general. Let me explain—the rule of thumb regarding the allocation of plots has been the introduction of fixed sum; any plot in Ohangwena today will cost the new owner N$600, regardless of its size and relative productivity, which he will pay to the local headman. But I predict great confusion in the coming years as competition for adequate land increases. Since Independence we have sat and listened as politicians from Windhoek come again and again to tell us the new rules regarding our role in land allocation. They never ask us our opinion and we have kept quiet. Today, things are coming to a head. Some of these new rules are correct. Like the rule which states that a widow cannot be removed from her plot just because her husband, who bought the land in the first place, has died. Most people agree with this new ruling. But there is a deeper conflict, between the headmen on the ground and politicians in Windhoek, because Central government is now also involved in the allocation of land. It is becoming confusing." (Pers. comm. Victor Ueyulu).

On a more day-to-day level the women harvesters from Okahao explained to me in detail how they understand customary rules and regulations affect how they tend and use marula in their area. "Traditional leaders and local courts preside over the allocation of land and the policing of natural resource users. On your own land - the plot leased from the local headman - you can cut any tree any time. But we do not cut productive and useful fruit trees down. That would be foolish... For all intents and purposes the management of marula within leased plots is straightforward; the man makes the decisions on all matters related to frees, and the wife tends to them day to day." (Okahao Association). "The owner of the house is the owner of the tree." (Ongenga Association).

"The basic rule is that in a person's fenced off fields you cannot use those marula trees, or any other resource, without the permission of the owner of the household (usually the wife and her husband). Outside the "ekove" (the fenced off farm plot), the traditional authorities take responsibility for monitoring tree issues. On communal land you cannot cut a tree without the permission of the headman. Marula fruits falling on communal land can be used by anyone from that local area." (Okahao Association). "If a tree does not have an owner then the headman or headwoman can invite someone to use it." (Ongenga Association). "Everybody has access to trees and fruit on communal land. People from

15 Victor Ueyulu strongly advised me to talk with George Hikumwah, the senior headman of Ongha (just south of Ohangwena town) who is an expert on land allocation and official advisor to the Oukwanyama Traditional Authority. Unfortunately, due to time this was not possible. Ueyulu asked me to talk directly with Hikumwah about the "increasing difficulty of overseeing the allocation of plots".
outside the ward [local area] must first inform the headman that they want to use a marola tree.” (Endola Association).

"We have a different farming system than people living in Kavango and Caprivi. In the north-east, farmers separate the arable fields from the forest. Here in Owambo we have a piece of forest, some fields, a well, everything we need, all on our own plot of land. So there are very few direct rules over how we use this land. Our perception is that trees are very important. Common sense says do not cut them or harm them." (Okahao Association).

"We have never seen anyone cut a marula tree down. Customary law says you have to pay if found damaging or cutting a marula tree." (Ongenga Association). "We have no personal experiences of problems related to the abuse of marula trees. We have never seen or heard of anyone cutting a living tree, particularly a female. We don't know whether it's written down, it is just like this. There is respect from the whole community. The only time we ever heard of a problem was when a foreign NGO project came here to Okahao and started to clear the land for construction without permission from the headman. The community complained they were destroying all the trees. The project was stopped by the headmen." (Okahao Association).

"In the old days, plots of land with many marula trees were always given to an important person, like a headman. If a person found many young trees on his plot he might cut them down before they grow to maturity to ensure that he was not evicted and his land allocated to someone else. But this does not happen now. There is no threat of getting kicked off your land." (Okahoa Association).

"We never cut a whole marula tree, just the branches, to increase the number of fruit-bearing branches [not dissimilar to pruning fruit trees in commercial orchards]. Some people still do this today." (Ombalantu Association).

"Cut a marula tree on my land, male or female, and you will be killed." (Ongenga Association).

"The owner of the tree sees the fruit is ready then it can be collected. The first fruit, juice and brews must be given to the owner even if they are processed by a neighbour. If a woman, or group of women, use their neighbour's marula fruit, (perhaps they have finished their own or they have no marula trees in their own plot), they will collect up all the fallen marula fruit to process, and most of the produce will be given to the owner as an in-kind payment." (Endola Association).

"Special trees are treated especially well. No one is allowed to use these trees, they are for the sole use of the owner, unless you are invited." (Ongenga Association).

"Every person coming from Owambo has access to marula resources. Even if they don't own any trees, like many urbanites today, they still can come and collect from relatives in the rural areas." (Ongenga Association).
Propagation Trials: Improving Fruit Quality and Yield

"The marula tree is without doubt one of the most important of all indigenous African trees and shows great potential as a cultivated, multi-purpose fruit crop of the future... This is perhaps the most important of all southern African fruit trees." (van Wyk & Gericke 2000, p.114 and 56, respectively)

This section describes some of the work being done in north-central Namibia to improve the quantity and quality of marula fruit available to women harvesters. The first part describes the most common methods of propagating marula employed by women harvesters on-farm, including the use of truncheon cuttings. The second part deals with recent marula trials conducted by the Directorate of Forestry, including community plots. And the last section describes some of the plans currently being proposed by women harvesters and the Directorate of Forestry to improve on-farm yields, as well as develop community orchards on communal land.

Common Methods of Marula Propagation Used by Women Harvesters

Marula, like many indigenous tree species is fairly understudied. Seed morphology, anatomy, and to a large extent germination of marula has been investigated but comprehensive understanding of its reproductive biology cannot be claimed (Hangula, 2001). According to women harvesters me existing marula resource is predominantly a result of germination through natural propagation, after which seedlings are protected by women. "Most new marula trees grow beneath the mother tree, from piles of seeds left by the owner." (Ohangwena Association).

During a discussion on the propagation of marula trees the women of Ondobe in Ohangwena explained the situation they experience in their area. "Most new trees propagate from the faeces of goats. They eat the fruit off the ground and then deposit them around the farm. When we find a new marula shoot growing in a good place we fence it off to protect it. That's why you find most marula trees in people's fields. Outside farm plots goats eat unprotected young trees. It's important to put up a fence if you want it to survive. A marula tree does not need extra water, manure or shade. All a marula needs is protection from grazing." (Ondobe Association).

Like many other indigenous species marula trees established from seed will take a long time to fruit. This period may be as long as ten years or more (Hangula, 2001). "Finding a small sapling in your field is a happy occasion; you will rest that night knowing more marula is coming into your life. A new tree takes about 10 years to bear fruit. If the soil is really good, it might fruit within 6-8 years. On poor soils marula can take as long as 15 years to mature. A female tree will live and give fruit until it is 60-80 years old. Most of our trees are female. If you have four trees on your farm, one will be male. If you have six trees on your farm, one or two will be male. Most of the trees we protect will be female. It's just like that. And there are more marula trees now than when we were young girls." (Ondobe Association).
Experiences with marula among the women harvesters has shown that truncheon cuttings will flower and fruit much earlier than trees established naturally from seed. There is the added advantage that truncheon cuttings produce a new tree with the same properties as the original tree. "If a neighbour has a marula tree producing especially big or sweet fruits then we may take a seed or cut a branch from that tree and plant it in our own fields. It's better to take a truncheon because it grows so much faster and we know it originates from an original tree with sweet fruit. We have to plant trunchons in September. A female tree can produce fruit even when it is relatively small, within two years if you're lucky, but usually around 3-5 years. They are very fast growing." (Okahao Association).

"It's important to protect the sapling from children and goats by erecting a fence of thorn brush or wire. We water truncheons too. You cannot tell the difference between a male and a female tree until they reach fruiting age." (Okahao Association).

"Trees propagated from a truncheon are known as "Nangudi". We cut a 2 metre branch and plant it to a depth up to your forearm. It's wise to plant a big branch with manure or old scrap food to feed it. I have two marula trees planted from trunchons. I did this because there were not enough marula trees in my fields. I now have 10 trees. The other trees came with nature. Most marula trees in Owambo propagate naturally. And it's true that a lot of trees grow from the piles of seeds left behind after the women finish processing what they need. So, we do have a hand in the propagation of many new trees." (Ohangwena Association).

Marula trees grown from trunchons in the Roman Catholic Mission in Shambyu, Kavango were established using particularly large branches, around 20 centimetres in diameter. Residents insist that the largest branches ensure the best likelihood of successful rooting and the fastest growing trees (pers. comm. Pierre du Plessis, CRIAA SA-DC; Botelle, 1999).

A quick survey of women from the different marula associations reveals some local knowledge of using truncheon cuttings to produce new marula trees. Among the women of Endola group, seven women actively planted marula in their plots, five from seed and four from trunchons (two women planted trees using both methods) although, "It is not common for neighbours to ask us for fruit or cuttings from one of these special trees" (Endola Association). "We are planting marula in our fields both from seed and from trunchons." (Ongenga Association). Of the 45 women attending discussions with the Ongenga group just one had planted marula from a truncheon cutting.

Josephina Shindabi explained how a new female will grow from the truncheon of another female tree. "My daughter brought a cutting from her house and planted it in one of my fields. This was maybe 10 years ago. Now it is fruiting." And this year she noticed new trees growing in her homestead, "from the place where we put the seeds out to dry". (Ondobe Association) I personally witnessed this in homesteads during my field trip during March and April. And on my return to Windhoek at the back of the CRIAA SA-DC offices marula nuts had been stacked in a shady, moist space. Left for the duration of
the summer rainy season, by April many of these seeds had germinated, in the same way as they would have done naturally had they been left in a field or around a homestead.

**Propagation Trials Since 1990**

Since independence in 1990 a number of community forest projects and government propagation trials have been initiated in north-central Namibia under the auspices of the Directorate of Forestry. Marula has been planted at most of these project sites. "The President likes marula, that is why government is pushing to plant and protect indigenous trees, especially marula. Unfortunately, in practice, marula has proven to be extremely difficult to propagate." (Pers. comm. Paulina Banda, Directorate of Forestry, Ongwediva).16

Anneli Shishome, the Chief Forester for north-central Region, in Ongwediva, explained some of the main reasons for this lack of success: At the Onankali trials, 16 hectares were planted with 8,000 marula seedlings in the summer of 1994/95. By 1996 virtually all these trees had died. Less than 50 have survived. They died as a result of frost which occurs there every year, and attack from mice [mole rats] which ate the roots of the young trees. In addition, Onankali is a dry area. The site was not suitable for marula. And at another location, liheke-Yanakele, poor soils have produced stunted marula saplings17. (See photos 17 and 18 on page 67 below).

"These propagation trials have shown us that we need to look at places where marula occurs in large concentrations naturally, and plant there. Good, soft soil, frost-free winters, fencing and sufficient water [in areas where it's required] are priority needs for successful germination and growth of marula trees." (Pers. comm. Anneli Shishome, Directorate of Forestry).

**Proposed Methods to Improve Yield and Quality**

We want to improve the quantity and quality of fruit for juice and kernel. We also want to know how to reduce the time between planting and fruiting." (Ongenga Association).

Women harvesters and Staff from the Directorate of Forestry are keen to work together with traditional leaders to improve the productivity of the marula resource. On page 67 below are some ideas on how to do this, based on local experiences with the ongoing marula trials as well as with propagation methods developed by women harvesters to improve on-farm marula yields.

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16 Across the road from the Directorate of Forestry plot and, with far less infrastructure, Erik Gessen, a Danish NGO/forest extension officer working with the Directorate of Forestry experienced great success propagating marula in the late 1990's. (Pers. comm. Pierre du Plessis. CRIAA SA-DC)

17 On the day the project was officially opened, Dr Sam Nujoma planted a single marula tree and said, "I hope what we plant today will be followed by many thousands of trees—After 15 years we will be able to get fruit from these Omugongo trees." Seven years later only the marula tree planted by the President has grown to any size, as it has been well tended: "the kings tree is always well tended". (See photos 17 & 18).

65
Recommendations:

1) "Conditions exist in north-central Namibia to expand marula production within farm plots. At the same time it will be possible to intensify production on communal land by planting orchards where marula occurs and thrives naturally. It is important to build on the existing successes and local knowledge, by creating a partnership between local residents, traditional leaders and government departments. For example, a plot of land could be allocated by local headmen in cooperation with local residents to identify the best marula growing areas." (Rusta Hangula, Directorate of Forestry).

2) In a recent study conducted by the Directorate of Forestry, Rusta Hangula (2001), proposed the vegetative propagation of marula in trials in order to: 1) multiply selected genotypes of marula for establishment in clonal orchards; 2) capture the maximum genetic gain; and 3) to shorten the non-flowering juvenile period of selected genotypes: "We need to understand the structure and behaviour of all the genetic information stored and continually redistributed in the gene pool" (Rusta Hangula, March 2001). A number of studies in other countries show that marula trees with desirable qualities can be identified: "Yields of up to 3,000kg per tree have been recorded by Holzhausen (1993) and wild variants have been identified which produce large fruits of up to 98 grams each." (van Wyk & Gericke, 2000). CRIAA SA-DC is currently being supplied with marula fruits typically weighing 30-60 grams (CRIAA SA-DC). "Although it has not been recorded very thoroughly, women harvesters have a depth of knowledge about variations in quality between different marula trees and fruit, not to mention the huge potential uses of marula." (pers. comm. Rusta Hangula, Directorate of Forestry). Rusta Hangula recently conducted a study to identify and select "special fruit trees", based on fruit size (larger), fruit taste (sweeter), nut yield (more), fruit production (more), and juice production (more). Rusta has formally proposed (they are awaiting funding) for the Directorate of Forestry to initiate vegetative propagation of these special trees near Onhuno in the Ohangwena Region. (Hangula, March 2001).

3) Pruning fruit trees is a common practice around the world. When a marula tree is pruned it will respond by producing a dense crown of leaves and smaller branches. Pollarding female marula trees could potentially improve fruit yields. And pollarding male trees could result in an increase in the total volume of leaves and small branches. These can be harvested each year or two, stored and used as a fodder bank in times of drought. Straight branches produced by pruning, coppicing and pollarding make ideal fence poles.

4) Research conducted by Rusta Hangula (2000) reveals an average ratio of six female to one male tree in northern Namibia. Based on this ratio of female:male trees, "It may be possible to maximise the number of female trees within orchards still further (and therefore the fruit-bearing potential of the orchard) by grafting male branches onto female trees, (pers. comm. Pierre du Plessis, CRIAA SA-DC).
5) Abscission of marula fruit occurs at different times for different trees. This can be attributed to climatic and soil moisture variations within the different marula growing regions running across northern Namibia, as well as genetic variations between trees. This can be exploited to expand the harvesting period by planting clones that ripen at different times.

**Future Research Needs**

During discussions with marula harvesters from Eudafano Women's Co-operative a number of other suggestions and research needs were identified. These are summarised below.

**An Evaluation of Tree Yields, Seasonality and Regeneration**

There is no reliable data on existing tree yields. A more reliable indicator of available yield would be to conduct an annual survey of Eudafano members' households - those with direct access to fruit-producing trees in their fields - to assess seasonal variations in yield across north-central Namibia.

Additional information on the current level of regeneration would enable harvesters and planners to know the proportion of young trees necessary to sustain a marula population.

Women are keen to plant and tend to marula trees in a more intensive way, particularly through the establishment of marula orchards or groves. They wish for access to marula trees both on-farm and off-farm and are keen to link up with local and foreign expertise to develop a long term marula industry in Namibia.

**Tree Parasites**

"There is a plant parasite which is killing a lot of fruit trees. Here in Okahao many of us have had at least one marula tree die as a result of that parasite. It has always been here in Owambo, but it is getting much worse these days. And it seems to affect marula trees the most. It attacks the leaves and branches until they eventually dry out completely and the tree dies. This parasite has been with us since we were young girls and it is very contagious. If it attacks one of our trees we cut the branch off immediately and use it as firewood, otherwise it will spread very quickly to other marula trees. We heard it is a problem all over Owambo and we have marula trees that have died from this parasite." (Okahao Association)

The women of Ohangwena explained that "the parasite is caused by birds eating the fruit. When they move to the next tree they carry the parasite with them in their faeces. The parasite grows and spreads quickly. As far as we can tell the prevalence of this parasite is the same now as
when we were young. It attacks all tree species, not just marula. We have a local name for a tree
suffering from that parasite, "Nailunda". And if we find it we cut it out”. (Ohangwena
Association).
According to forestry officials, "This parasite is a very serious problem. So much so that the health officer from Ongwediva Town Council came to see me. He told me the council is worried about all the dying marula trees around Ongwediva. I advised him to cut the branches affected and, if necessary, the entire tree. I have noticed the council has not acted on the problem as yet." (Pers. comm. Annalie Shishowa, Directorate of Forestry).

There is the same frequency and occurrence of the parasite today as in the old days. We know the parasite as "Oshilunda" and it is cut out it prevent it killing the whole tree. We then feed it to our goats.” (Ombalantu Association).

In Mpumulanga, South Africa, 'wood roses' are carved into curios. This motivates people to cut them out, ridding them of a problem and, at the same time, earns rural residents additional income. There may be a desire among local residents for a similar initiative.

**Extracting Marula Kernels**

Women harvesters are keen to improve the marula kernel extraction rate. Principally to increase incomes. This may a matter of adapting indigenous methods (currently employing the same iron-age technology as their foremother's; a wooden block, an axe and a steady hand) or developing brand new technology (machinery) to decorticate the marula kernel.

**Improving the Quality of Marula Oil**

More research with the most experienced marula oil producers, would help us understand more about the best methods of cooking ("curing") oil to achieve the most desirable taste, smell and shelf-life. Similarly, there is a need to understand more about the different types of oil and how they are used. For example, speak to Eudafano members to understand specific marula oil recipes; their ingredients, their preparation and their specialist applications.

**Marketing**

"We need to build a place to sell omaongo and oshinwa commercially. At the moment, within 3-4 days of brewing oshinwa it goes sour if it's not sold. We would also like to sell more marula oil and kernel locally. We currently use 'Sate House' in Oshakati to sell our marula kernel to CRiAA SA-DC. This usually lasts 3 days. And there is a small fridge we also use in 'State House' to preserve some of our marula products. But this is not meant for us and there is a growing demand these days, throughout the whole year. If only we could sell marula products, especially drinks, all year round!” (Ombalantu Association).

**Student Researchers and Institutional Linkages**

During fieldwork I met a number of individuals and organisations conducting research into different aspects of marula. And donor agencies, hearing about the work of Eudafano offered research assistance to the marula project. Members of Eudafano are keen to work...
with outside researchers to improve their knowledge base on marula uses and to help overcome some of the technical questions relating to equipment and marketing opportunities.

**Translating this Report and Circulating it to Eudafano Village Associations**

Women harvesters know a lot about the day-to-day uses of marula. But they are not as familiar or confident about how their knowledge fits into the bigger marula industry being created by their close association with CRIAA SA-DC, government departments, other marula-producing nations and overseas markets. By translating this report into Oshiwambo and by circulating and discussing it as widely as possible with Eudafano members, the women are more likely to understand the value of their indigenous knowledge in guiding the future development of 'new' marula products.

**Conclusions**

This study provides an introduction to the history of marula use in north-central Namibia.

Although the Chairperson of Eudafano Women's Co-operative, Ndahafa Kakonda, told me, "things are known, but they are no more told", this project has revealed a wealth of local marula knowledge, much of which still exists, and most of which is based on pre-colonial practices and beliefs.

There is evidence to suggest that there is a symbiotic relationship between marula trees and marula harvesters: Local farming practices and the expansion of human settlement throughout north-central Namibia over the last hundred years has promoted the distribution and frequency of fruiting trees. Combined with its link to divine kings and royal status marula has flourished in Owambo.

Women harvesters have revealed a myriad of different uses for marula. And over the centuries the have engineered techniques to extract a range of raw materials for manufacturing food, beverages, medicines, farm and household implements, and beauty products. As the women harvesters say, "Every part of the marula tree can be used. It's a natural factory". What this study has also revealed is that the value of marula is not simply the sum of its individual parts, but its many other positive uses: It is central to local farming systems, has a key role in power relations, and forms the basis of many cultural and religious activities. That it is central to people's lifestyles as well as livelihoods is key to understanding the importance of marula.

Marula remains a highly desirable tree. As a hypothesis, marula may have become particularly important in Owambo because there are very few other substitute products or alternative resources to choose from. With limited options, not only women harvesters referred to in this report, but the whole community at large, have been forced to make the most out of their marula. That is why harvesters say, "Marula fruits have valuable uses in the communities where they occur."
After hundreds of years of experimenting with marula to refine the products, processes and technologies, there is an enormous amount of respect for its continued role in the household, on the farm and in the marketplace. It's quite unique in that people look both to the past and to the future with respect and pride. There are not many indigenous resources with this kind of undiluted history and future potential.

This study also shows that women continue to dominate all aspects of the Namibian marula industry: That, 1) it is the women who tend to and actively protect the trees on a day-to-day basis; 2) it is the women who select the best trees to use; 3) it is the women who prepare and produce the goods; 4) it is the women who sell marula products, and 5) it is the women who pass on this knowledge to younger girls - their daughters, nieces and grandchildren.

Although women know their own history related to marula, most are not aware of the marketing potential of that history. The marula culture in Owambo is a rich potential resource, not just in the marketing of their wares to a wider audience, but also to help secure intellectual property rights over their physical and cultural resource. Marula products originating from Owambo can highlight an array of unique qualities: Physically marula is a "natural" and "healthy" crop; the tree is "indigenous", "green" and "environmentally friendly"; culturally, the best marula products are made "by appointment" to local kings and headmen; and when combined with its value as a "women's product", and its privileged "fair trade" status, it is fast becoming a compelling natural resource with a unique image.

I would like to recount one last story which, for me, emphasises once again the "hidden" value of marula in people's lives: The chairperson of Eudafano Women's Co-operative, Ndahafa Kakonda, told me over a final cup of omango just before I left. "Andy, do you know why I am three people in one body? My father gave me this power. He performed a traditional baptism on me...He took me above his head like this - me, a one week old child - and with a mouthful of omango blew it straight up my anus. As he did this he threw me over one of the huts. He abandoned me to the fate of our ancestors, and into the arms of my mother. By scaring himself and by scaring me and by scaring my mother, we all gained something. In this way we learnt something. By abandoning my life to the gods we all became more than who we were. It is important to let go, to be more than one person. Marula gives us the strength to face the unknown."
Bibliography

1. Marula Use in the Past


The Native Commissioner, Ovamboland to the Secretary for SWA, Ondangwa 20 April 1931, SWAA 3, A 1/2, vol.1, NAW.


2. Modern Marula Use and Pioneering Marula Research


3. References Source from the Internet Related to all aspects of Marula Use

[ANU Forest Products] [Non Wood Forest Products] [Bushfoods] [Copyright 1999 The Australian National University] [Author: Forestry Web People]
URL: http://www.anu.edu.au/Forestry/wood/nwfp/toesu/Toesu2.html
Mail & Guardian Newspaper. (June 1994) Marula Fruit is Fit for the Kings.


http://www.royal.gov.uk/faq/warrant.html is the official website of the British royal family related to royal warrants and an explanation of the phrase, "By Appointment" to His/Her Majesty. And http://www.byappointmenttohermajestythequeen.com will give readers an indication of the power, prestige and marketing value of using the British monarchy to sell (royal) products.


4. Films and Videos On Marula


Mr. Modestus Amutse/NBC. Unedited video of the Marula Festival at Okahao, Omusati Region. March 2000.

Mr Jafet Iyambo (private video collection). Unedited video footage of the March 2001 Marula Festival at Okahao, Omusati Region. [Including footage of President Sam Nujoma drinking marula wine as the honoured guest at the marula festival],

Mubasen Film and Video Productions (Pty) Ltd. (2000). *CRIAA SA-DC: Marula Oil Project* (duration 5 minutes).
APPENDIX 1

Contact Address for Eudafano Women's Co-operative Associations:

Eudafano Women's Co-operative currently comprises more than 1,000 women members in nine village associations (See Map 3):

<table>
<thead>
<tr>
<th>Name of Association</th>
<th>Meaning of the Name</th>
<th>Contact Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eudafano Women’s</td>
<td>“Lets Work Together”</td>
<td>c/o CRIAA SA-DC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P.O. Box 23778, Windhoek, <a href="mailto:criaawhk@iafrica.com.na">criaawhk@iafrica.com.na</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tel +264 (061) 220117</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fax: +264 (061) 232293</td>
</tr>
<tr>
<td>Meameno</td>
<td>They are Protected</td>
<td>P.O. Box 12041, Ondobe, Ohangwena Region</td>
</tr>
<tr>
<td>Tunetu</td>
<td>“We are satisfied”</td>
<td>P.O. Box 117, Tsandi, Omusati Region.</td>
</tr>
<tr>
<td>Lyependongula</td>
<td>“The Early Bird”</td>
<td>P.O. Box 113, Ohangwena Region</td>
</tr>
<tr>
<td>Pendapala</td>
<td>“Be Brave”</td>
<td>P.O. Box 761, Outapi, Omusati Region</td>
</tr>
<tr>
<td>Epandulo</td>
<td>“Gratitude”</td>
<td>Endola, Ohangwena Region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P.O. Box, 288, Oshakati</td>
</tr>
<tr>
<td>Diinina</td>
<td>“Keep it Strong”</td>
<td>Ongenga. Ohangwena Region, P.O. Box 262, Oshakati</td>
</tr>
<tr>
<td>Gwamiitayi</td>
<td>“A famous Local Family Name”</td>
<td>Nakheke, P.O. Box 122, Okahao, Omusati Region</td>
</tr>
<tr>
<td>Nkugoyepeongo</td>
<td>“Poor Women’s Haven”</td>
<td>P.O. Box 221, Ongangwa, Oshana Region</td>
</tr>
<tr>
<td>Mangundu</td>
<td>“Multitudes”</td>
<td>Okahao, P.O. Box 34, Okahao Omusati Region</td>
</tr>
</tbody>
</table>
Appendix 2

MARULA RECIPES

Marula oil is usually added to food already prepared and ready to be served. Marula oil is often cooked and given to guests as a condiment or relish ("omwai") on the table in a separate (clay). Some people do cook ingredients in marula nuts and oil but usually only briefly just before the meal is about to be served. Unless otherwise stated the following recipes were provided by the women of Eudafano.

1) Whole Pearl Millet or Sorghum Seeds (Omahola) with fresh Marala Kernels (Omaxuku)

"Omahola" is the Oshiwambo name given to millet or sorghum grain cooked and eaten whole, not stamped and made into porridge. A bit like rice.

1 cup whole millet or sorghum seeds
4 cups of water
3 teaspoons salt
1 cup marula kernels

In a saucepan boil four cups of water. Once the water is boiling place one cup of whole millet or sorghum seeds until it becomes soft (about 20 minutes). Drain the water and put in salt to taste. Mix in the fresh marula kernels and serve in a (clay) bowl.

2) Dried Spinach (Evanda) with Marula Oil (Odjove)

"Evanda" is the name given to any wild spinach-like plant that is boiled in water with salt, shaped into a flat cake and sun-dried. A bit like a vegetable biltong it can be stored for months (and if properly stored, for years). Later in the year when other vegetables are scarce the cake is rehydrated in boiling water. It has a very tasty and strong flavour.

1 pattie or cake (serves 3/4)
salt
Marula sausage (edi)
Marula oil (odjove)

Cook the dried spinach cake for a few minutes in salted, boiling water until soft. Remove from heat and drain water. Use a pestle and mortar (or blender) to crush and grind marula kernel into a fine paste. Sieve out solids. Add the marula nut paste to the saucepan of dried spinach and simmer for a further 15 minutes. Place in a (clay) bowl, add the marula oil (odjove), stir and serve. (See photo 19 on page 79).

3) Meat/Chicken/Dry Spinach with crushed Marula Nuts (Oshivelelwa)

1-2 kg Meat/chicken/dry spinach (evanda), dried meat (biltong, "eedingu") 1/2-1 cup marula oil (odjove) 1 cup Marula nut sausage (edi)
A little cold water
1 Onion
salt and fresh herbs to taste

Cook meat/chicken with salt in a pan. Boil the dried spinach in water until cooked. Add onions to meat/chicken/dried spinach. Take meat/chicken/dried spinach off heat and drain oil into a separate saucepan. Using a pestle and mortar (or blender) add a little warm water to the crushed marula sausage (edi) and grind into fine paste. Sieve out solids. Place oil from the meat/chicken/dried spinach back on a low heat. Add the sieved paste in with the meat/chicken/dried spinach until it dissolves nicely (like butter). Simmer for a further 5-8 minutes stirring continuously. Once blended, add the marula oil (odjove) and simmer for a few minutes, stirring continuously. Add fresh herbs if needed. Pour over the meat/chicken/dried spinach and serve in a (clay) bowl. (See photo 20 on page 79).

4) Salad of Beans (Oshingali)

"Oshingali" refers to a bean salad, often garnished with a paste of marula kernel and oil. (In fact any oil can be used, although marula oil is favoured as it is considered a luxury in north-central Namibia). The bean salad-nut paste blend is sometimes eaten with millet porridge to add a rich taste and smooth texture to an otherwise bland meal.

2 cups white beans (or any other combination of beans)
1 litre water
2 teaspoons salt
100g of nut sausage (edi)
1/2 cup marula oil (odjove)

Add beans to water and remove the outer skin. Cook until they become soft (20 minutes). Add salt to taste. Add the nut sausage (edi) to a little cold water, crush it and sieve it. Remove some of the water from the beans, add the paste and simmer for a further 10-15 minutes. Place in a (clay) bowl, add the marula oil (odjove) and serve.

5) Marula Nut Sweets

1 cup marula nuts (omaxuku or edi) I
cup sugar

Place sugar in a hot pan and melt, stirring continuously. Put in the marula nuts (omaxuku/edi) and stir together. Wet hands in water. Take a ball of sugar/nut mix and roll into a ball. Put in a dish. Cut into squares and serve cool.

6) Marula Cake with Chocolate (courtesy Witta Krohl)

80 gram margarine or butter
200 gram sugar
6 eggs
200 gram ground chocolate
300 gram marula nuts
100 gram breadcrumbs
1 teaspoon baking powder
Mix all ingredients together
Place in a baking tray
Bake 60-70 minutes at 165-175 degrees centigrade
Turn off the oven. leave for 5-10 minutes in warm oven
Decorate with melted chocolate while still warm.

7) Soft Porridge with Oshinwa or Omaongo (Etete)

Add Oshinwa (sometimes omaongo) to mahangu (millet) porridge to make a soft-textured porridge. "We sometimes use the old/sour oshinwa, called "Hengobe" ("black cow"), in cooking to add a pleasant aroma to millet porridge."

Take the old/unwanted oshinwa juice and put it in clay pot
Add the millet seed and soak it to soften it, instead of the usual water
After one day pound the grain to produce flour. ("It smells pleasant and adds a slightly sweet taste which is delicious for making traditional bread (omungome)"

Add the grain to oshinwa
Simmer and stir continuously for 10-15 minutes
Add sugar depending on the sweetness of the oshinwa.
"Kids really love it because it is sweeter than our traditional porridge (oshifima)." (Endola Association).

8) Chicken with Marula Oil (Oxuxwa mwaya Odjove)

This is probably the most famous marula dish in owambo and is often served to special guests.

Cook a whole chicken seasoned with salt
Once cooked, drain the remaining chicken stock into separate saucepan
Mix one cup of crushed marula kernel with one cup of water to make a thick nut sauce (omwai)
Pour the nut sauce and the stock over the chicken return to heat and simmer for 10-15 minutes until nuts have dissolved
Remove from heat. Pour marula oil over cooked chicken and serve in clay bowl.

9) Marula Nat Sauce (Omwai) (Courtesy, Nangula Ngitikua, from 'Tyapula Catering', Tel: 065 230184)

Remove the outer (brown) skin from the kernel (omaxuku). (The quickest way is to shake the kernel in a shallow basket/pan and blow off the skin)
With a little water pound the (white) kernel into a paste until soft

This basic marula nut sauce can be stored in the fridge for many months and used with foods such as chicken and evanda, and has the same cooking properties as butter. It adds a moist, rich texture and nutty flavour to sweet and savoury dishes.
Appendix 3 Praise Songs for the Marula Tree

Below are two marula praise songs written by members of Eudafano Women's Cooperative. This first poem has been written by the women of Pendapala Association, Ombalantu, Omusati Region (March 2001):

"The Marula Tree"

The conqueror of elderly men in Ombalantu with Pendapala\textsuperscript{18} 
The best of women in Okavu\textsuperscript{19} with Pendapala Association 
When it rains 
When it pours 
The tree becomes beautiful 
The leaves become green 
Fruits blossom 
On this important marula tree

The tree of cool shade 
Of its fruits we squeeze 
Of nuts we crack 
In oil we dip 
"Odjove" in Oshikwanyama or "Ondjenge" to the rest 
When ears itch 
We put in a drop 
Of the oil of this marula tree

The leaves and bark of the marula tree 
We of Amushila\textsuperscript{20} with thorns 
Never discard them 
For us they are the best manure 
To feed plants 
Even millet 
Or any other plant 
To give us food

Because of that our tree 
Provides us with a wood supply that never runs out 
Once we have removed the kernel 
Marula shells are plentiful and burn like oil

\textsuperscript{18} "Pendapala", literally, "be brave", is the name of the Eudafano village association of Outapi Town,
Omusati Region.

19 “Okavu” literally, "place of fine grained sand", is the traditional tribal area of Ombalantu.

20 “Amishila” is the family name of a local headman who traditionally had many women in his village.
The tree has the juice
Sung about by strong men
When they taste it
At the inner reception area
They sing the tune of Alkali
"Marula juice, marula juice, saturate the soul"
"The cattle of Shingongele" ²¹

Marula fruits hide in the branches
Whoever wants to feed eyes
To behold a charming tree
Come during the time of summer rains
Until autumn
Come such marula fruits
And taste the life saturating juice
We can only be thankful
For the gift we have been given

Below is a praise song written by Julia Nghishiilenhapo of Diniina Association, Ongenga, Omusati Region (March 2001):

"The Marula Tree"

So small and round and spectacular
A green fruit worth beholding
Falling in well-soaked soil
Grows a beautiful plant
With splendour it dispenses leaves
To become a seedling with tiny branches

After a few years
The tree has grown already
A big trunk
And branches tall and grand
Birds appear and later small, green fruits
Growing little by little

Now a spectacular tree
With beautiful leaves
It grows, spreading wide
With its fat trunk
Like a stationary elephant

²¹ Shingongele is the name of a rich cattle owner in the local area people sing about during the marula season.
With innumerable fruits
It shows its first sign in August
And into September
To finish in October
A beautiful scene
Dressed as if with earrings
A tree hanging so heavy it may fall

Look at Nakatunhu
Behold Nangadjo
Fipu is the best!
In November its fruits are full-grown
Near the end of December
Premature fruits fall to the ground
And the strong ones grow to maturity

From Kudilopepe we eat berries
In January and February we eat fresh pumpkins
And in March
Marula fruits drop mightily
Those not afraid of the heat become very busy
Squeezing the juice, and later extracting the kernel
During this time everyone is joyous
Drinking delicious marula juice
The juice talked about by chickens
Even by the door at the main entrance"
It will throw you down If you are not careful
Watch out! Onto dusty ground you will lie
As pale as a ghost

22 "Nakatunhu", literally "elevated place" and is derived from the word for an "anthill", referring to the prominent nature of marula trees on the flat landscape of Owambo
M "Nangadjo" refers to a marula tree growing within the palisade fencing encircling Owambo homesteads
M "Fipu" is the name given to the way children (and adults) take freshly fallen fruit from the ground, roll them in the palm of their hands to soften the skin, make a small bite-sized hole in the skin and suck the juice fresh from the fruit.
"Kudilopepe" is the name of the "early summer" season; derived from the name of the Omuye tree (Berchemia discolor) an edible fruit, eembe, which ripen the same time of year as marula fruit
26 The sound of people in a homestead as they drink marula wine; they sound like a clutch of excitable chickens
27 Referring to the traffic passing through the doorway (the number of greasy finger-marks left by passing people) as they enter and leave the homestead

83
The marula tree gives us so much
Food and many useful things
Out of the fruit we extract kernel
From the kernel we extract oil
We smear on marula oil to soften the skin
The remaining nut paste we process into body soap

When the season becomes warm
With excruciating heat
We take refuge and escape
Joyfully resting
In the cool shade of the marula tree
Which you willfully appreciate

Wherever the tree stands
It beautifies nature
Birds flock there
And even when the tree dies
We use its many parts
With a plentiful supply of dried wood and shells we make fire

What joy to talk of
What thoughts to ponder over
That now in modern times
Marula is being processed by machines
And the juice squeezed out
To your great satisfaction

Friends! Give thanks to the marula tree
It must be praised and respected
Let us plant and help them multiply
Let us give them water and make them happy
That they may multiply and spread across the country
That we may use them and not get poor

The benefits gained from even one marula tree
Cannot go to waste
Work must continue and expand
With respect and consistency
So that we can achieve something wonderful
In developing our country
## APPENDIX 4

### Table 1: Primary Uses of Marula Trees in North-central Namibia

<table>
<thead>
<tr>
<th>Part of Tree Used</th>
<th>Primary Uses (Farm, Household, (HH), Ceremonial)</th>
<th>Primary Responsibilities</th>
<th>Harvesting, Processing, Selling</th>
<th>For Sale</th>
<th>As Gift</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Tree</td>
<td>HH &amp; farm – shade for people stock, wild animals/birds</td>
<td>Most trees propagate Naturally from seed</td>
<td>No</td>
<td>no</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Leaf</td>
<td>Farm – feed for goats, fertilizer HH medicines</td>
<td>Men/boys</td>
<td>no</td>
<td>no</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Small branches</td>
<td>HH firewood, medicines</td>
<td>Women</td>
<td>no</td>
<td>no</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>farm – fencing</td>
<td>men</td>
<td>no</td>
<td>no</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HH &amp; farm – scions (potential use)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Big branches</td>
<td>Farm – truncheons (female trees only) fencing, troughs (male trees) HH – firewood, furniture, huts</td>
<td>women and men</td>
<td>no</td>
<td>no</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HH – firewood, furniture, medicines</td>
<td>women and men</td>
<td>yes</td>
<td>yes/friends</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Trunk</td>
<td>HH – firewood, furniture, medicines</td>
<td>women and men</td>
<td>no</td>
<td>yes</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Bark</td>
<td>HH – firewood, ‘relax’ (hair care), edible insects, medicines</td>
<td>women</td>
<td>no</td>
<td>no</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Roots</td>
<td>HH – medicine</td>
<td>women</td>
<td>no</td>
<td>no</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Fruit juice &amp; pulp</td>
<td>HH – fresh fruit non alcoholic drinks, medicines, edible insect (family consumes) Ceremonial – festivals/celebrations Market place – sale of oshinwa and omaongo</td>
<td>women produce</td>
<td>women (men consume)</td>
<td>women (men consume)</td>
<td>yes</td>
<td>yes See Table 2</td>
</tr>
<tr>
<td>Part of Tree Used</td>
<td>Primary Uses</td>
<td>Primary Responsibility</td>
<td>For Sale</td>
<td>As Gift</td>
<td>Price</td>
<td></td>
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<td>----------</td>
<td>---------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Far, Household (HH), Ceremonial)</td>
<td>Production/Harvesting (HH/Farm)</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Fruit Skin</td>
<td>Farm – fertiliser, pig/goat feed</td>
<td>women and men</td>
<td>no</td>
<td>no</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HH – jam/jelly, mosquito repellent, drinks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nut (shall)</td>
<td>HH – firewood, ‘sandpaper’, Games (<em>owela</em>)</td>
<td>men</td>
<td>no</td>
<td>no</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>medicine, ‘cement’,</td>
<td></td>
<td></td>
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<tr>
<td>Kernel</td>
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<td></td>
<td>medicines</td>
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<tr>
<td></td>
<td>Ceremonial – festivals/celebrations</td>
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<tr>
<td></td>
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<td>yes</td>
<td>N$12-17*</td>
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<tr>
<td>Oil</td>
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<tr>
<td>Event</td>
<td>Gender</td>
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<td>Yes</td>
<td>Price</td>
<td></td>
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<tr>
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<td>women</td>
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<tr>
<td>Market place – sale of marula oil</td>
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<td>yes</td>
<td>N$10-15*</td>
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</table>

**NOTES:**

1. Marula is a natural factory tree: Every part of both male (non fruiting) and female (fruiting) trees can be used.

2. Marula supports a wide range of other industries and services. For example, the medicinal uses of marula are numerous. Although people do not pay for home-made remedies produced within the household, people do pay for the services of traditional healers who may use one or more parts of the marula tree. Similarly, people do not pay for marula timber but the furniture produced for it can be sold. Directly and indirectly then, marula is sold in many ways.

3. Marula promotes the use and manufacture of other traditional products such as baskets, clay pots, drums as well as promoting economic and social links between rural and urban markets/populations and between Namibia and overseas markets/populations.

4. In terms of the marketing and advertising of marula, the ‘hidden’ marula resources – the rich cultural and intellectual knowledge of marula use – cannot be underestimated. The long history of marula use in north-central Namibia gives women there a unique comparative advantage over many other marula-producing regions.
By promoting marula we are, in turn promoting the continued practice and expression of culture. Marula products are still used in festivals and celebrations and through contemporary songs, dances and stories, marula helps promote the local culture and history to a wider audience. Apart from direct incomes injected into rural households the promotion and export of marula therefore, has a number of positive spin-offs; 1) it promotes the marula resource (and the image of marula and trees) to an otherwise uneducated audience, 2) It promotes the country (Namibia), and it promotes local culture to a potentially large market. *N$12.00 is the typical price women receive for 1 kg of marula kernel (*omaxulu*) sold in local markets in the north. (women sell *omaxulu* in tin cans cut from a can of engine oil (roughly 250 grams) and receive N$3.00 per 250 gram scoop. (Where N$3.00 per 250 gram scoop X 4 = approx. N$12.00 per kilogram). N$17.00 is the price women receive for 1 kilogram of marula kernel sold directly to CRIAA SA-DC.

N$10.00 to 15.00 is the typical price women receive for a 200 ml (liquor) bottle of marula oil produced using traditional methods and sold in local markets in the north. Its should be noted that CRIAA SA-DC/Eudafano marula oil, after cold pressing the kernel into oil in Windhoek, costs more than the basic N$17.00 currently paid to Eudafano members for each kilogram of kernel supplied. Transport, processing, packaging and marketing costs add substantial costs to the raw kernel price of N$17.00 per kilogram. On the other hand, traditional oil extraction methods require a lot more kernel to produce the same amount of oil (indigenous extraction rates have not been measured) compare to the cold press machinery employed by CRIAA SA-DC to extract marula oil (30-35% extraction rate).

Source: Eudafano Women’s Co-operative/CRIAA SA-DC (October 2001)
<table>
<thead>
<tr>
<th>Location</th>
<th>Market Price (N$)</th>
</tr>
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<tr>
<td></td>
<td>$Oshinwa$</td>
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<tr>
<td></td>
<td>(Unfermented juice)</td>
</tr>
<tr>
<td></td>
<td>(N$ per litre)</td>
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<td>Okahao open markets$^1$</td>
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<td>Ombalantu rural town market</td>
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</tr>
<tr>
<td>Ombalantu (Outapi) town markets$^2$</td>
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<td>Ohangwena open markets$^3$</td>
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<td>Oshakati open market</td>
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<td>Windhoek</td>
<td>do not sell</td>
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<tr>
<td>CRIA SA-DC</td>
<td>do not sell</td>
</tr>
</tbody>
</table>

Source: Eudafano Women's Co-operative (October 2001)

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$^1$ Okahao Association

$^2$ Ombalatu Association

$^3$ Ohangwena Association

* N$17.00 per 350 ml is the cost price for marula kernel, approximately N$35.00 per litre, where 1 kilogram is equivalent to approximately 350 ml oil when extracted using the CRIA SA-DC marula press in Windhoek. N$10-15.00 is the price women for a 200 ml of marula oil in local markets in the north. Women will employ traditional oil extraction methods which require a lot more marula kernel for the same amount of oil.