

Use of marula products for domestic and commercial purposes by households in North-Central Namibia

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ABSTRACT

This report is the result of a research done in North-Central Namibia, investigating the use of marula products at household level, and the existing and possible future use of marula products for local and/or (inter)national commercialisation.

The report describes the study area, the general characteristics of the households interviewed, and the importance of the different marula products on people's livelihoods, as well as the resource base, and tenure and access issues. The main focus of the report is on the influence of marula on the social, financial, cultural, natural and physical capital, and it tries to assess the impact of marula commercialisation on these different forms of capital.

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1. INTRODUCTION

This report presents the findings of a household survey done in Namibia, which forms part of a larger Forest Research Project on marula use and commercialisation. The same survey has been conducted in several areas in South Africa, and a similar exercise was done in Guyana on crabwood use and commercialisation. Furthermore, resource inventories, commercial chain analyses, and policy surveys have been carried out in all study areas in order to gain a better insight into the pros and cons of forest product commercialisation, and to develop guidelines for a socially and ecologically sustainable future.

2. STUDY AREA

The household surveys have been conducted in North-Central Namibia, in an area formerly known as Owamboland, and currently part of the Oshana, Oshikoto, Ohangwena, and Omusati Regions. Former Owamboland is home to almost half of Namibia's population, an estimated 800,000 people are living in the area.

The climate in former Owamboland can be described as semi-arid. It is characterized by high temperatures, and rain that varies greatly in amount and timing. Average rainfall per year is 350-500 mm, of which most of it falls during the summer months, from November to April. The soil types are largely dominated by mixtures of sands and clays. Their potential for crop production is low in many areas due to poor water-holding capacity, low nutrient content, high salt content, and hard layers of clay below the surface. The topography in the region is characterized by an extremely flat plain, although of great importance for agriculture is the level of micro-elevation, which is relative to groundwater levels and hardpans. Large areas have been deforested as a result of the heavy demands for wood, which has mostly been used for housing, fencing, and fuel. The population density is highest in the Cuvelai, because of the availability of water and the relatively good soils.

The Owambo people settled in the area, mainly along the Cuvelai, hundreds of years ago. They consisted of 8 tribal groups, each with their own King, culture, and dialect. Only two groups, the Ndonga and the Kwaluudhi, still have their own King today, but all the tribal authorities, with their sub-headmen, village headmen, senior headmen, and Chief/King, are still functional, and to some extent acknowledged by the Government. The traditional authorities have their own courts for settling disputes, for example, and are in charge of allocating land and grazing rights. Disregarding the tribal boundaries, there are regional governments in the four above-mentioned political regions, divided into 41 constituencies, which are governed by governors and councillors. On a lower level are the local governments, which are responsible for the affairs of towns and larger villages.

In the rural areas most people are involved in subsistence farming, with mahangu (pearl millet) and sorghum as their main crops. Livestock in the area mainly consists of cattle,

goats, donkeys, and poultry, with cattle ownership being most unequal. The success of farming is dependent on adequate rainfall, but more on the availability of labour at critical times in the agricultural cycle. Many young people, however, leave the rural areas to look for employment and another way of life in the urban areas. There are three main urban centres in former Owamboland, all alongside the main road, within a range of about 35 kilometres. These urban centres are growing, both in size and in economic terms. But the people in the rural areas retain close links with the people living in the urban areas in Owambo, and incomes from employment and diverse business activities contribute to, especially, the larger rural households.

It should be noted that although subsistence farming is the main activity for most households living in the area, subsistence farming alone represents a poor, and in some years insufficient, means of survival. Due to poor soil quality and uncertain climatic conditions, people pursue diversification in agriculture and pastoralism, and diverse economic options. Within this system, people are to a large extent dependent on tree products and other natural resources. Another consequence of the poor soil quality and the uncertain climatic conditions is that the farms are spatially spread; people are not living in concentrated villages, and because of the distances households live quite independently from one another.

3. METHODS

Within the study area, we have chosen four areas where we have conducted the household surveys. The resource inventory, policy survey, and the beginning of the commercial chain analysis were done in the same areas. In our choice of areas, we took the following factors into consideration:

- (a) In all areas chosen, the Eudafano Women's Co-operative, which collects and sells marula kernels on behalf of rural producers, is active, although in some areas the level of organisation and involvement is higher than in others.
- (b) Marula availability. In all areas marula trees grow, but in some areas they are more abundant than others.
- (c) We chose to conduct the research in areas with different soil & vegetation types.
- (d) Ethnicity. The 4 areas are inhabited by different ethnic groups: The Kwanyama, Kwambi, Ndonga, and Mbalantu.
- (e) Distance from the main urban centres. We thought this could particularly have an impact on the degree of commercialisation.
- (f) Finally, our choice of areas was restricted by logistical aspects, as not all areas were accessible during the rainy season.

We planned to interview 15 households in each of the 4 areas, but in Outapi, due to logistical and organisational constraints, and the unwillingness of people to answer questions other than directly involving marula, we only conducted 10 interviews. Instead we decided to expand the number of households in the large Ohangwena-Ondombe area to 20. The total number of surveys done in Namibia thus adds up to 60. Because of our limited sample, we will regard the study area as one, unless significant differences are seen between the different sites.

For the household interviews, we made use of a standardised questionnaire developed by the Southern African project team, covering the following areas:

- (a) Household details
- (b) Use and trade in marula products (short checklist)
- (c) Fresh marula fruit
- (d) Marula jam
- (e) Marula wine/beer
- (f) Marula kernels
- (g) Marula wood
- (h) Medicines from marula
- (i) Other marula products
- (j) Tenure, access, and control of marula
- (k) Resource availability
- (l) Physical assets/ wealth status
- (m) Financial and social capital, and
- (n) Land-based activities

4. RESULTS

This section describes the results from the household survey and the additional qualitative data gathered. The results basically follow the structure of the questionnaire as described in the methods above.

4.1 Characteristics of households.

4.1.1 Residency time in villages

North-Central Namibia has a history of being Namibia's labour reservoir, but has never been subjected to a system of forced removals, like areas in South Africa for example. The people living in the rural areas of former Owamboland might have lived in towns for a while, been in exile, or have married into another village, and obviously, as the population grew, the inhabited areas have expanded as well, but land is basically inherited from generation to generation. Therefore, many respondents claimed they have lived in their village since birth, while some women said they came to the village when they got married. The average period of residency in our sample is 40.0 years (standard deviation 19.9, standard error 2.6)

4.1.2 Type of household head

34 of the 60 households interviewed (57%) are headed by married resident men. In 33% of the cases a single, divorced, or widowed female is the head of the household, and in 8% of the households an absent (married) male is regarded as the head. Only in one case,

finally, the household was headed by a single resident male. It's interesting to note that all de-facto heads in our sample were women, either wives or sisters of the head.

4.1.3 Household size and structure

The average size of the households in our sample is 11.9, with a standard deviation of 6.0. On average, there are slightly more women (6.3) than men (5.6), and more adults (6.5) than children (5.3), although the latter is somewhat misleading, as most of the migrant household members (on average 1.9) are adults.

4.1.4 Occupation of household members and sources of cash income

In our sample, 37 of the 60 households (62%) have one or more members with a formal job (this includes migrant household members), 6 households (10%) only get an income out of pension(s), 3 households (5%) depend on self-employment only, and 7 households (12%) have no income whatsoever. On average, there are 1.3 household members with a formal job, 0.8 are self-employed, 0.8 members are pensioners, 2.7 members are unemployed, 5.0 are scholars, and 1.4 household members are pre-school children.

It should be noted that most household members with a formal job are working in towns, and not actually living in the villages. Looking at the resident household members only, one finds that only 30% of the households have one or more members with a formal job, 23% of the households get an income from pension(s) only, 5 households (8%) depend solely on self-employment, and in 10 households (17%) there is no resident member with any income. The average household in our sample has 0.37 resident members with a formal job, 0.52 members that are self-employed, and 0.78 resident members receiving a pension.

The average household income from resident members is N\$ 799. However, this average is significantly influenced by 10 households with a relatively high income (standard deviation 1249!), and a more realistic picture of household income can be seen in the distribution of incomes. As shown in table 4.1.1, almost half of the households in our sample have an income of N\$ 250 or less, while in only 30% of the cases the added monthly income of resident members is higher than N\$ 500.

Table 4.1.1 Distribution of incomes

Household Income	Number of households	Percentage
0 – N\$250	29	48%
N\$251 – N\$500	13	22%
N\$501 – N\$1000	8	13%
N\$1000 – more	10	17%

Two-thirds of the households have migrant household members. 22% of them come 'home' weekly, 21% come to the village most months, 38% visit only 2 or 3 times a year, during the holidays, and 19% of the migrant household members come 'home' once a year or less. It was difficult to establish how much the migrant household members contribute to the household income. Most respondents didn't give us any figures, but just said that some would help them with money, paying school fees, or bringing food or other goods. Those migrant household members that live in the nearby urban areas have their children schooling in the village, come home weekly, and typically contribute most to the household resources. The contribution of household members that live far from the village, don't have a formal job, and come home occasionally, is insignificant.

4.1.5 Education

The highest educated household member on average went to school for 11.9 years (standard deviation 2.1). 25% of the households had a member that finished college (teachers, nurses) or university. It should be noted that those with the highest education are typically the migrant members that are working in the urban areas. The average education of the head of the household in our sample was 7.8 years, with a standard deviation of 4.0.

4.1.6 Physical assets and wealth indicators

As indicators of general household wealth, several physical assets were reviewed. In our sample, 14% of the households owned a TV, 16% had a vehicle, and 16% of the households could go around on a bicycle. A radio is kept by virtually all households (94%), however old or small it is, as it is an important tool to keep them up to date with whatever is going on outside the village.

33% of the households cook inside, 88% of the households cook outside, and there is obviously an overlap of people who do both. The consumption of meat varied from twice a year to 6 times per week. The average meat consumption is 4.0 times per month, with a standard deviation of 5.1, but as much as 47% of the households eat meat once per month or less. Water consumption is more equally distributed, and a better indicator of household size than of household wealth. The average consumption is 88 litres per day (standard deviation 40 litres). 16% of the households had their own tap, and didn't know their daily water consumption.

The average number of rooms in our sample was 10.8 (standard deviation 3.9) per household. However, the number of rooms is a better indicator of household size than household wealth. The building materials used, on the other hand, are much more significant in determining the wealth of the household. A homestead typically consists of one main structure, which is a relatively good indicator of household wealth, and many other rooms, often made from traditional materials. Virtually all households, including the wealthy ones, have traditionally made huts in their homestead. The materials from which the main structure and other dwellings are made are shown in table 4.1.2 and 4.1.3.

Table 4.1.2 Building material used for the walls of the main structure and the other dwellings

Materials - walls	Main Structure	Other Dwellings
Fired bricks	0%	0%
Corrugated iron	18%	10%
Plastered cement blocks	33%	18%
Cement blocks unplastered	18%	31%
Local materials (wood, mud, clay, dung, reeds etc)	31%	100%

Table 4.1.3 Building materials from which the roofs of the main structure and the other dwellings are made

Materials- roof	Main Structure	Other Dwellings
Tiles	0%	0%
Corrugated iron	69%	38%
Thatch	31%	98%

N.B. Note that the percentages for the other dwellings exceed 100% as different materials are used for different structures.

4.1.7 Land-based farming activities

All households interviewed have an arable field and cultivate it. 13% of the households owned a second field in another village. The average size of the fields is 4.3 hectares, with a standard deviation of 2.2. Typically, only part of the field is suitable for crop cultivation, while the other part is left to be a more 'bushy' area. Cultivating the space within the homestead is not so common, only 9% of the households are growing something other than flowers on their home plot. In any case, as the size of the area is limited, so is the cultivation. One may grow a few tomatoes there, or chilli, or some maize.

Without a doubt, the most important crop grown in the area is the staple food mahangu, or pearl millet. Other common crops and the percentage of households in our sample growing them are shown in table 4.1.4.

Table 4.1.4 Crops grown and percentage of households cultivating them

Crop	Percentage of households cultivating
Mahangu	100%
Beans	100%
Sorghum	94%
Pap melon	94%
Round nuts	89%

Sweet water melon	88%
Pumpkin	78%
Maize	70%
Tomatoes	61%

Other vegetables and fruits mentioned were; kalebas, potato, sweet potato, cabbage, lemon, guava, and other fruits. Exotic fruit trees are not very common in the area, but indigenous fruit trees like Eembe and Eenyandi are regarded as important resources. Different species of spinach are found and used by all of the households, but as they grow wild and are not cultivated, spinach is not mentioned here.

42% of the respondents sell agricultural products sometimes. The main crops sold are mahangu (41% of the sellers), round nuts (27%), and sorghum (23%). Other agricultural products sold were tomatoes, maize, beans, pumpkins, and chilli. Only 2 of the households interviewed get a significant income out of selling these products, they earn between N\$2000 and N\$ 3000 a year. The average annual income from agricultural sales for the others is only N\$ 100.

In some areas of North-Central Namibia people are rather sensitive about the ownership of cattle and other livestock, as it is the main indicator of their wealth. Only 38 of the 60 respondents were willing to give us information about the subject, and some of them, I presume, may have lied about it. The results are shown in table 4.1.5.

Table 4.1.5 Ownership of livestock

Livestock	% of households owning them	Average number of livestock among owners	Overall average number of livestock (all resp)
Cattle	74%	12.6	9.3
Goats	89%	24.4	20.0
Pigs	63%	3.5	2.2
Sheep	0%	0	0
Donkeys	13%	4.0	0.5
Chickens	100%	18.2	18.2

Oddly enough, only the data regarding donkeys, which are generally regarded as of minor importance, seems to be very unrealistic. Donkeys are seen in large quantities all over Owamboland and yet only 13% of the households claim to own them.

Livestock, especially cattle and to a lesser extent goats, are generally seen as people's savings accounts. People don't like selling them and only do so in exceptional cases, when they need money for a specific cause. 36% of the households interviewed claimed that they have sold livestock in the last 3 years, but only 3 of them referred to selling a cow, and 4 households had sold a goat. Among the sellers, the average income from livestock this year was N\$38, last year they earned N\$207 on average, and the year before N\$109.

4.1.8 Membership of groups, societies, and saving schemes

Membership of groups, clubs, or societies other than the church, and in some areas the Eudafano Women's Co-operative, is not very common in the rural areas of North-Central Namibia. Table 4.1.6 shows the percentages of households with membership in the different groups.

Table 4.1.6 Households with members that belong to groups or societies

Church group	54%	Reading group	2%
EWC	31%	Sewing group	2%
Women's' group	15%	Political group	2%
Farmers Union	15%	AIDS group	2%
Sports Club	13%	Teachers' Union	2%
Cultural group	11%	Brick project	2%
Dance group	2%	Youth group	0%

Burial societies are unknown in our study area. Rotating loan schemes have been introduced in the past few years, but are mainly functioning within the urban areas. Two of our respondents, both living near a town, were members of such a scheme, and they contributed small amounts of money weekly or monthly. 17% of the respondents said that their household had an insurance policy, and 31% claimed they had a savings account. Contributions were either irregular or unknown. Many of the interviewed mentioned that their formally working migrant household members would probably have insurance policies and savings accounts, but that they didn't know anything about them. I also noticed a reluctance of respondents to talk about the subject.

4.2 Use of marula products

Virtually all respondents eat marula **fruits** fresh (97%), and make and use marula wine (100%), and marula juice (100%). 78% also explained that they cook a kind of porridge out of the fruits, after both the wine and the juice have been extracted. Only 2 households (3%) had made marula jam before. Others had simply never heard about it, or didn't know how to make it.

As for the marula **kernels**, all households make and/or use cooking oil, mix the kernels with spinach or other food, and make a kind of soup out of it. All but one household (98%) also eat the kernels whole, and eat the cake (left over from making the cooking oil). 68% of the households feed this cake to their animals sometimes. 17 households in our sample (28%) still use marula oil as a skin moisturizer, others see this use as something from the past and prefer modern cosmetic products, and for some the whole idea of using marula oil on the skin was new. Some respondents mentioned that marula oil can be used as a medicine, for treating eye problems and coughing.

Marula **wood** is used as firewood by most of the respondents (97%), mainly if they find the dry pieces on the ground. 78% also uses marula wood for fencing, housing, or roofing poles at times. Those who don't say that the wood is too soft, that they don't have any trees to use themselves, or that they don't want to cut big branches from their marula trees. 52% of the households use marula wood for making utensils sometimes, thereby mainly referring to using pieces of wood to sit on. Other utensils mentioned were food trays for pigs, and containers for making an alcoholic beverage out of eembe. Some respondents said they occasionally cut off marula branches to give to animals during times of severe drought. None of the households, finally, uses marula wood for carving curios. It should be mentioned, however, that woodcarving is not really part of Owambo culture.

As a marula **medicine**, chewing the leaves and branches or cooking them as a tea for treating coughing is the most well-known. 52% of the respondents use it sometimes. However, most respondents added that they thought of it as a bit old-fashioned and not very effective, and they preferred going to the hospital. Some, in particular the younger women that we interviewed, didn't even know about it. Using bark as a medicine was only recognized by one respondent, and 3 women (5%) use roots as a medicine sometimes. Most people, though, had never heard that marula bark or roots could be used for treating any ailment.

Caterpillars that are found on marula trees are eaten by 30% of the households. Most of the women added that they are only eaten by the old people. Some mentioned that the caterpillars are also more difficult to find these days. Most interviewed (97%) didn't know that the **larvae** from marula bark are edible. Only two of the households actually did eat them. One of the respondents said that the larvae are thought to be poisonous. 37% of the households use burnt marula bark as a **hair relaxer**. Most of the users added that it works very well, but that it is really strong and one has to be careful not to burn the skin. It was also said that the young women and girls nowadays prefer the modern products from the shop. The **seeds** or 'stones', finally, are being used as owela game pieces by 73% of the households, and all households burn them as firewood after the kernels have been extracted. Table 4.2.1 summarizes the above findings.

Table 4.2.1 Percentage of households using marula products

Marula Use	% of HH	Marula use	% of HH
Eating fruits	97%	Wood carving	0%
Wine (omaongo)	100%	Wood for utensils	52%
Juice (oshinwa)	100%	Firewood	97%
Porridge from fruits	78%	Housing/fencing poles	78%
Jam	3%	Bark as a medicine	2%
Eating kernels	98%	Roots as a medicine	5%
Cooking oil (ondjove)	100%	Leaves/branches as medicine	52%
Cosmetic oil	28%	Edible caterpillars	30%
Use kernels in recipes	100%	Edible larvae	3%
Eat the cake	98%	Hair relaxer	37%
Cake as an animal feed	68%	Nuts for game pieces	73%

'soup' from kernels	100%	Empty nuts as firewood	100%
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4.3 Marula fruits

4.3.1 Harvesting of fruits.

Marula fruits are typically gathered and processed under the tree. When fruits are ready neighbours are called to help process the fruits. The higher the quantity and/or quality of the fruits, and the stronger the social bonds, the more women will come. Women rarely process the fruits alone or with members of their own household only, the group of women (and girls/children) can vary from 2 to 15. As they don't go to collect the fruits and take them home but pile the fruits as they are busy processing, quantifying the amount of fruits gathered is virtually impossible. Furthermore, when we asked the women to try and estimate the number of baskets or buckets processed each time, they stressed that this depends on the tree, and the size and the quantity of its fruits. Another confusion lies in the fact that some will mention the amount of fruits that they gather personally, while others will refer to the total amount of fruits gathered by the group. To illustrate the complications of the quantification of fruit collection; some respondents said they collect 2 baskets of fruits each time (10-30 kg, depending on the size of the basket, and the weight of the fruits), others said they had at least 50 baskets each time (250-750 kg). So, although all interviewed did make some wild guesses in the end, it seems pretty useless to do a number of complicated calculations and come up with a figure that is not really based on reality. Instead, we should use the more accurate measurements that were done in the resource inventory.

The earliest fruits fall in December and the latest in June. The height of the marula fruiting season in North-Central Namibia, though, is from the beginning of February to the end of April. The frequencies of collection given by the respondents mainly refer to this 2.5 month period.

All households participate in the processing of fruits. One third of the households interviewed process marula fruits almost daily during the fruiting season, 5-6 times per week. On average, the households collect/process marula 13.6 times per month, with a standard deviation of 7.5. The frequency of harvesting / processing depends more on the availability of unemployed able-bodied women in the household, on the strength of social ties, and on the abundance of trees in the area, than on the number of trees in their own fields.

78% of the households collect and process fruits in their own fields, 82% do the same in the neighbours' fields. Only one respondent mentioned harvesting fruits in a communal area, others said there are either no communal lands or there are no trees there.

4.3.2 Use of fruits

All of the interviewed indicated that the most important use of marula fruits is making omaongo (marula wine). Making oshinwa (marula juice) invariably came in second. Fresh fruits are being eaten by all but two households. Again, it is difficult to quantify

this. It was mentioned that many schoolchildren eat marula fruits to and from their way to school, and that other household members also eat the fruits whenever they feel like it, often to quench the thirst during and on their way from working in the fields. That is, if no marula wine is available at the time.

The concept of selling fruits is unknown in our study area. None of the respondents ever sold any fruits or heard about anybody selling fruits. Giving away marula fruits as such is also not really done. One typically gets invited to process the fruits, whereby half, most, or all of the wine is given to the owner of the tree, and every one takes home the nuts with the remaining flesh of the fruits that they have processed. Only one respondent said that a friend with a lot of trees and little time lets her collect as many fruits as she wants and doesn't ask anything in return. The stealing of fruits is also not done, everyone knows one should ask permission from the owner of the tree, and there are seemingly no transgressions of that social rule.

4.4 Marula wine and juice

4.4.1 The culture of making and drinking omaongo

Making omaongo (marula wine) is a social event. Women gather under a tree, some of them every afternoon after the hard work in the fields, and make omaongo while socializing, singing, joking, and gossiping. It's a women's thing. Some also mentioned how making omaongo is a mechanism for teaching girls how to become women. There's also the excitement of the marula season, as the smell and taste of marula makes everybody happy, and emphasizes the fact that a time of relative abundance has come after the long dry season.

Drinking omaongo is a social and cultural event as well. In the past, omaongo could only be drunk at the headmen's house, where all men were invited to special marula parties. Since Independence, women are also allowed to drink omaongo, and there are not only parties at the headmen's house, but everywhere. For three months of the year everybody feels happy and young, and there are plenty of songs, dances, and stories expressing this time of festivity.

4.4.2 The process of making omaongo

For making omaongo, women use a cow horn to puncture the leathery skin of the fruit. The juice is squeezed out in one bucket or clay pot, and the remaining seed and flesh goes to another container. The juice is then simply left to ferment. There are no recipes. If the fruits are very sour, one may add some sugar, and if the juice is very thick, water may be added, but these are more exceptions than rules. The oshinwa (non-alcoholic juice) is made by adding water to the remaining seeds and flesh. Oshinwa is the traditional drink for women and children. Since Independence, though, the traditional rules in this regard have softened, and most women prefer to drink the alcoholic beverage.

On the question of who taught them how to make omaongo, the respondents invariably answered ‘mother’ and/or ‘grandmother’, as all of them accompanied them making omaongo when they were little girls. Two thirds of the respondents experience no problems in making omaongo. One third said that their hands can start hurting from squeezing too much, or from the horn damaging the skin. Getting tired from it, walking far distances, the duration of the process, and finding customers before the wine expires, were all just mentioned once. On the shelf life of omaongo, we got quite a variation in answers. 15% of the respondents said that the wine can be stored up to a year when one keeps it in a clay pot underground, and wets the surrounding soil regularly. Keeping it in the fridge was said to extend the shelf-life to 3 months, although few people had that option. 30% of the respondents claimed that omaongo can only be stored for 1 or 2 days, and in most of the answers the shelf life was estimated somewhere between 2 and 7 days. Many respondents added that the shelf life of omaongo is to a large extent dependant on the fruits used.

4.4.3 Omaongo quantified

As with the fruits, the quantities of omaongo made per season proved to be a difficult question as well, especially for those women who don’t sell the wine, but drink it and give it away as they make it. I do, however, think the estimates given here are a bit more accurate, as unlike the fruit harvesting amounts, the amounts of wine made will at least reflect the total amount of the household.

In all areas the women agreed that last year was a very bad marula year. Some women had already made more omaongo when I interviewed them in March this year, than they had in the whole season the year before. The average number of litres last year was 146 (Standard deviation 183!), the year before the households on average made 100 litres more (245, standard deviation 263!).

Unlike the fruit harvesting, the amount of marula wine made depends more on the ownership of good marula trees, than on the availability of female labour in the household. Cultural tradition prescribes that part or all of the omaongo made goes to the owner of the tree. In the Endola area those women who don’t own trees are the best off; they can still take half of the omaongo home. In the Ohangwena and Outapi areas different arrangements are made, but most of the omaongo stays with the owner of the tree. In Ondonga culture finally, the owner of the tree is not obliged to give the processors any of the omaongo, although sometimes they may give a cup or two.

In all areas the neighbours do take home the nuts and remaining flesh of the fruits that they have processed, so they will still be able to make oshinwa, and decorticate the kernels afterwards. In addition, the lucky owners of many good trees that end up with a lot of omaongo are expected to host parties and invite all neighbours and friends to come and enjoy the fruits of their labour.

So although there is not always a direct profit from making omaongo, most women are still keen to process their neighbours fruits for a number of reasons; it strengthens their

socio-economical bonds, they get direct access to the kernels and the oshinwa (juice), they enjoy participating in the making of omaongo as a social event, and they will still enjoy the omaongo made by being invited to drink at the neighbours house. In these ways everybody picks the fruits of the omaongo season, regardless whether one owns marula trees or not.

4.4.4 Omaongo commercialization

Traditionally, one is not supposed to sell omaongo. It's a commodity that is to be shared with neighbours, friends, relatives, and visitors, and especially the more traditionally minded people are opposed to commercialising it. Factors determining whether a household sells omaongo or not, are therefore mainly the mindset of the people, and to a much lesser extent the availability of omaongo. Household wealth and closeness to urban centres seemingly has got little to do with it.

In Endola, we found two friends processing omaongo under a tree. One was relatively open and talkative, and proved to be a real businesswoman, selling omaongo, kernels, and other agricultural products, while her friend and neighbour, of the same age, said she couldn't sell anything, because she felt 'shy' about it. Her friend kept trying to convince her to sell omaongo, and she really needed the money to pay the school fees of her little sisters, but she still felt very uncomfortable about it. Another woman said she started selling omaongo when she linked up with the Eudafano Women's Co-operative, as she suddenly realized that 'everything is money', and she had never seen it like that before.

In our 'random' sample we found that in some areas all neighbours were selling omaongo to some extent, while in other areas nobody did. The sample can therefore hardly be representative for the whole of North-Central Namibia. In Endola, 87% of the women interviewed were selling omaongo, in Ondangwa 33%, in Ohangwena 30%, and in our Outapi sample finally none of the respondents had ever sold omaongo. The overall percentage is 40%. Of all the households selling, 46% started selling omaongo this year or last year only, while 25% of them have been involved in the trade for longer than 5 years. Those households that are selling omaongo sell, on average, 4.3 times per month, with a standard deviation of 3.0. The number of litres sold each time averages 22, with a standard deviation of 15.

17% of the sellers sell omaongo in the main urban centres only. They spend N\$10-N\$20 on transport, go to the open market with a 25 litre container of omaongo, and sell it for N\$ 4 per litre. They always sell everything they bring, though the time it takes selling the 25 litres of omaongo varies from 5 minutes to the whole day.

29% of the sellers in our sample sell their omaongo locally only. This can be at a local centre of cucashops, a local market, pension market, or on the main road. No transport costs are involved as these places are typically close to their homes. The price for a litre is N\$ 2, for a smaller cup one charges N\$ 1. The local sellers typically sell 5 litres per day, less than they would in the urban areas, as most of the local people have omaongo themselves, or drink it at their neighbours' house. Selling omaongo locally has an added social value though, as they meet their neighbours, and catch up with the latest news.

21% of the sellers only sell omaongo from home, when people are asking for it. This can

be a 25 litre container occasionally, or smaller amounts of omaongo on a more regular basis. The standard price is N\$ 2 per litre.

33% of the omaongo sellers finally, sell both in urban areas and in the local centres and/or from home. So even though they know that they can get more profit in the main towns, they still opt to sell at the local cucashop or from home for a significantly lower price.

All selling of omaongo is done by women, and all money of sales goes to the women, be it the seller, producer, head's wife, or female head of the household. If it's a combined effort between women, the money is often split or spent on household needs decided on together. Interesting to note is also that none of the sellers buys omaongo from their neighbours or a local cucashop to sell it again in the urban areas. All the women asked felt that that was bad practice. They could sell for their neighbour, but then the profit would also go to their neighbour. The idea of making money out of their neighbours or friends this way was seen as immoral.

All respondents still give away a considerable amount of their omaongo to their friends, neighbours, visitors, and relatives. 42% of them said that they, or other members of their household sometimes buy omaongo. 84% of the buyers claim to buy marula wine only occasionally, the other 16% twice a month on average. It doesn't involve huge quantities, all buyers only buy 1 or 2 litres or cups every time. People buy omaongo mostly from the neighbours or at the local cucashops, or sometimes when they are in other towns or villages.

4.5 Marula Kernels

4.5.1 Kernel use

The oily and protein rich marula kernels are a highly appreciated source of food. Eaten as a snack while decorticating the nuts, or roasted, made into a cooking oil which is served with special dishes, made into a soup, or mixed with wild spinach or other food, it is also a very versatile type of food, which adds a lot of taste to the limited sources of food that are available in the area. To illustrate the importance of marula kernels, all of those interviewed use marula kernels in most of the above-mentioned ways.

4.5.2 Kernel extraction

Although of major importance as a source of both nutrition and enjoyment, the extraction of marula kernels is not quite a social event as the making of omaongo. Kernels are extracted in the homestead on a household level. 20% of those interviewed said that neighbours would come and help them with kernel extraction sometimes, but more as an exception than a rule. Half of them said that they had to prepare a meal and drinks for their neighbours if they wanted them to come. Some stressed that one would only ask neighbours to help with kernel extraction in case of big events, like a wedding, where households need large quantities of kernels, and don't have enough labour. Only one of

the respondents said they sometimes hire somebody to extract kernels for them, this concerned a household where both adult women had formal jobs. As with omaongo, kernel extraction is solely done by women and children. The period for kernel extraction is typically between May-June and December-January.

For extracting the kernels, the women first cut off the 'head' of the nut. They do this by using an upturned axe on which they place the nut, and hit it with a piece of wood. They then use a flattened needle for taking out the kernels. It is quite common that children help with this last part of the process, after they come home from school. In this way the time-consuming task gets done a bit faster, and it adds to the children's' nutrition as well, as they typically eat a part of the kernel while they are extracting them. The nuts used for kernel extraction are mainly the nuts that were left over from the wine that the household made. Some also say that they collect nuts from rotten fruits that were left under the trees, and a few others said that they ask for nuts from their neighbours sometimes. Nuts are never sold and 60% of the respondents said that they would give nuts away to anybody who would ask for them. Most women that we interviewed said that they usually decorticate all the nuts that they have, but the nuts used are selected. All women have extensive knowledge about a number of fruit properties of every tree in their area. These properties are often even found in the trees' name. Some fruits are juicy and sweet, but have little, no, or bad quality kernels, other fruits are sour or dry, but they contain large, tasty kernels.

All of the respondents said they store nuts. Average storage time given is 2.8 years, with a standard deviation of 3.0. Storage can be done in bags, mahangu baskets, or just inside the room, the main point is for the nuts not to become wet. The women were a bit more particular about the storage of kernels, and also mentioned that their storage time depended on the kernel itself. The kernels are not to be exposed to water and light, and most women store them in covered clay pots or buckets inside a room. Some women mentioned that you shouldn't touch the kernels anymore once covered as this would spoil them faster, and one old woman explained that the best way to store kernels was to put them in a clay pot, cover them with a layer of stones, and then with another layer of clay. Average storage time given was 3.2 months, with a standard deviation of 2.8. 10% of the interviewed said they never store the kernels as they only extract them when they need them and consume them immediately.

4.5.3 Kernel extraction quantified.

As with the fruits and the wine, quantification of kernel extraction is not an easy task. People simply don't keep track of the quantities they make as it doesn't really matter to them. Some of the kernels are eaten straight away during the process of extraction, another portion is made into cooking oil that day or mixed with their meal that night. Asking them how many tins they extract per week or per month also doesn't really help, as they may make 10 tins today, and nothing for the rest of the week. Other weeks they may be much more involved in kernel extraction, but those weeks will not be representative for the whole season. In general, the quantities of kernels extracted per season relate to the availability of nuts and female labour, and therefore also to the

involvement of the household in the making of wine.

As well as we could, we did make some estimates, and the average amount of kernels made per household per season was 145 tins (+-36kg.), with a standard deviation of 103 (+-26kg). All households do extract kernels, but the more available female labour, and the more involved in the commercialisation of kernels, the higher the amount of kernels extracted .

On the question how long it takes them to extract a standard 500ml tin (+- 250 gr.), the answers varied from '15 minutes' to '10 hours'. On average it took them 2.8 hours, with a standard deviation of 2.3. Now there are obviously women that are more skilled than others in the extraction of kernels, which may account for some of the time differences. Secondly, some of the kernels are eaten while extracted which may or may not be counted. Finally, the major factor in determining the time spent on the extraction of a certain amount of kernels will be the amount of women and/or children that participate in it. It may take one old woman 10 hours to extract a tin of kernels by herself, while in another family there are 4 women and 6 children busy on that same task at the same time.

4.5.4 Commercialisation of marula kernels

The commercialisation of marula kernels, or omahuku, seems to be more 'accepted' than the selling of marula wine. In our sample we found 62% of the households selling omahuku. 38% of them started selling 10 years ago or longer. On average the households started selling omahuku 7.4 years ago, with a standard deviation of 7.1.

Among those households selling, the average amount sold per season is 72 tins (+-18kg), with a standard deviation of 67(+-17kg). The price per tin is invariably N\$ 2.00 if sold locally or in the urban areas. Selling to the Eudafano Women's Co-operative gives them a price of N\$ 3.70 for a tin (recently raised to N\$ 4.25). Still, more than half of the households that sell omahuku only sell from home (14%) or at local markets (37%). Some of these households didn't know about the option to sell their kernels to the co-operative though, and were intending to become a Eudafano member once we explained the workings of the organisation to them. Not only would this give them a higher price for their product, it would also considerably limit their time spent on selling. 35% of the selling households in our sample sell kernels to the Eudafano Women's Co-operative only. 14% finally, sell both to Eudafano, and to their neighbours locally. The advantage of selling the kernels locally is that they get the cash immediately at any given time. The Eudafano Women's Co-operative only buys omahuku two times per year, and the money for it is received some time later. As with marula wine, processing and selling marula kernels is done solely by women, and the money received for the kernels is controlled exclusively by women as well.

83% of the households interviewed said they sometimes give kernels as a gift to friends, neighbours, and relatives. Being involved in the sale of kernels doesn't seem to have a negative impact on that. 52% of the respondents sometimes buy marula kernels. For most of them this only happens occasionally, they buy a few tins when they get unexpected

visitors and don't have kernels to make them a special meal. They buy the kernels from neighbours, local cucashops or local markets for N\$2 per tin. 23% of the 'buyers' said that they bought a larger quantity (10-100 tins) once or a few times. They also bought from neighbours. If one buys 20 tins or more the price can be negotiated and sometimes comes down to N\$1 per tin. Larger amounts of kernels are typically bought for weddings or other occasions. Only one respondent bought kernels on a regular basis. This concerned a household with a very old grandmother and many children. She couldn't see properly and wasn't able to decorticate the nuts anymore. She bought 5 tins of kernels every month at the pension market.

4.6 Marula Jam

Only two respondents in our survey had ever made marula jam. Others had never even heard about it, never tried it, or didn't know how to make it. The two women that did respond positively only make one or two jars in some years, and mainly use it for their own consumption. One of the women had learnt to make marula jam from a Finnish development worker, the other woman just tried it out herself. They both never really thought about selling it.

4.7 Marula Wood

Most households interviewed (93%) responded that they rarely use marula wood as firewood. Two households use marula wood monthly, and two never use marula for fuel because they don't have any trees themselves. In most cases, the people just pick up the dead branches from their own fields for firewood (93%). 22% also take dead branches from the bush sometimes, and a few (3%) take them from their neighbour's field. Live wood is used for purposes of firewood by 8 of the respondents, one of these households also cuts from trees in the bush, the rest of them only in their own fields. If live wood is used, it's mainly from male trees, branches only or the whole tree. One household said they would also cut a weak female tree, and one household would cut (parts of) any tree if they find a parasite in it. The use of live wood for any purpose is probably underestimated in the survey, as there are regulations against the cutting of trees in both traditional and governmental law, and people are not very keen to give strangers information that may put them in trouble. At the same time, people seem to be quite protective about marula trees, and wouldn't cut them if there were no good reasons for it.

37% of the respondents said they (rarely) use marula wood to make utensils. However, 86% of them refer to using unworked pieces of marula wood to sit on. Two said they could make a food tray for pigs out of marula wood, and one respondent had used marula wood to make a 'container' for brewing a traditional liquor. Some mentioned that marula wood is very soft and therefore not suitable for making utensils. Wood for utensils mainly comes from people's own fields (86%). If they don't have their own (male) trees, one could ask a neighbour, or try to find marula wood in the bush, but this is seldom done.

None of the respondents had ever bought any utensils made from marula, and none of them had made marula woodcarvings. It should be noted, though, that wood carving has never really been part of Owambo culture.

4.8 Marula medicines

The most well known marula medicine is the use of small branches and/or leaves as a cough treatment. One can either chew the branches and leaves for this purpose, or make a tea out of them. A little over half of the households interviewed (53%) know about this, and use it sometimes. Some added that it is not very strong though and they preferred to go to the hospital. One of the interviewed said she used small marula branches for treating toothache.

Other parts of the marula are not commonly known as medicines. We just got one or two responses in each category. The healing powers of the roots of marula were mentioned by 7% of the respondents. The roots are chewed and thought to treat coughing as well. One respondent said she used the roots to treat diarrhoea in animals. Marula bark is known and being used for medicinal purposes by even less people. One woman used it to treat ear or hearing problems, the other one gave an extract of the bark as a strengthener to weak animals during periods of drought.

All respondents agreed that marula medicines should be taken from male trees. Their medicinal powers are thought to be much stronger than those of the female tree. Households that use medicine from marula will take the leaves, branches, roots, and/or bark from their own field if they own a male tree, and will go to the neighbours or communal areas if they don't.

Some respondents mentioned that eating the first marula fruits of the season, or drinking marula wine in general, makes you strong and can treat or prevent you from getting diseases like malaria or TB. Ondjove (cooking oil) was also pointed out as a possible medicine for treating coughs, ear problems, or burn wounds. Burning the chopped off 'heads' of the nuts, and inhaling it was thought to be good against headache, and feeding marula cake to animals, finally, was said to be a good treatment for diarrhoea.

4.9 Access, tenure, and control of marula

There are few trees to be found in the homestead, as the space there is limited. There are not many trees growing in the communal areas either, as people don't look after them there, and they will be eaten by goats and cattle at an early stage. One can find most marula trees in people's fields, and more specifically just outside the homesteads. In our sample, the overall average number of marula trees found in people's fields is 7.1, with a standard deviation of 6.7. On average 4.0 of them are female fruiting trees (standard deviation 5.4), 2.0 are young trees, and 1.1 is male. 5% of the households didn't have any marula trees in their fields, while 23% of the respondents didn't own any

fruiting marula trees.

All of the people that have fruiting marula trees let other people harvest from them. In principle anyone that asks may harvest, in practice only neighbours and friends do. As explained in section 4.4.3., if one harvests in somebody else's field, one has to 'pay' half, most, or all of the marula wine to the owner of the tree, depending on the cultural tradition in that area. 13% of the respondents said that anybody is allowed to harvest from trees in the communal areas, and that no permission is needed for that. Headmen on the other hand claim that trees on the communal lands belong to them, and people have to ask them for permission if they want to harvest the fruits, and in principle also bring them part of the wine. Most people though said that they either had no communal lands in their area, or that there were no trees there. None of the respondents reported any theft of marula fruits.

80% of the respondents knew about the government rule not to cut marula trees or branches. All of them felt it was good to have a rule like this, especially for marula trees as they want to protect this important resource. One respondent felt though that the government shouldn't be so strict, because sometimes a male marula tree would be standing in the way, and they should have the right to cut it down. Others said that they wouldn't cut a marula tree anyway, especially a fruiting one, unless it was absolutely necessary. 90% of the respondents that knew about them said they complied with the government rules.

On the question whether people can claim rights to trees that are close to their fields, but not actually in it, 27% of the respondents replied positively. 5% of them said no, and the largest part (68%) had no idea. 95% of the respondents said that there were no trees from which they were not allowed to harvest, 2% had no idea, and 3% said they were not allowed to harvest marula from some trees, because they belonged to their King (Ondangwa area).

73% of the respondents replied positively to the question whether there were traditional norms and practices governing the harvesting of marula. They mainly referred to the 'time of no weapons', the traditional rule that people are not allowed to carry any knives or other weapons during the height of the marula season. It was installed to prevent community members from seriously injuring each other in heated drunken arguments. At the same time the traditional court closes, and all court cases are postponed until after the marula season, when all people involved have their common sense back.

66% of the respondents say that the rule of not carrying weapons is being enforced. The headman informs everybody about it in a meeting at the beginning of each season, and most people say that everybody then makes sure that the rules are being followed. Some (11%) also said that there are people elected for the task of enforcing the rules, or (5%) that the sub-headmen are looking after it.

On the question of whether people comply with this traditional law in the same way as they did in the past, 61% of the respondents answered positively. 14% of them didn't know, and 25% said that people didn't. Reasons given for the diminishing compliance of traditional laws were; changing times (36%), money/development (9%), no enforcement

(9%), and the fact that some people just don't care (36%). 62% of the respondents said there were special ceremonies around marula in their village. Most of them (57%) referred to parties at the headman's or King's house, often at the beginning of the marula season where the first fruits or first wine is presented. Others said it mainly concerned more informal parties, with many traditional dances and songs. Those who responded negatively said that there used to be marula ceremonies at headmen's and King's houses, but that that tradition had died out. They wouldn't describe the informal parties among neighbours as ceremonies.

On the question of whether there were any uses of marula or knowledge about marula that only certain people knew about, most respondents (92%) replied negatively. Only some said that there are a number of things, e.g. the use of medicines, hair relaxer, and oil, which are only known by older women. Not because it concerns secrets, but because the younger people are not interested in learning about them.

87% of the respondents said they don't share any knowledge regarding marula, as they feel there is no special knowledge to be shared. Some said the young are not interested in acquiring traditional knowledge, and 5% said that they share any knowledge with anyone.

4.10 Marula availability

Are there enough marula fruits for everybody that wishes to collect? 23% of the respondents in our sample believed there are. 75% of them replied that there is not enough marula for everybody. They claimed that there are many people that don't even have one marula tree, or that those who have need more of them, as it is such an important resource. When asked whether the available trees would be enough for home consumption, if there wasn't any commercialisation, most replied positively.

Most of the respondents (79%) felt that the number of marula trees has changed in the last 10-15 years. 81% of them referred to a change in the positive sense, while 19% felt that the number of trees has decreased. 13% of the respondents said that the number of marula trees has stayed the same over the years, and 8% didn't know. Reasons given for an increase in the number of marula trees were; 'natural growth' (87%), 'planting of trees by people', and 'the availability of more seeds because of intensified marula processing'. Reasons given for a decrease in the number of marula trees included; 'trees got old and died naturally', 'parasites killed some', 'lack of rain', and 'cut down by government for the development of roads, etc'.

Similarly, 75% of the interviewed observed a change in the number of seedlings, positively (93%) or negatively (7%). 13% saw no changes in the number of seedlings, and 12% of the respondents weren't sure about it. The main reason for the increase was again said to be natural growth (88%), other reasons given were; 'people like them', 'people planted them', and 'good rain'. The only reason given for a decrease in marula seedlings was the lack of rain.

Although 75% of the people interviewed felt that there are not enough marula trees, only 22% had ever tried to plant one. Upon questioning that, many people replied that they grew up with the idea that trees just grow naturally, and that they don't know how to plant a tree. Of those households that did try to plant a marula tree, more than half had used a truncheon, a bit less than half had tried with a seed, and about a third had planted a seedling. They all planted the tree(s) in their own field, either in or just outside the homestead. Reasons for planting were mainly that marula is seen as a productive and favourable resource. One of the respondents was planning to have a live marula fence surrounding the homestead.

A few more households (35%) have protected young trees. These young trees were all in their own fields, often close to their homesteads. Most of them responded that there are no problems in looking after young trees. Only a few mentioned that water may be a problem, and that animals want to eat the seedlings during the dry season, and may even destroy a small fence for that.

27% of the interviewed said that their household had cut marula trees or branches. This is likely to be an underestimate, though, as the cutting of trees is prohibited in both traditional and governmental law. In all cases the trees were cut in people's own fields, and the reasons given for it were quite varied;

- We cut male trees if they are occupying space, if we want to cultivate there. (4x)
- We cut the branches of male trees to give to the animals to eat during times of drought. (3x)
- The tree was too old, and didn't produce anymore. (2x)
- We cleared all the male trees so that we could grow mahangu when we arrived on this land.
- We cut down the small ones sometimes, because there are so many.
- The tree was badly damaged by a storm so we had to cut it down.
- We can cut down a tree that is sick, or even a male.
- This tree was standing in the middle and prevented other marula trees from growing well.
- We can cut male trees and tie a female branch to it, in that way you can make a female tree out of a male one.

4.11 Use of other natural resources

As stated in the introduction of the study area, people in North-Central Namibia are quite dependent on natural resources for their survival. Marula is a particularly useful and important resource with its multiple uses and socio-cultural values attached to it, but also other fruit trees, wild grown food, and other resources make a significant contribution to people's livelihoods. An interesting finding was that the use of natural resources is mainly dependent on the culture, and availability in that particular area. The access to other sources of income, degree of Westernisation, or general household wealth seemingly has got little to do with it. Table 4.11.1 indicates the use of the different

natural resources.

Table 4.11.1 Percentage of households using natural resources

Source/Usage	Total Responses	Positive Responses	Percentage
Indigenous wood for firewood	57	57	100%
Indigenous wood for poles	57	57	100%
Palm Hand brushes	57	57	100%
Wild Spinach	57	57	100%
Wild Fruits	57	57	100%
Thatch Grass	57	56	98%
Frogs	52	46	88%
Wild Melon Seed	50	43	86%
Insects/Caterpillars	57	47	82%
Palms for weaving	57	44	77%
Reeds for building	56	40	71%
Clay	57	34	60%
Wild Fish	56	30	54%
Indigenous wood for furniture	57	29	51%
Indigenous wood for utensils/tools	57	27	47%
Wild Mushrooms	57	18	32%
Wild Honey	57	13	23%
Wild Meat	57	12	21%
Sand	57	10	18%
Bird Eggs	57	1	2%
Indigenous wood for carving	57	0	0%
Twig Brushes	57	0	0%
Seeds for rattles	57	0	0%

5. CONCLUSIONS: CONTRIBUTION OF MARULA TO LOCAL LIVELIHOODS AND IMPLICATIONS FOR COMMERCIALISATION

5.1. The importance of marula in local livelihoods

The rural population of North-Central Namibia is involved in subsistence farming, but because of the relatively poor soils and the unpredictability of the rainfall, one cannot survive on subsistence farming alone. Formal and informal employment can contribute to local livelihoods to some degree, but unemployment rates are high in the area and not all households manage to get an income through employment. Particularly for those

households who do not have the option of improving their lives through employment, people are to a large extent dependent on available natural resources.

Marula is regarded as the most important natural resource in the area. Its uniqueness lies in the fact that there are so many uses of the tree and its fruits. From the shade of the tree to the burning of the empty nuts as a source of fuel, people are using all of its products, and the importance of marula stretches from the social, to the cultural, the economical, and the nutritional aspects of people's lives.

As the survey results clearly show, the use of marula products is very common in North-Central Namibia. 100% of the interviewed households make marula wine, juice, cooking oil, a kernel 'soup', and they mix the kernels with other food. 97% to 98% of the households eat the fruits, the kernels, and the cake, and use marula wood as a source of fuel. It is this commonness, the fact that everybody uses a large number of marula products, that makes the situation in North-Central Namibia so different from South Africa for example. Marula is an intricate part of people's lives; one cannot imagine a life without it.

The fact that everybody uses marula products does not mean that everybody owns marula trees. In our sample, almost a quarter of the households did not have a fruiting marula tree in their field. Still, because of social structures everybody has an opportunity to benefit from marula. Households with a lot of trees will end up with a larger amount of marula wine than others, and households with more available female labour will have more access to marula juice and marula kernel products, but because of the tradition of sharing labour and products, all households are beneficiaries of the marula resource to some extent.

The cultural significance of marula can be seen in the numerous traditional songs, dances, and stories around marula. In some areas the tradition of bringing marula wine to the Kings and headmen is dying out, but the marula season remains a time of festivity that cannot be compared to any other time of the year. In an area where homesteads are spatially spread, the marula season brings people together, makes them feel young and happy. It's also a time of giving, sharing, and togetherness. The traditional rules change as well, people are not allowed to carry any weapons, and the traditional court closes for those few months. No other natural resource has an influence on life that is in any way comparable to the impact of marula.

The nutritional value of marula makes a significant contribution to local livelihoods as well. The kernels, which are rich in protein and oil, and the fruits itself, with a high concentration of vitamin C, are a welcome addition to the limited local diet, be it in the form of juice, porridge, soup, or cooking oil. Furthermore, the marula wine, which in itself may not be a valued product from a nutritional point of view, is said to make people hungry, and many respondents have indicated how much healthier people look during the marula season, because they generally eat more.

Finally, the impact of marula on local livelihoods comes through the sales of marula products. People can survive on relatively small budgets in the rural areas, but cash is

needed for paying school fees, hospitals, basic goods, and supplementary sources of food, especially during years with inadequate rainfall. Almost half of the households in our sample live on an income lower than N\$ 250 per month, and in these cases, any additional sources of cash, however limited they may be, are imperative in helping households to pay for their basic needs.

5.2. Marula commercialisation: economic aspects and impact on livelihoods

The fact that many households are in need of extra cash income to improve their living conditions, is without a doubt the main reason for people's positive perception of the commercialisation of marula. The households in our sample that sell marula products all claimed to use the money for basic needs like food, school fees, and hospital costs. Even the more traditional headmen that we interviewed acknowledged the fact that times are changing, and people are forced to sell products that are traditionally not supposed to be sold, although most of them make a clear distinction between the selling of marula wine, which has important cultural values attached to it, and the sales of marula kernels, which is generally more accepted.

An important question is whether increasing commercialisation will have a negative impact on the living conditions in the form of diminished subsistence use and nutritional intake of marula products. The experience of the marula commercialisation process so far indicates that people are basically using the same amounts of marula products as they did before they started selling. They simply seem to put more time and effort in producing more. Up to now, the marula resource was abundant enough to cater for this increase in production. 75% of the respondents in our sample, however, stated that by now there is not enough marula for everybody that wishes to collect, and one may legitimately ask if increased commercialisation will negatively influence subsistence use of marula in the future. In general though, the perception is that people will not sell the amount reserved for subsistence use, because of the multiple importance of marula in non-economical terms.

Finally, there is the question of how marula commercialisation will influence the local economy. A distinction should be made between local commercialisation, and commercialisation on a larger scale, whereby products are marketed outside the area of production. Obviously the latter type of commercialisation will bring a lot of cash into the economy, which will boost the local system, but if the prices paid for the products are higher, will people then still sell kernels to the old woman who is not able to crack the nuts herself anymore? And will there be winners and losers in the sense that some women, or men for that matter, will grasp the opportunity and make a good living out of being 'middlemen' between buyers and those women who are less knowledgeable or who cannot walk far anymore? The experience of marula commercialisation so far has not shown any negative effects on these issues. It was found that a number of women that sell kernels to the Eudafano Women's Co-operative for example still sell kernels locally as well, despite the fact that the local price for kernels is about half of what they get through EWC, and the time spent on the local selling is much longer. Advantages of selling locally are the immediate availability of cash at any given time, and the social contacts

that are made or kept while selling. Therefore, increased commercialisation is not likely to have an impact on the local marketing of marula. The issue of ‘middlemen’ might change along the road, but for now making a profit out of other people’s products is seen as bad practice by everyone we talked to, and men are as of yet not at all involved in the commercialisation of marula. Working through co-operatives, as is done with the large scale purchase of kernels in Namibia, is a relatively good tool to prevent possible future ‘bad practices’.

5.3. Marula commercialisation: social and cultural implications

While some feel that economic necessity overrides all other aspects of life, others fear that large scale marula commercialisation will lead to a loss of social and cultural capital. The obvious effect of commercialisation is that marula changes from a gift to a commodity, and especially headmen were concerned that the practice of people not bringing them omaongo anymore would become more widespread if commercialisation would develop even further. A similar concern is the disappearance of the much praised informal marula parties, and the accompanying strengthening of social contacts, the fear that those parties will not be held for free anymore, or not with the same frequency. But the issue is much more complicated, in particular concerning the commercialisation of marula wine.

Marula wine is produced in a social setting. Neighbours help each other, and expect help in return. Those women that don’t own any trees, also help processing marula wine, even if they get little or no wine to take home. They do so because it has a number of advantages;

1. They enjoy the making of omaongo as a social event. While processing omaongo they catch up with the latest news and gossip, make jokes, and sing their favourite marula songs.
2. They build up their ‘social bank account’, strengthen their socio-economic bonds, and may expect help in any form next time.
3. They will have access to the kernels and the oshinwa, as they can take home the nuts with the remaining flesh of the fruits that they have processed. They will have kernels for subsistence use, and there may be even enough to sell, and get an extra income out of them.
4. They will be invited to parties at their neighbours’ house to enjoy the omaongo they have made.

These social aspects of processing, combined with the tradition of giving away marula products to neighbours, friends, visitors, and relatives, are mechanisms that make marula a resource accessible to all. Apart from the tradition of ‘giving away’ becoming somewhat less, the commercialisation process so far has not had a huge negative impact on the social aspects of marula. It is, however, likely that large scale commercialisation will change certain aspects of the marula social culture in the future. People may become more selfish, the owners of trees might not want to share ‘their’ economically important resource, one may have to pay for nuts, fruits, or processing services, and what happens to the ‘social bank account’ of those who are depending on that? It is difficult to predict in what ways changes will take place, but changes should certainly be expected, and it is

likely that the households that have no trees, and those with little or no cash income will lose out compared to the current situation.

Some indications on future changes can be learnt from the experiences with a marula juice press that was introduced at the beginning of this season. The press was made at the request of the Eudafano Women's Co-operative, who felt that the processing of fruits should be smoothed and increased. The press was put to work in the ten villages where EWC associations are active. The associations decided to charge a small fee on the use of the pressing machine, for purposes of maintenance, and as a small income generating activity. Technically, the presses showed little problems, and all women were excited and impressed with the amount of juice processed in a short time. Upon questioning though, some concerns were raised. One complaint was that the press, because of its usage fee, was only accessible to the relatively wealthy households. Additionally, some wealthy households who owned a lot of trees were now pressing their marula with little involvement of their neighbours and friends, and especially those that owned no trees themselves felt left out on the action and on their fair share of the wine, juice, and kernels. Because of their neighbours complaints, the 'wealthy households' decided to try out the fruit press only on a limited number of trees, but it is not clear whether this neighbourliness will prevail when marula becomes 'big business'. Another possible problem of marula becoming 'big business' is related to the gender issue. The processing of marula has always been a women's thing, and money from sales of marula products has up to now been in the hands of women only. Still, we received a lot of male interest in the marula fruit press, and chances are that they would want to take over once the processing becomes more accessible to them, and the money more interesting.

Finally, it should be noted that increasing commercialisation of marula kernels will not have such a profound social and cultural impact on the communities as the large scale commercialisation of marula wine. Although of social and cultural importance, the main difference is that kernels are generally not produced and consumed within social settings other than the household.

5.4. Marula commercialisation: the impact on the natural resource base

Marula commercialisation is most likely to have a positive impact on the natural resource base. Were people of the opinion that there were more than enough marula trees a couple of years ago, the perceptions on the resource availability have now changed, and a majority of women that we interviewed expressed the wish to have more marula trees. The increased importance of marula, through the added economic value, and the perception of the limitations of the current resource base, will discourage people from cutting marula trees and give them an incentive to plant and protect marula. While doing our survey, many women asked us where they could get information and support regarding the propagation of marula trees. They felt there was a lack of information on this matter as in the past it was unnecessary to be actively involved in the propagation of trees, and many people believed that marula can only grow naturally. Increased processing could also have a positive impact on the resource base, as more seeds would be made available. It is unknown whether the added economic value on marula trees will also lead to an increased awareness or appreciation of the importance of trees or natural

resources in general.

5.5. Marula commercialisation: the way forward

The main purpose of the research project of which this study forms part, is to identify ways of non-timber forest product commercialisation that are ecologically, economically, socially, and culturally sustainable. Now obviously, this Namibian household survey only forms part of the research project, and the final conclusions will result from combining all the studies done, but I will provide some thoughts and ideas based on the above findings and experiences.

In my opinion, the commercialisation of marula kernels can and should be intensified. The commercialisation process, in Namibia currently done through the Eudafano Women's Co-operative with logistical support from CRIAA SA-DC, has been a positive experience for all parties involved. It has had a positive impact on the livelihoods of many households in the region by improving the economic situation of the rural poor. At the same time, the commercialisation of kernels has not shown any negative effects on the social or cultural capital, nor on the local economies, nutritional intake, or the resource base. Furthermore, we found many women eager to participate.

Marula juice/wine on the other hand should in my view be left to develop by itself for the time being. Local commercialisation of marula wine is already taking place, and there is no way the process may be stopped or slowed down. But instead of creating opportunities for large scale commercialisation of the product, I believe we should rather wait and see how it goes, see how the culture adapts to the changes and give it some time. It may well be that people will only sell what they can culturally and socially 'afford', and that the disruption of social and cultural structures will therefore be limited, but the best chance we have to achieve that is by letting the process develop at its own pace.

Other potentials for the commercialisation of marula products may be identified. The production of marula jam for example, is as of yet an unknown activity in North-Central Namibia. It would be interesting to see what the experiences with the commercialisation of marula jam are in South Africa, and draw lessons for possible future action from there.

I would like to end with some words of wisdom that Mr Joseph Hailwa, the Director of Forestry in Namibia gave me; "People need money to pay for their basic needs, and commercialisation of forest products will even make people plant and protect more trees, which is good. But practitioners working with forest product commercialisation should be aware and acknowledge what may be lost. The social and cultural values around marula, for example, show a richness of our society which cannot be translated into dollars. One cannot put their values against each other and say what is more. I'm not saying that commercialisation is bad, I just want people to be aware, and look around before taking any action."

6. REFERENCES

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