



*Ximenia surveyi in
West Caprivi*

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Contents

<i>What do we know so far?</i>	3
<i>How did we go about this?</i>	4
<i>What did the survey find?</i>	6
<i>What can the data tell us?</i>	7
<i>What could this survey not cover and how can it be improved?</i>	7
<i>References</i>	8

Acknowledgements. This survey would not have been possible without the far-sighted planning and preparation by the IRDNC team in West Caprivi. I would particularly like to thank Eben, Jack, Justine and Assie for assistance during the fieldwork. However, many more people were involved in the preparations for which I am grateful. Karen Nott deserves a special “thanks” for her enthusiasm and down-to-earth approach to this project.

What is this project about?

The kernel of sour plum (*Ximenia americana* and *X. caffra*) yields a seed oil which used commercially for cosmetic purposes. For several years local communities in the Eenhana area, North Central Namibia, have been harvesting *Ximenia* fruits, cleaning and cracking the seeds and sold these to a central agent in Windhoek for export to France. Based on the success of this harvesting project in North Central, and the fact that the demand from Europe outstrips supply, IRDNC has been asked to investigate the feasibility of extending the harvesting network to West Caprivi and Kunene region.

This study encompasses four components:

1. Review and collating of information on distribution, uses and abundance of *Ximenia* species in West Caprivi and Kunene
2. Establishing the feasibility of participation by local communities in those areas
3. Testing the quality of the seed oil and
4. Obtaining an estimate of quantities of *Ximenia* shrubs in West Caprivi and Kunene.

This document reports on component 1. and 4. for West Caprivi, i.e. review and field survey of *Ximenia* shrubs in West Caprivi.

What do we know so far?

Both *Ximenia* species (*X. americana* and *X. caffra*) occur in West Caprivi (Curtis & Mannheimer 2005). Whether both varieties of *X. americana*, var. *americana* and var. *microphylla*, or *X. caffra*, var. *caffra* and var. *natalensis*, occur in this area has not been established. In Kavango, the shrub is not associated with a particular vegetation type and occurs sporadically throughout the various woodland and shrubland types in this region (Burke 2002). A similar distribution is expected in the woodlands on Kalahari sands in West Caprivi.



Ximenia caffra var. *caffra* can be identified by hairy leaves and branches and a light green appearance.



Ximenia americana has hairless, blue-green leaves. The two varieties are apparently distinguished by the size of the leaves.

How did we go about this?

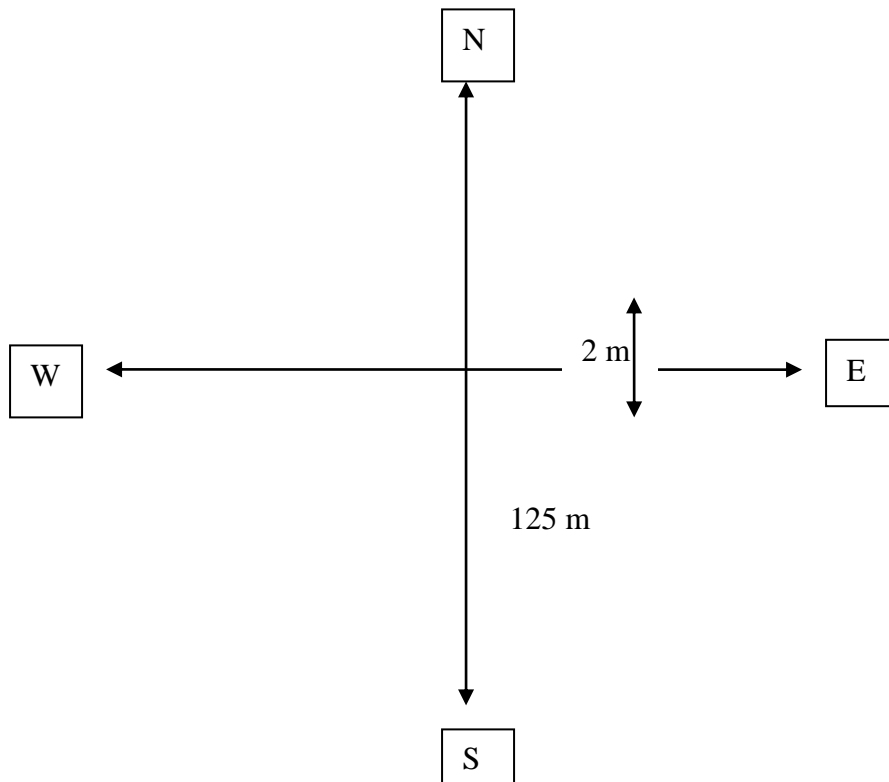
The purpose of the field survey was to obtain an estimate of quantities of *Ximenia* shrubs in areas where people harvest the fruit in the Babwata National Park, West Caprivi. In meetings with ten communities during the period of 16-17 February 2009 the project was introduced and people were alerted to the fact that a survey team would come back and require directions from people at the villages to sites where the fruits are usually harvested. The field surveys were undertaken during the period of 18-21 February 2009.

As some villages are close to each other, to obtain a representative sample, the ten villages were grouped to five focus villages, namely

1. Mashambo
2. Omega 1 (including Shamakwe, Mangaranga)
3. Chetto (including Pipo)
4. Omega 3 (including Mauto) and
5. Mut'ciku (including Mushashane).

At each of these five focus villages people were asked to identify the harvesting areas in their vicinity. A maximum of three harvesting areas (equivalent to sample points) was visited at each focus village.

Because of the irregular and occasional distribution of *Ximenia*, at each sample point all *Ximenia* shrubs were recorded in four transects in four main compass directions. Each transect was approximately 125 m long and 2 m wide to obtain a coverage of approximately 1 hectare per sample point.



All species and varieties of *Ximenia* shrubs were distinguished, and the shrubs were recorded in four height classes (< 0.5m, 0.5-1m, 1-2m and > 2m). A voucher specimen of each species was taken at each focus village and lodged at the National Botanical Research Institute in Windhoek.



Collecting and pressing plant specimens.



Keeping a 2 m wide transect was a challenge in the thick bush we encountered during part of the survey.

What did the survey find?

Data from the four transects at each site were summarised and presented per site.

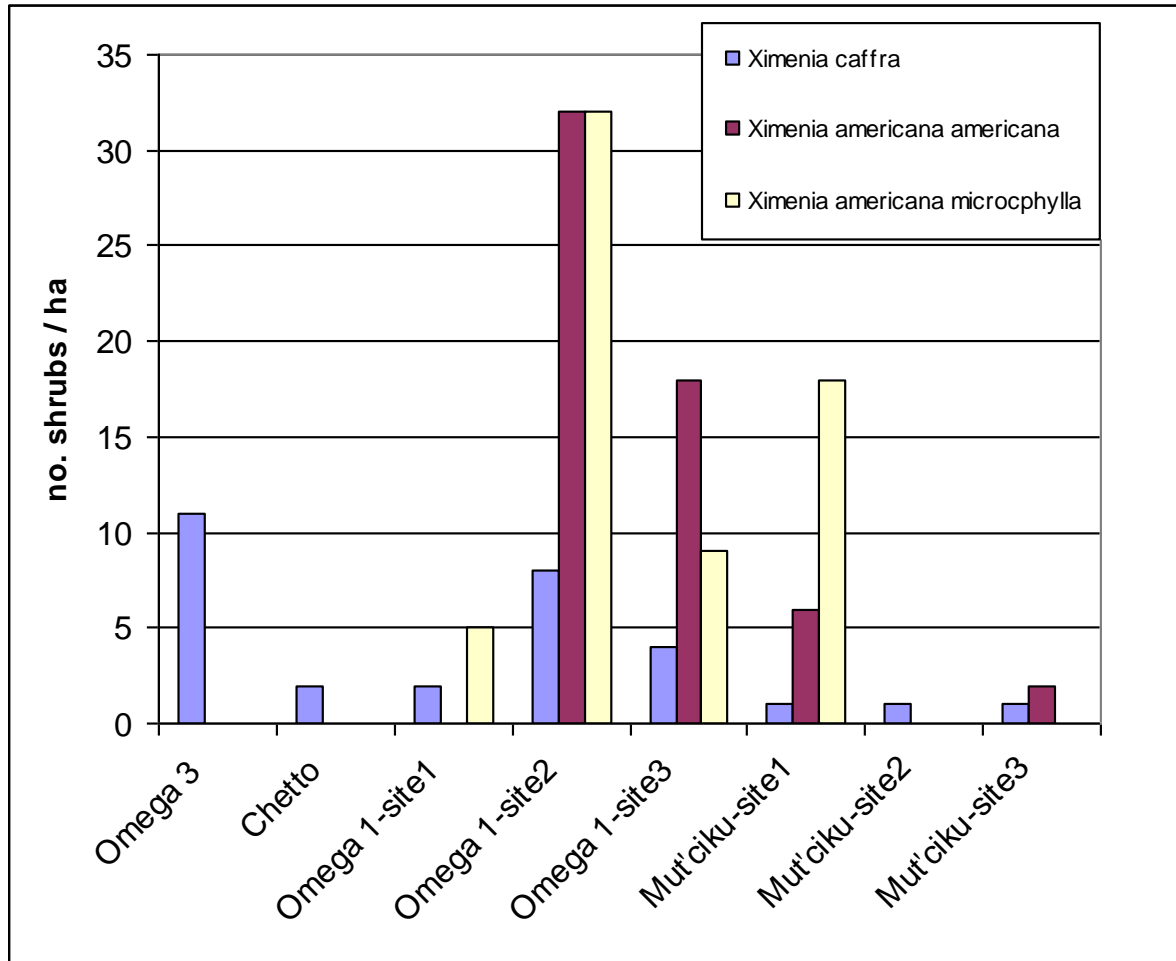


Figure 1. Number of *Ximenia* shrubs per selected sample site (1 ha) in West Caprivi.

A total of 152 shrubs were recorded, with *X. americana*, both varieties, twice as abundant as *X. caffra*.

In order to present the size distribution of the shrubs, the data were then summarised per species and presented for each height class.

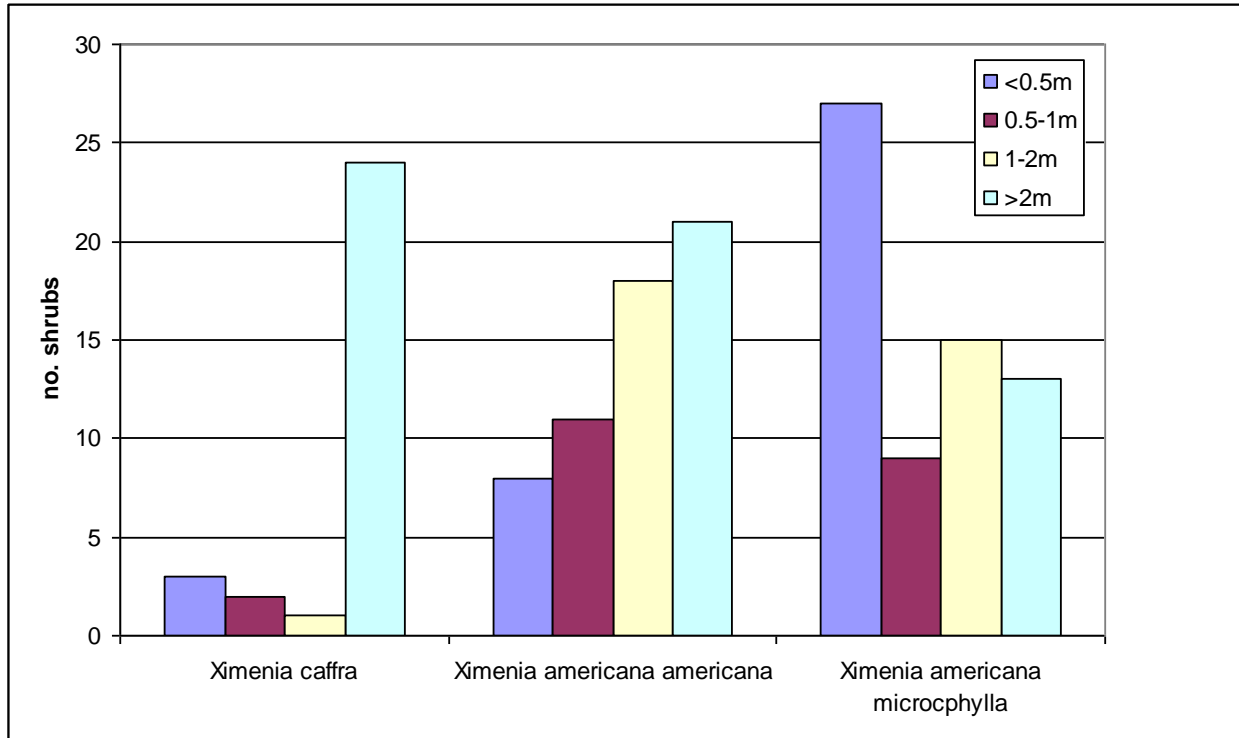


Figure 2. Number of *Ximenia* shrubs per height class at selected sites in West Caprivi.

As indicated by the number of small plants recorded, recruitment is taking place in all species. In comparison, *X. caffra* shows the lowest recruitment.

What can the data tell us?

This rapid survey which was intentionally selective (by surveying harvesting areas indicated by the communities) shows that both species, and likely both varieties of *Ximenia americana* are abundant in the West Caprivi (Fig. 1). The populations are healthy, as shown by the size distribution of the shrubs (Fig. 2).

What could this survey not cover and how can it be improved?

Although considered adequate for the purpose of this study, this survey is not sufficiently representative to extrapolate these data over large areas. Much more field work and particularly discussion with communities would be required to obtain a sufficiently accurate quantification that could be extended to the entire region. For example, the harvesting areas that were shown

to the survey team were entirely dependent on who was available at the village to show these areas. These were not necessarily the people with the best knowledge on harvesting sites. For this reason no survey was undertaken at Mashambu, because no particular harvesting area could be identified. At Omega 3 and Chetto only one site was pointed out at each village. However, as people harvest pragmatically when they pass the shrubs while busy with other activities, there may not be particular harvesting areas there. Also, unlike Omega 1 and Mut'ciku where the shrubs were abundant, *Ximania* shrubs may well be more scattered in the eastern part of the study area than in the west, another possible reason why no particular harvesting areas could be identified.

Should further field work be considered, focus should be on identifying the most knowledgeable people with regard to localities of the shrubs. For example, once the project has been introduced to a village, the right contact person should be appointed and survey dates should be scheduled immediately.

There is some doubt whether both varieties of *X. americana* occur in this area. Although the survey distinguished the two varieties based on the most recent identification key (Uriras 1999), confirmation from the National Botanical Research Institute will be necessary.

References

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