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# Deforestation in the Owambo Region, North Namibia, Since the 1850s

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## SUMMARY

Early European travellers were impressed by the trees and forests of the Owambo region, north Namibia. As they became better acquainted with the Owambo way of life, Europeans began to warn of deforestation in the region. This article explores environmental change and especially deforestation in the Owambo region since the 1850s. The paper discusses the crucial elements affecting deforestation in north Namibia: population growth and settlement patterns, land use practices, the structure of production, consumption patterns of wood, and valuations related to forests.

## METHODOLOGICAL PROBLEMS IN STUDYING ENVIRONMENTAL CHANGE IN THE AFRICAN CONTEXT

We pushed through thick thorns the whole time, and had begun to disbelieve in Ondonga, when quite of a sudden the bushes ceased: we emerged out of them, and the charming corn-country of the Ovambo lay yellow and broad as a sea before us. Fine dense timber-trees, and innumerable palms of all sizes, were scattered over it; part was bare for pasturage, part was thickly covered with high corn stubble; palisadings, each of which enclosed a homestead, were scattered everywhere over the country. The general appearance was that of most abundant fertility.<sup>1</sup>

The explorer Francis Galton – the cousin of Charles Darwin – and his European contemporaries were very impressed with the nature and people of the Owambo region. However, during the last 150 years assessments of the environment of the Owambo region have changed from Galton's enthusiasm to present-day pessimistic scenarios presented by officials and researchers. Deforestation, degradation of arable land and desertification are commonly used terms when discussing the state of the environment in the present-day north Namibia.<sup>2</sup> What has happened to the Owambo cornfields and forests since the impressions of early travellers?

Unfortunately the Owambo region is not the only corner in Africa where dramatic environmental changes have occurred during the last century. According to the archaeologist Ari Siiriäinen the environmental potential in sub-Saharan Africa has steadily weakened during the past 2,000 years as a consequence of increasing economic and technological activity, and the growth of population pressure. Such a trend will lead, and in many places has led, to a point below which 'the natural regeneration process no longer operates'. After passing the threshold point deforestation and desertification follow. Siiriäinen points out that the threshold level is a geographical variable and that processes leading to these manifestations have undergone development over many centuries. The crucial component in Siiriäinen's model, where cognitive variables are ignored, is population growth.<sup>3</sup>

The aim of this paper is to analyse environmental change and especially the processes which have led to deforestation in the Owambo region of north Namibia during the last 150 years. The crucial elements affecting deforestation in north Namibia have been population growth, consumption patterns of wood, land use practices and valuations related to forests.

When trying to reconstruct the past of an African community lack of sources – both written and oral – complicate research. Of course we can and must utilise the findings of other disciplines like archaeology, paleoecology, etc. However, these studies do not make it possible to get as closely in touch with the everyday life of a local community or a family as is possible through the oral testimony of community members themselves, or the evidence collected by outside observers.

Similar difficulties were encountered in this study. There is no available previously collected oral data, and the earliest written records are only from the 1840s, when the first explorers, hunters and traders visited the area. Finnish missionaries in the 1870s were the first Europeans who resided permanently in the Owambo region. North Namibia remained a neglected field in international Namibia research until the beginning of the twentieth century even though the region had been the most densely populated part of the country for centuries.

## ECOLOGY AND ECONOMY

The Owambo region, understood in a geographically broad sense, is situated between the Etosha Pan and the Kunene and Kavango Rivers. The northernmost part of the region is located in present-day Angola, but this study emphasises the Namibian side of the Owambo region. The catchment area of the Etosha Pan clearly differs topographically and ecologically from southern and mid-Namibia. The Owambo region forms a uniform plateau varying in altitude between 1,100 and 1,200 metres. The earth's surface gradually ascends northwards from the Etosha Pan, which is 1,050 metres above sea level. The Etosha Pan catchment area is composed of floodwater courses, *oshanas*, which vary in width from a few

## DEFORESTATION IN THE OWAMBO REGION

metres to over a kilometre. The most important *oshana* is the Cuvelai River. The river's sources are nearly 1,500 metres above sea level in the Benguela Highland in Angola.<sup>4</sup>

Great annual and regional variations in rainfall are characteristic of the climate in the Owambo region. The water conditions of the Cuvelai River basin are dependent on annual rainfall and floods. The magnitude of the floods depends on the rainfall of the Benguela Highlands. The average annual rainfall in the Cuvelai River basin ranges from 350 mm in the south to about 650 mm in the north. About 80 percent of the average annual rainfall occurs in the four months between December and March. Vegetation in the western part of the Owambo region is mopane savanna and in the eastern part, tree savanna and woodland.<sup>5</sup>

Compared to southern and mid-Namibia, the physical environment of the Etosha Pan catchment area has provided conditions for more multifaceted production. In the mid-nineteenth century the population of the Owambo region was heavily concentrated on the branches of the Cuvelai River's *oshana* network. The settled area was composed of uniform population clusters, separated from each other by forested areas which varied in breadth. The largest population clusters were located in the area where the *oshana* network is densest. In the naturally harsher west and southwest the communities were smaller, both in population and in area. Water conditions thus clearly determined the location of settlements.<sup>6</sup>

The Owambo region was not politically unified: it was divided into autonomous communities which differed considerably from one another in regard to population size and surface area. In comparison to other communities inhabiting present-day Namibia, the ruler's status within the more populous Owambo communities was exceptionally strong. This was, to a great extent, due to Owambo's special water conditions. Since water supplies were based on surface water, administration and leadership had to be concentrated for the implementation of vital water procurement projects (Figure 1).

The political structure of the Owambo communities was built around the hereditary ruler, called the *omukwaniilwa*, or king (except in the small communities located in the vicinity of the Kunene River). In each community kingship was passed on by inheritance through the royal clan. The king governed his community with the aid of counsellors and district headmen. Matrilineally segmented clans, of which there were about thirty, formed the foundation of the Owambo social organisation. The basic unit of production was the male-led homestead or *egumbo*. The economy was based on subsistence farming and animal husbandry. The whole economic life was divided according to gender and conformed to the annual rhythm of farming.<sup>7</sup>

Allocation of land was already a significant issue in the Owambo region in the nineteenth century. Land was communally owned, and men purchased access to it for their lifetimes from kings or headmen, using cattle as currency. Women were responsible for the practical cultivation work, primarily grain



## DEFORESTATION IN THE OWAMBO REGION

## THE GROWTH OF POPULATION PRESSURE

Examining population development in sub-Saharan African societies is difficult and in many societies almost impossible due to the lack of reliable systems of population registration before independence. A great deal of the demographic data from the colonial period are based on rough estimates. Bruce Fetter warns that 'national censuses in the scientifically accepted sense of the term, for example, were not conducted in Central Africa until after World War II'.<sup>10</sup> Moreover, Jean Stengers reminds us of 'the illusion of progress' related to the history of enumerations and censuses. He points out that it should not be taken as a matter of course that the latest censuses are more reliable than earlier ones.<sup>11</sup> From the Owambo region census information is available since the 1920s, but its reliability is questionable until the 1960s, as in many other African countries.

	Ondonga	Uukwanyama	Uukwambi	Ongandjera	Ombalantu	Uukwaluudhi	Kuene River Settlements & Eunda, etc.	Uukolonkadhi	TOTAL
1921	---	---	---	---	---	---	---	---	91,500
1933	34,195	41,215	11,405	5,996	6,349	6,169	2,532	---	107,861
1942	34,195	52,580	14,524	7,620	8,247	6,169	3,083	---	126,418
1951	53,404	81,451	22,239	12,803	12,958	9,244	2,898	2,807	*200,253
1960	68,601	87,511	28,341	18,527	17,665	12,040	---	6,678	239,363
							+ Eunda		
1970	85,655	107,722	40,264	20,742	19,574	13,861	---	7,689	295,507
							+ Eunda		
1981	---	---	---	---	---	---	---	---	452,036
1991	---	---	---	---	---	---	---	---	618,117

--- Distribution unknown

\* Includes 2,449 San people

Source: Ovamboland Census, 1933, NAO 23, 15/2, NAW; Native Commissioner Ovamboland, Annual Report for 1942, Ondangwa 31 December, 1942, NAO 20, 11/1 v.14, NAW; Bruwer 1961: 11; Report of the Commission ... 1964: 37, 40; National Planning Commission 1993: 36.

TABLE 1. Development of population in the Owambo region in the twentieth century

Despite the fragmentary nature of the colonial demographic data, they give some indication of the direction of population development. From 1933 to 1991 population of the Owambo region has almost sextupled. In spite of the fact that drought has been a recurrent phenomenon in the Owambo region, serious famines have been avoided since the famine of 1915/16, which killed about 20,000 people.<sup>12</sup> The development of severe famines into killing famines was averted by relief aid programs organised by the South African colonial administration. Interventions of the colonial administration during severe droughts and medical work practised by both the colonial administration and missionary organisations laid a foundation for continuous and steady population growth. Since the 1970s the annual population growth rate has been about 3 per cent.<sup>13</sup>

Community	Men		Women		Children		Total No	Households	
	No	%	No	%	No	%		No	Persons/ household
Ondonga	7,333	21.1	9,592	28.0	17,270	50.9	34,195	5,850	5.8
Uukwanyama	7,528	18.3	11,878	28.8	21,809	52.9	41,215	6,689	6.2
Uukwambi	1,901	16.7	2,661	23.3	6,843	60.0	11,405	2,039	5.6
Ongandjera	987	16.5	1,428	23.8	3,581	59.7	5,996	1,189	5.0
Uukwaluudhi	1,022	16.6	1,569	25.4	3,578	58.0	6,169	1,174	5.3
Ombalantu	1,058	16.6	1,482	23.4	3,809	60.0	6,349	1,023	6.2
Uukolonkadhi & Eunda	405	16.0	589	23.2	1,538	60.8	2,532	422	6.0
Total	20,234	18.7	29,199	27.1	58,428	54.2	107,861	18,386	5.9

Clarifications: During the census the age of children was set at age 18 and under, (Native Commissioner Ovamboland, Annual report for 1936, NAO 19, 11/1, v.9, NAW).  
Source: Ovamboland census, 1933, NAO 23, 15/2, NAW.

TABLE 2. Ovamboland census 1933

When analysing the environmental pressure caused by population growth an important explanatory factor is the family structure, including the size of a household. A comparison of the 1933 and 1991 census shows clearly that there has occurred no noticeable change in the size of a household. According to the 1991 census, the average size of a household in the eastern part of the Owambo region (Ondangwa area) was 5.9 persons, and in the western part (Oshakati area) 6.1 persons; this resembles closely the situation in the 1930s.<sup>14</sup> Neither has there been any dramatic change in the age structure of households during the last six

## DEFORESTATION IN THE OWAMBO REGION

decades. In 1991 60 per cent of the population in the Ondangwa area were under 20 years old, in the Oshakati area population was even younger (62 % were between 0-19).<sup>15</sup> Despite the fact that there has been no noticeable change in the household structure the number of households has grown from 18,000 in 1933 to almost 100,000 in 1991.<sup>16</sup>

Population growth has increased the density of population especially in the Cuvelai catchment area. The average density of population in the Owambo region has grown from 5.9 persons per sq km in 1970 to 11.87 persons per sq km in 1991.<sup>17</sup> In the central Owambo region the density of population is close to 100 persons per sq km.<sup>18</sup> The biggest obstacle to the extension of settlement to the east and west of the Cuvelai Floodplain has been the lack of groundwater.

### FORESTS AND THE OWAMBO WAY OF LIFE

Forest and trees have always been inseparable from the northern Namibian way of life. The formation of Owambo communities started from population clusters which were located in the middle of forested areas. The settled area of the community was cleared for fields and only some fruit and shade trees were left on the fields.

Forests have provided households with building material, fuelwood, food, fodder, medicine, etc. In addition to their economic value, important social, cultural and psychological values are related to forests. Given the extent of the topic, I will discuss only the most important economic uses of wood in this connection.

The early travellers paid attention to trees and forests when they entered the Owambo region. Like the explorer Galton, his colleague Charles John Andersson described his arrival in the Owambo region in 1851 as entering a paradise. 'Here and there, moreover, arose gigantic, widespreading, and dark-foliaged timber and fruit trees, whilst innumerable fan-like palms, either singly or in groups, completed the picture. To us it was a perfect elysium, and well rewarded us for every former toil and disappointment.'<sup>19</sup>

The Owambo settlement pattern and the structure of production has been characterised by the wasteful use of wood. In the nineteenth century, when there were large forested areas left, forests were also transformed into arable land. Depending on their location, fields were cultivated continuously for four to five years. After that, the household's dwelling was transferred to the middle of freshly recuperated fields.<sup>20</sup> Besides rebuilding, another reason that kept the demand for building wood on high level was the prevalence of termites. In spite of the durability of the mopane (*Colophospermum mopane*), the tree species most often utilised in construction, most of the poles in a homestead had to be replaced due to termite damage after approximately six years.<sup>21</sup>

The traditional Owambo homestead, in which wood was the main raw material, was composed of huts, elaborate stockades and palisade passages. The palisades were designed not only to separate huts from the surrounding environment, but also to serve as enclosures utilised for a variety of purposes such as meeting places, working space and family gatherings, and were therefore in fact living quarters.<sup>22</sup>

Owambo architecture has interested Europeans since the early travellers. They were astonished at the great amount of wood used in building. The Swiss botanist Hans Schinz estimated in the mid-1880s that to build an average homestead at least 600 poles were needed. This meant cutting at least 200-300 trees.<sup>23</sup>

Even though Europeans were interested in the Owambo architecture, they unfortunately used only descriptive stories in estimating the amount of wood needed for building a homestead. But both old photographs and written records confirm the conclusion that in the last century the consumption of wood in building was not less than it is today. In recent measurements it has been shown that more than 100 cubic metres of wood are removed to build an average homestead. In addition, about 15 cubic metres of building poles are needed annually to keep the homestead in condition, because termites are continually destroying the dwelling.<sup>24</sup>

Unfortunately present building habits do not allow us to predict any rapid change in the Owambo architecture in the near future, as the following example shows. 'To be seen as a really brave Owambo man, you have to build a big homestead consisting of many poles and a lot of wood', a businessman, Mr. Shali Kamati, told the workshop dealing with deforestation in northern Namibia.<sup>25</sup> However, since the First World War, shortage of building poles has been a reality in the most densely populated areas of southern Owamboland.<sup>26</sup> Until now new materials – clay or cement bricks – have substituted for poles only in certain places.

Fuelwood has been the most important source of energy in the Owambo region. The UNICEF survey of 1990 estimated that 95 per cent of the households in the Owambo region had no electricity and 85 per cent used wood for cooking.<sup>27</sup>

The most marked long-term change in the energy supply scheme has been the lengthening of the haulage distance for fuelwood. At the beginning of this century fuelwood was fetched mainly from the adjacent forests lying between population clusters or communities, but today a considerable amount of fuelwood is brought from outside the settled areas. The average haulage distance for wood has lengthened and pickup vans are used for transport. The introduction of new technology for hauling the wood has broken the traditional gender division of labour in energy supply. The responsibility for energy supply is transferring from women to men. As in building, there is no indication that fuelwood will be replaced by any other source of energy in the near future.<sup>28</sup>

## DEFORESTATION IN THE OWAMBO REGION

Deforestation has resulted in the creation of wood markets in the most densely populated areas, because only part of the population can afford to fetch building materials and fuelwood by themselves from forests located beyond walking distance. However, the introduction of new building materials or sources of energy is not only an economic but also a cultural question.

### ACCELERATION OF DEFORESTATION

Environmental reports dealing with Africa warn us of the accelerating rate of deforestation in tropical Africa. The rate of deforestation was estimated to be 3.7 million hectares per year in the 1980s.<sup>29</sup> However, this figure tells us nothing if we cannot put it in proportion to the overall forest area in tropical Africa or rather put it in a regional context.

In the Owambo region we are able to follow the diminution of forest area since the mid-nineteenth century. The first traveller who described forests of the Owambo region analytically was the German missionary Hugo Hahn. He reported in 1866 that between the communities of Ondonga and Uukwanyama there existed a forest area about 60 km wide.<sup>30</sup> Half a century later the width of the forest area between these communities, using the same route, had been reduced to 40 km.<sup>31</sup> In the 1950s the wooded area was still about 10 km wide, but today there is no forest left between Ondonga and Uukwanyama.<sup>32</sup> Similar descriptions can be found dealing with the other parts of the Owambo region.

The question of deforestation was discussed for the first time by the Swiss botanist Hans Schinz, who visited the Owambo region in 1885-86. He warned that deforestation would be a problem in 50 years if trends in population growth and the patterns of wood consumption continued.<sup>33</sup> At the beginning of the twentieth century clear signs of deforestation could be noticed in the southern parts of the Owambo region. The poorest households were compelled to use millet stalks as substitute for poles in building.<sup>34</sup>

'The destruction of forest trees has been carried on in this tribal area during the past 10 years at an alarming rate. ... In the course of 50 years or so the country will be practically denuded of forest and there is of course no need to dwell on the disastrous effect of such denudation', wrote the Officer in Charge at Oshikango near the Angolan border in the beginning of the 1930s. This indicates that deforestation was recognised by the South African colonial authorities.<sup>35</sup>

Three decades later deforestation was referred to by the colonial administration as one of the greatest economic and environmental problems in the Owambo region.

An alarming phenomenon is the large-scale deforestation which is taking place in the central areas of Ovamboland. The erection of intricate palisades around kraals is an Ovambo tradition, and it frequently happens that in the laying out of a large kraal

literally thousands of trees are destroyed. This is an unfortunate national custom which, unless some solution can be found to the problem, will undoubtedly lead to a chronic shortage of firewood in the near future.<sup>36</sup>

Thus deforestation has been a recognised problem in the most densely populated parts of the Owambo region at least since the beginning of the twentieth century. However, before Namibia's independence neither the Owambo people themselves nor the colonial administration worked actively to retard deforestation.

The growing pressure for land was resolved by reclaiming new arable land from forested areas which led to expansion of the surface area of population clusters. From the 1920s to the 1980s the population of the Owambo region quintupled but the settled area only tripled (5,500 sq km in 1920, 19,700 sq km in 1978).<sup>37</sup> According to recent estimates only about 3.7 per cent (1,900 sq km) of the total surface area of the Owambo region is suitable for dryland cultivation. In 1987 about 1,500 sq km of the suitable arable land was cleared for cultivation.<sup>38</sup> A direct comparison of the settled area and population can be misleading, because settlement has expanded from the most fertile areas of the Cuvelai Floodplain to more marginal districts where acreage of farms and their arable areas are larger.

Diminution of suitable land to be cleared for farming in forest areas increased population pressure in the settled areas and caused the collapse of the foundation of the traditional slash and burn cultivation there. Except for small scale experiments the South African administration did not start any serious programmes to improve the productivity of subsistence farming and animal husbandry or develop new industries, which would have improved the subsistence of the Owambo people.<sup>39</sup> The most significant technical advances in cultivation during the twentieth century have related to the tilling of soil. The plough only started to replace the traditional iron hoe in the 1940s and the first tractors appeared in the 1960s.<sup>40</sup> Up to now introduction of new agricultural technology has not radically altered the gender division of labour in cultivation.

Pressure caused by the growth of the population has compelled households to cultivate the same fields year after year in the most densely populated areas. Since there has been no noticeable change in cultivation methods degradation of land has resulted in these areas. Bruwer reported from the Uukwanyama community in the late 1950s that 'even in good years, produce barely meets the demand of the growing population, and if drought occurs, the situation becomes critical'.<sup>41</sup> Since the 1960s the Owambo region has been dependent on the importation of grain.<sup>42</sup> According to an inquiry conducted since Namibia's independence, and carried out among farmers living in the central part of the Owambo region, two thirds of the households were cropping less than two hectares and were forced to rely on purchased foodstuffs for much of the year.<sup>43</sup>

The main principles of the South African 'Ovamboland policy' were to keep the population of the 'native reserve' or 'homeland' alive through subsistence

## DEFORESTATION IN THE OWAMBO REGION

farming, and secure a continuous and steady supply of migrant labour for mines, farms, etc. located in the central and southern parts of the Namibian territory. In the late 1950s about 38 per cent of the adult male population participated in labour migration annually.<sup>44</sup> It was enough for the South African administration that women survived with their children in the countryside while the able-bodied men were working as migrant labourers in the south. Money earned from migrant work was spent more on such items as vehicles, alcohol, and clothes than on developing cultivation methods.<sup>45</sup>

Even though almost all of the colonial officials based in the Owambo region were concerned about deforestation they did not have effective means to tackle the problem, because land tenure was in the hands of the local kings and headmen.<sup>46</sup> In 1956 the frustrated Native Commissioner for Ovamboland reported to Windhoek:

Here lies the danger; and the population is increasing so rapidly that the forests are in danger of being destroyed within the next generation. Anyone, on payment of a few pounds to a sub-headman can acquire a kraal site in the heart of any forest he chooses and may take for his own use as large an area as he thinks he can manage. ... There is still time to halt the destruction of trees but here, unlike the Union, there is no legislation for backing up exhortations to protect and preserve trees for the generations that will follow.<sup>47</sup>

Possibilities for forest authorities to control the observance of forest laws have not improved noticeably since then, because land use in the Owambo region is still based on communal ownership.

The development projects carried out by the South African administration concentrated mainly on the improvement of two sectors: the water supply system and the road network, which supported the recruitment of migrant labourers. The water supply system constructed during the South African colonial period increased population density in the central parts of the Owambo region and put pressure on vegetation cover along the canals and pipelines, and in the areas surrounding the dams and boreholes.<sup>48</sup> For example, before the construction of the canal from the perennial Kunene River, the lack of water necessitated the seasonal movement of cattle. The availability of water year-round meant that more cattle could be kept in the settled area, which was beneficial from a dietary point of view but negative from an environmental point of view.<sup>49</sup>

The greatest obstacle for expansion of settlement and cultivation outside the Cuvelai Floodplain has been the shortage of good quality ground water and surface water. Due to population growth and influx of immigrants from Portuguese Angola the central parts of the northernmost Owambo community, Uukwanyama, were becoming crowded in the mid-1920s. In order to avoid overpopulation of central Uukwanyama the colonial administration started to encourage people to move to the uninhabited eastern parts of Uukwanyama by drilling bore holes and building roads.<sup>50</sup> Similar methods were also used in

improving water supply and opening up new areas for settlement and grazing in the western parts of the Owambo region.<sup>51</sup> Improvement of water supply outside the Cuvelai Floodplain increased pressure on vegetation cover and extended deforestation to new areas.

Road construction has also had a negative impact on the environment. Due to the rudimentary nature of transportation technology during the 1930s the haulage distance for building material and fuelwood was restricted to about 10 km, compared to the present distance, for building poles, of over 40 km.<sup>52</sup> In the 1930s transportation was based mainly on human muscular strength and only the elite of the community could afford ox wagons, which enabled them to fetch wood from high forests. The settled areas were surrounded by scrubland zones, which were 8 to 10 km wide, where fuelwood was collected. Building poles were taken from the mopane forest lying behind the scrubland. As with all resource utilisation, the cutting of trees was controlled by the kings and headmen.<sup>53</sup>

Due to the improved road network and transportation technology forests which had earlier fallen outside the radius for economic transportation have now been opened up to logging. This has led to a situation in which tree cutting has slipped out of the control of local kings, headmen, and government authorities. Even though kings and headmen have retained their right to allocate land they have not had sufficient resources to control logging in the outlying unsettled forest areas. The colonial administration never seriously tried to control utilisation of forest resources, despite the fact that the existing forest laws, from 1952 and 1968, forbade the cutting of wood without a permit.

During the last decades Owambo households have reacted to land degradation in the central area by reclaiming new arable land from unsettled forest areas where they have established branch or second farms, and extending logging to the last remaining virgin forests. Most of the wholesale tree chopping, which started to increase during the 1950s, has been illegal.<sup>54</sup> Since independence this has increased even in the eastern part of the Owambo region, because military roads built by the South African administration during the Namibian liberation struggle (1966-1990) are now open to public traffic. 'It's no good asking everybody to be careful with wood use and to plant more trees, if unscrupulous people are allowed to make a fortune through theft', said the frustrated District Forestry Officer Junius Hailwa in June 1992.<sup>55</sup>

## CULTURE AND DEFORESTATION

Deforestation and degradation of land cannot be handled purely as technical or economic problems. When trying to decrease pressure on vegetation cover and retard deforestation in the Owambo region cultural aspects related to the sources of livelihood have also to be taken into account. The following example deals with the most important Owambo source of livelihood: subsistence farming and animal husbandry. Independent of one's wealth or prestige, farming and animal

## DEFORESTATION IN THE OWAMBO REGION

husbandry are part and parcel of the north Namibian way of life. 'Everyone in Ovamboland is a farmer. Businessmen, teachers, pastors, shopkeepers, craftsmen, all are farmers and all live on their farm', wrote the astonished Danish researcher Axel Martin Jensen in 1990.<sup>56</sup>

Cattle are a resource which have been critical to the land use system and the economy in the Owambo region. Cattle have been a source of manure to maintain soil fertility, a source of dairy products, a source of meat, a source of animal power, and a savings and insurance fund.<sup>57</sup> From the environmental point of view it is problematic that a great number of cattle are still used as a savings and insurance fund and play only a minor role in food production. According to Tapscott the annual take-off of cattle at the end of the 1980s was 4.3 per cent, that is well below the sustainable take-off rate of 10 per cent.<sup>58</sup> Since the 1930s the number of large stock has grown from 143,000 (1932) to 484,000 (1990) and the number of small stock from 181,000 (1932) to 372,000 (1990). The growth in the number of horses, from 295 in 1932 to 4,000 horses in 1990, which can serve only as a status value for their owners, has been explosive. The number of donkeys has increased at an even faster rate, from 3,050 in 1932 to 121,000 in 1990.<sup>59</sup>

Environmental degradation caused by animal husbandry was discussed in late 1992 at a workshop dealing with deforestation in the Owambo region. The workshop called on the government to establish a donkey meat factory, since there were considered to be far too many 'useless' donkeys and the people anyway enjoyed donkey meat.<sup>60</sup> The workshop, however, did not take into account whether households would be willing to decrease their livestock herds. Replacing cattle with a bank account is a considerable cultural issue.

## CAN ANYTHING BE DONE TO STOP DEFORESTATION?

The change of landscape in the Owambo region shocked many refugees when they returned home after living up to 20 years in exile. Almost all those forests they remembered from their childhood had disappeared and many of those returning felt that their native place had changed, becoming barren and desert-like. Stopping deforestation in the Owambo region has been placed at the top of the environmental policy priority list by the Namibian authorities. The Owambo case clearly indicates that deforestation has been a slow, long-term process influenced by numerous different factors. Stopping deforestation would require a large-scale programme which should include demographic, cultural, economic and environmental components. But many decisions made since independence have, on the contrary, further aggravated deforestation. For example, the government has put off solving the acute problem of land ownership. According to the headman of Uukwambi, Herman Iipumbu, the Namibian constitution has given anyone the right to stay wherever they want on communal lands, which has led to the uncontrolled settlement of farmers.<sup>61</sup>

Narrow approaches have characterised the development cooperation projects tackling deforestation both in Namibia and elsewhere. It is not possible to solve this burning and complex problem simply by forestry projects. As Mather has summarised the issue: “the key to the safeguarding of the tropical forest lies in fields of population and agriculture rather than in forestry policies or in silvicultural technology.”<sup>62</sup> This critique does not mean that forestry projects would be useless, but in many cases tackling deforestation requires a much wider approach.

## NOTES

<sup>1</sup> Galton 1853: 205.

<sup>2</sup> See, e.g. Cunningham et al. 1992:50-51; *The Namibian* 3 July 1992, 9 October 1992.

<sup>3</sup> Siiriainen 1989: 181-182.

<sup>4</sup> Erkkilä and Siiskonen 1992: 43-47.

<sup>5</sup> *ibid.*

<sup>6</sup> Siiskonen 1990: 44-49.

<sup>7</sup> Siiskonen 1990: 50-88.

<sup>8</sup> Siiskonen 1990: 50-56.

<sup>9</sup> Assistant Native Commissioner, Ovamboland to Native Commissioner Ovamboland, Oshikango 19 January, 1948, NAO 71, 32/7, NAW.

<sup>10</sup> Fetter 1990: 2.

<sup>11</sup> Stengers 1990: 25-26.

<sup>12</sup> The estimate is based on parish record data from the Oshigambo and Elim parish.

<sup>13</sup> National Planning Commission 1992: 1, 15.

<sup>14</sup> National Planning Commission 1993: 36.

<sup>15</sup> National Planning Commission 1993: 77-79.

<sup>16</sup> National Planning Commission 1993: 36.

<sup>17</sup> The average population density in Namibia was in 1970 0.90 and in 1991 1.70 persons per sq km, (National Planning Commission 1992: 24-25).

<sup>18</sup> Jensen 1990: 10.

<sup>19</sup> Andersson 1987: 187-188.

<sup>20</sup> Siiskonen 1990: 50-53.

<sup>21</sup> See, e.g. Schinz 1891: 292; Bjorklund 1891: 262.

<sup>22</sup> Loeb 1951:290.

<sup>23</sup> Schinz 1891: 483.

<sup>24</sup> For more on the consumption of wood in building, see Erkkilä and Siiskonen 1992: 153-156; Rodin 1985: 8-13.

<sup>25</sup> *The Namibian* 9 October 1992.

<sup>26</sup> See, e.g. Paul 1933: 91.

<sup>27</sup> Cogill and Kiugu 1990: 25.

<sup>28</sup> Erkkilä and Siiskonen 1992: 156-161; cf Koivu 1925: 27-28.

<sup>29</sup> Siiriainen 1989: 172.

<sup>30</sup> *Neueste Deutsche Forschungen in Sud-Afrika: von Karl Mauch, Hugo Hahn und*

## DEFORESTATION IN THE OWAMBO REGION

Richard Brenner, 1866 und 1867, 1867: 291-294.

<sup>31</sup> Koivu, Memoirs II, Hp XIII:1, FMSA; Martti Rautanen's Diary 29 May, 1914, 602-91, NAF.

<sup>32</sup> Erkkila and Siiskonen 1992: 174.

<sup>33</sup> Schinz 1891: 483.

<sup>34</sup> Rautanen to Mustakallio, Olukonda 30 August, 1907, Eac: 24, FMSA.

<sup>35</sup> Officer in Charge at Oshikango to the Native Commissioner, Ovamboland, Oshikango 17 March, 1931, SWAA 3, A 1/2 vol. 1, NAW.

<sup>36</sup> Report of the Commission ... 1964: 291.

<sup>37</sup> Moorsom 1977: 61; Claassen and Page 1978: 18.

<sup>38</sup> Adams and Werner 1990: 144.

<sup>39</sup> See, e.g. Marais, Agricultural survey of Ovamboland with reference to agricultural and stock improvement in that area, Windhoek 29 October, 1949, NAO 101, 43/3, NAW; Report of the Commission ... 1964: 289-291; Claassen and Page 1978: 41-46; Adams and Werner 1990: 143-145.

<sup>40</sup> Elonheimo 1967: 105-106; Rodin 1985: 14. Cf. with Andersson's description of tilling the ground from 1851, Andersson 1987: 202-203.

<sup>41</sup> Bruwer 1961: 74.

<sup>42</sup> Moyo et al. 1994: 166.

<sup>43</sup> NEPRU 1991: 204.

<sup>44</sup> Bruwer 1961: 86.

<sup>45</sup> Banghart 1969: 91-92.

<sup>46</sup> Erkkila and Siiskonen 1992: 74-80.

<sup>47</sup> Native Commissioner, Ovamboland to the Chief Native Commissioner, Windhoek, Ondangwa 6 November, 1956, BAC 39, HN 1/15/2/17, NAW.

<sup>48</sup> For more on the water supply schemes in the Owambo region, see Director of Water Affairs 1968; Claassen and Page 1978.

<sup>49</sup> Kreike 1995: 34.

<sup>50</sup> Native Commissioner Ovamboland, Annual report for 1942, NAO 20, 11/1, v.14, NAW.

<sup>51</sup> Acting Director of Works, Water supplies: Ovamboland progress report, Windhoek 25 August, 1949, NAO 101, 43/1, NAW.

<sup>52</sup> Jensen 1990: 15.

<sup>53</sup> Koivu 1925: 27-28; Elonheimo 1967: 59; Bjorklund 1891: 260-266.

<sup>54</sup> Native Commissioner of Ovamboland to Chief Kamonde, Ondangwa 23 July, 1952, NAO 70, 28/1, NAW; Bruwer 1961: 69; New Era 15-21 October 1992.

<sup>55</sup> *The Namibian* 26 June 1992.

<sup>56</sup> Jensen 1990: 11.

<sup>57</sup> Kreike 1995: 29.

<sup>58</sup> Tapscott 1990.

<sup>59</sup> Native Commissioner Ovamboland, Annual report for 1932, NAO 19, 11/1, v.5, NAW; Directorate of Veterinary Services 1991.

<sup>60</sup> *New Era* 15-21 October 1992.

<sup>61</sup> *New Era* 15-21 October 1992.

<sup>62</sup> Noted in Grove 1991: 48.

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