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## **Small-scale mining – the situation in Namibia**

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## **Small-scale mining – the situation in Namibia**

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### **Abstract**

Small-scale mining provides income generation possibilities to a number of people and can thus help to alleviate poverty in Namibia, a country richly blessed with appropriate geological resources. A legal framework coordinating mining activities is in place, but there are obvious shortcomings regarding small-scale mining operations, particularly with respect to procedures for registering claims and obtaining mining licences. The existing organisation and coordination of assistance to small-scale miners has to be improved and expanded to focus not only on established and recognised miners. It is also clear that the role of women in mining should be enhanced and that “illegal” miners should be incorporated in programmes so as to alleviate their vulnerability and improve their social and economic status. To ensure the sustainable development of this sector, the existing legal framework should be revised, a more inclusive approach that incorporates different social groups should be applied and environmental issues should be raised and addressed.

### **1 Introduction**

The small-scale mining sector can be an important contributor to local economies (Chamber of Mines Journal 1998). For a large number of people, it either constitutes their only source of income or it complements other primary activities such as subsistence small livestock farming. Small-scale mining is, however, often equated with illegal mining operations that are characterised by a complete lack of capital, haphazard mining methods, environmental damage and health and safety risks.

This paper assesses the current situation of small-scale mining in Namibia. This sub-sector constitutes an opportunity to address poverty, especially in rural areas where income generation opportunities are limited. Namibia’s geological resources are substantial and provide mining opportunities not only for large-scale, capital intensive mining operations, but also for small-scale operations. To ensure the sustainable development of this sector, however, it is important that an appropriate legislative framework that sets out the legal requirements for large and small-scale mining be put in place. Legislation should not only address the rights of individuals, but should also ensure that environmental aspects are addressed. An overview is presented focusing on the current legislative framework, existing support structures, effective resource utilisation and the environmental impacts of small-scale mining.

## 2 Contextualisation

Small-scale mining has been discussed internationally over several decades, particularly since the late 1970s in the context of the need to provide legislative frameworks (Bugnosen 1999). One of the problems in developing an international strategy for small-scale mining, however, is the absence of universally accepted definitions. The World Bank classifies all mining operations as small-scale mining if production is approximately 50 000 metric tonnes of unprocessed material per year (Nyambe pers. com. 2000). This definition ignores the social, technical or financial characteristics of the operators.

The understanding and definition of small-scale mining varies widely from country to country. At a workshop on the theme “The importance of mining to industrial development” in Bandung in 1982, an attempt was made to describe and define small-scale mining. No consensus was reached, but the group concluded that definitions have to be case-specific and that the policies, type of economy and small-scale mining operation practices of particular countries have to be considered. Some examples of definitions from different African countries are listed in Table 1 below.

Over the last decade, the focus of attempts to define small-scale mining has shifted from the activity of mining to the people involved in small-scale mining themselves (Bugnosen 1990). On the basis of the definitions given in Table 1 and of personal experience, small-scale miners can be described as being:

- lacking necessary engineering skills;
- lacking business skills;
- lacking funds to operate the mine on a sustainable basis;
- restricted to unsophisticated equipment, with only simple means and techniques used; and
- limited solely to mining as a means of income.

**Table 1: Definition of small-scale mining of different African countries**

COUNTRY	DEFINITION
<b>Guinea</b>	Small-scale mining refers to the exploitation of precious materials, in this case gold, diamonds and other gemstones found in primary or alluvial deposits, outcrops or sub-outcrops.
<b>Burkina Faso</b>	Provides a definition for artisanal exploitation to refer to activities conducted on ore bodies or deposits employing traditional techniques or low mechanisation levels.
<b>Ethiopia</b>	Small-scale mining refers to mining operations designated as such by the Minister, where the annual run-off mine ore does not exceed a certain limit which differs from one mineral product to another and on the basis of the nature of the mineral occurrence. It also provides a definition for artisan mining which refers to non mechanised mining operations of gold, platinum, precious minerals, metals, salt, clay and other similar minerals, as essentially manual nature carried out by Ethiopian individuals or of groups of such persons.
<b>Ghana</b>	Small-scale mining refers to the operations of individuals or organised groups of 4 — 8 individuals, or to cooperatives of ten or more individuals, which are entirely financed (to a certain limit) by Ghanaian resources and carried out on a full-time basis using simple equipment and tools. It also refers to prospecting and mining in an area designated for small-scale mining, using specialised technologies and methods that do not involve substantial expenditures.
<b>South Africa</b>	Small-scale mining and artisanal mining refer to the extraction of minerals with the simplest of tools, on a subsistence level.
<b>Zambia</b>	Small-scale mining operations produce approximately 50 000 metric tonnes annually.

(Compiled after Bugnosen 1998; South Africa: Minerals and Mining Policy White Paper 1998. Zambia compiled after World Bank 1972.)

### 3 Relevant Legislation

In the following an overview of Namibia's small-scale mining situation is presented focusing on the legislative framework, current activities and programmes and environmental performance requirements. To empower formerly disadvantaged communities, it is important that a legal framework which sets out rights and limitations is in place.

Two Acts are especially important when dealing with small-scale mining activities. The Minerals (Prospecting & Mining) Act sets out the requirements for obtaining mining claims and licences to conduct mining activities. As stated above, it is necessary to deal with not only the formal administrative requirements, as health and safety issues have to be incorporated to ensure that miners involved in small-scale mining activities are operating in a safe environment. New Mine Health and Safety Regulations are currently being drawn up, and a brief overview is provided of the

draft regulations. The acts should ensure that miners are enabled to participate in Namibia's economy and that environmental needs are appropriately addressed.

### 3.1 Minerals (Prospecting & Mining) Act, No. 33 of 1992

The Ministry of Mines and Energy is the custodian of Namibia's mineral and energy resources and is responsible for facilitating and regulating their development and sustainable utilisation. The rights and duties relating to mining activities are laid out in the Minerals (Prospecting & Mining) Act, No. 33 of 1992 (hereafter referred to as the Mining Act). The following stipulations and definitions, as determined in the Act, are relevant to small-scale mining:

- A '**Non-Exclusive Prospecting Licence**' (NEPL) has to be granted to any person before he or she is allowed to peg a claim. The procedure is set out in section 25 to 30 in the Act.
- A '**claim**' means an area of land which has been pegged as a claim in accordance with the provisions of Part VI. A claim defines an area of 600 m x 300 m.
- A '**claim area**' means an area of land defined by a mining claim.
- A '**mining claim**' means a claim registered under section 36 and includes the renewal of the registration of any such claim.

Part VI, Section 25 – 30 deals with the regulations relating to pegging claims, and has been designed to assist and enable small-scale mining. These special licences allow Namibian citizens (25(2)(a)), companies owned by Namibian citizens (25(2)(b)) and other companies approved by the Minister of Mines and Energy to peg claims and start mining them within six months. The maximum number of claims that may be held by one owner is 10. The Minister has the authority to increase the permissible number of claims of one holder if good reasons are given (26). Claims are valid for three years and may be renewed for two-year periods provided that they are worked.

Sections 31 – 45 contain the provisions relating to mining claims. Often land rights and mining rights belong to different people. The mining rights holder is required to compensate the landowner for any inconvenience or damage which might occur as a result of mining activities. Sections 43(2)(a – b) contain regulations relating to the abandonment of a mining claim. Works erected or permanent constructions have to be removed from the site as agreed upon, and necessary steps to remedy any damage to the surface and the environment have to be carried out to the reasonable satisfaction of the Minister.

Prior to pegging a claim, a prospective claim holder is required to apply for a Non-Exclusive Prospecting Licence (NEPL). This licence bestows the right to peg the claim, which must then be registered with the Ministry of Mines and Energy (MME). Prior to the granting of the claim, an Environmental Questionnaire dealing with environmental issues such as water, waste, new access creation and the ultimate rehabilitation of the mining site has to be completed. The Environmental Questionnaire creates a base upon which an Environmental Contract (EC) is drawn up

and entered into by the Ministry of Environment and Tourism (MET) and the claim holder. Both the MME and the MET have to approve the EC. In terms of this contract, the claim owner agrees to submit an Environmental Report to the Mining Commissioner every six months to allow access to inspectors from the MME/MET at any stage, and to keep records of environmental performance (Mining Act 48(4)).

A shortcoming of the Namibian legislative framework is that the term ‘small-scale mining’ is not defined in the Minerals and Prospecting Act. In practice, however, it is widely understood to refer to the mining operations of claim holders and persons in possession of an NEPL who make use of basic mining technology. Furthermore, the Namibian legislation deals with small-scale mining in the context of general mining legislation, and consequently does not provide clear stipulations pertaining specifically to small-scale mining.

The Environmental Contract is intended to accommodate small-scale miners who do not have sufficient financial backing to conduct a full environmental assessment. It also serves to raise environmental awareness within the small-scale miner sector. The shortage of mining inspectors and funds restricts the proper enforcement of Environmental Contracts. Most small-scale miners do not submit biannual reports, and no measurements have yet been taken by either MET or MME. The only action currently taken by MET is the sending of a letter reminding the client to meet contractual obligations. One course of action might be to take stronger action in the cases of miners who do not provide biannual reports in time and give them a three months period of grace, whereafter they would lose their claims and mineral rights. The legislation does not address the need to legalise currently unrecognised small-scale miners, and another shortcoming of current practice is the centralisation of administration in the capital city, Windhoek. This makes it difficult for some small-scale miners, especially in remote areas, to apply for an NEPL to be able legally to peg claims.

It is recommended that the administration of NEPL applications be decentralised. For example, MME staff members could on a monthly basis open offices in district towns to make access to NEPLs and Environmental Questionnaires easier, particularly for small-scale mining operations.

### **3.2 Mine Health and Safety Regulations (11<sup>th</sup> draft)**

The MME is currently in the process of drafting new legislation which will address health and safety regulations in mines, and will apply to **all** mineral licence areas within Namibia. The new regulations will replace the Mines, Works and Mineral Ordinance (20 of 1968) insofar as it deals with the matter of mine health and safety. The MME is to ensure that all relevant legislation is incorporated in the new regulations. The Chief Inspector of Mines will be responsible for administration and implementation of the regulations set out in this legislation. A new Mine Health & Safety Board will be established to ensure that the rights and duties set out are implemented and to advise the minister regarding questions related to the new legislation.

The regulations define all possible health and safety risks which might occur in land-based and off-shore mining operations and provide for measures on how to deal with them. The final version of the regulations has not yet been drafted, and it is recommended that small-scale mining be addressed separately, as certain requirements pertinent to large-scale mining operations might not be realistic for small-scale activities.

The existing legal framework has shortcomings when applied to existing small-scale mining operations. This aspect will be shown while discussing the current situation of small-scale mining activities and programmes.

#### **4 Current small-scale mining activities and programmes**

The main areas in which small-scale mining occurs are in the northern and north-western regions of Namibia – in Kunene, Erongo (i.e. Brandberg, Uis and Spitzkoppe) Otjonzondjupa and Khomas (especially around Rehoboth), and two southern regions, Hardap and Karas (see Figure 1).

No exact data regarding the number of small-scale miners are available, but it can be assumed that their contribution to the GDP is negligible. The Namibian Economic Policy Research Unit (1998) estimates that 500 – 1000 people are involved in small-scale mining countrywide. However, the number provided by the Namibian Small Miners Assistance Centre (NSMAC) is much higher, and approximately 2 500 small-scale miners are registered with or have sought advice from the NSMAC since its establishment (Shafashike pers. com. 2000). This figure does not differentiate between licence holders on the basis of the number of claims they hold, and some of these NSMAC members could possibly be counted as medium-scale miners.

In 1999 the NSMAC conducted a survey of small-scale miners working around Uis and Spitzkoppe (near Usakos) to gather information on their living conditions and educational backgrounds. The survey was never published after it became apparent that most small-scale miners in this area were operating illegally (Bugnosen pers. com. 2000). It must also be noted that many such miners are found in the Warmbad area (Bugnosen & Schafishike pers. com. 2000). Taking this information into consideration, it is difficult accurately to determine the number of small-scale miners in Namibia.



The current list of claim holders, which is updated on a daily basis, is available at the MME. There are, however, conflicts between the data base of Environmental Contract holders compiled by MET and that of claim holders compiled by MME: the number of EC holders is higher than the number of claim holders. This can perhaps be explained by the fact that MET probably does not update its data base on a daily basis, and therefore still lists EC holders who no longer hold the claim. Figure 2 indicates the number of claim holders, divided into those granted, those pending and the total number of applications, by regions (MME 2000).

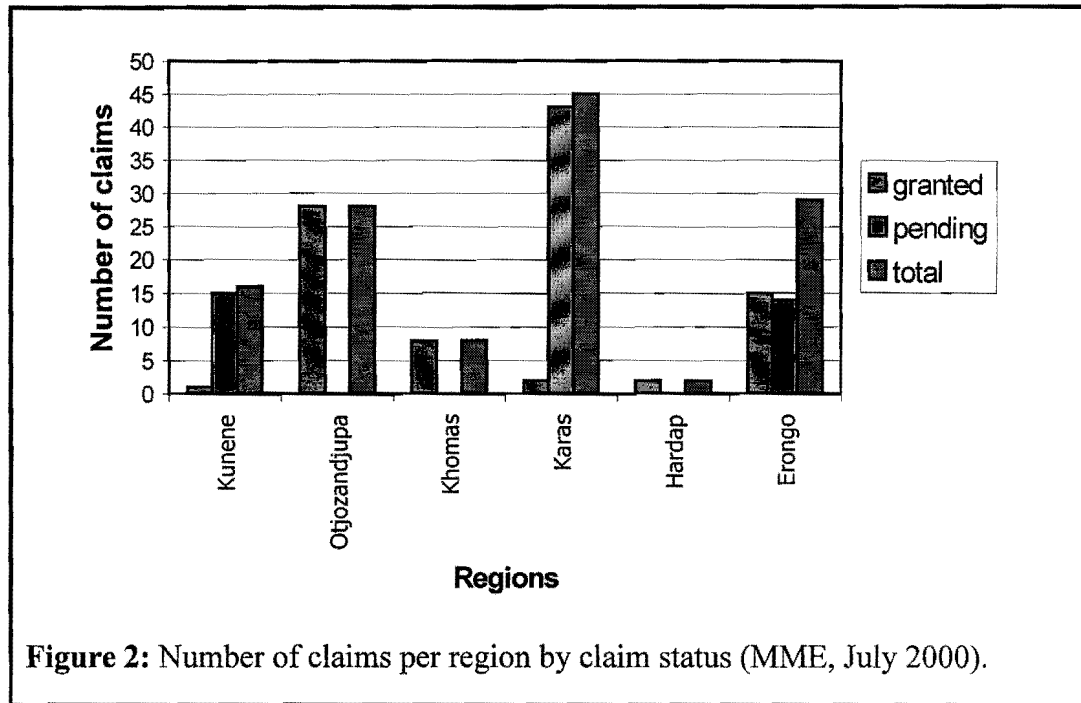


Figure 2: Number of claims per region by claim status (MME, July 2000).

#### 4.1 Part-time and subsistence/artisanal small-scale miners

Field observations (March/April 2000) revealed that a number of different mining activities are included under the term small-scale mining. To acknowledge this, small-scale mining activities could be further divided into part-time income generation small-scale mining and subsistence/artisanal small-scale mining. As noted earlier, none of these activities are clearly defined. However, an attempt to define these two types of small-scale mining using examples is made below.

##### *Part-time small-scale miners*

Part-time small-scale miners are mainly commercial farmers, or people with employment in other economic sectors, who either have the claim rights or own both the land rights and the claim rights. Examples of this type of small-scale mining are given in Box 1.

### Box 1: Part-time small-scale miners

#### Example A

Mr. D. de Wet is the owner of farm Mickberg 262 located north of Grunau. The claim comprises an area in which rose quartz is found. Work on the site started in November 1999. Before 1994 other claim holders were working the mining area. Since 1994 the land and claim rights have belonged to the same person. Presently three permanent workers are employed by Mr. De Wet reworking the waste material of the open pit mine. Permanent basic accommodation is provided adjacent to the mine. Water collected from boreholes on the farm for human consumption is provided in canisters. A 'long-drop' toilet has been dug on site.

An Environmental Contract as stipulated by the Minerals & Prospecting Act was drawn up and was approved by MET and by MME in May 1999.

The mining of rose quartz is an additional source of income creation for Mr. de Wet so that he is less vulnerable in his farming activities in drought years. The main income is earned by small stock farming (sheep) and game farming. The game is monitored closely and game hunting is offered to tourists on the farm when numbers exceed the carrying capacity of the farm. Further income is generated by Mrs. De Wet, who has set up overnight accommodation for tourists and travelers in the old farm house.

(Source: Site visit and interview with Mr. De Wet, 28/03/2000; Environmental Contract provided by MET.)

#### Example B

Mr. P.M. Steenkamp holds a claim licence in the Gelop Oost, Communal Land, north-west of Keetmanshoop. His target is to find a diamondiferous kimberlite pipe. He is employed by the Municipality in Keetmanshoop and works the claim only occasionally over weekends. **Plate 1** shows the prospecting area. Generally he employs 5 to 6 people from Keetmanshoop to help him to work on the claim over long weekends. These people earn N\$ 40,00 per working day.

Communal farmers live approximately 2 km east of the mine, and according to Mr. Steenkamp the farmers see no problem occurring from his mining activity. An Environmental Contract as stipulated by the Minerals & Prospecting Act has been carried out and was approved by MET and MME in January 1999.

Mr. Steenkamp's prospecting activities for diamonds in this area do not generate income for himself, but they do create employment for the occasional workers on site.

(Source: Site visit and interview with Mr. Steenkamp, 30/03/2000; Environmental Contract provided by MET.)

#### Example C

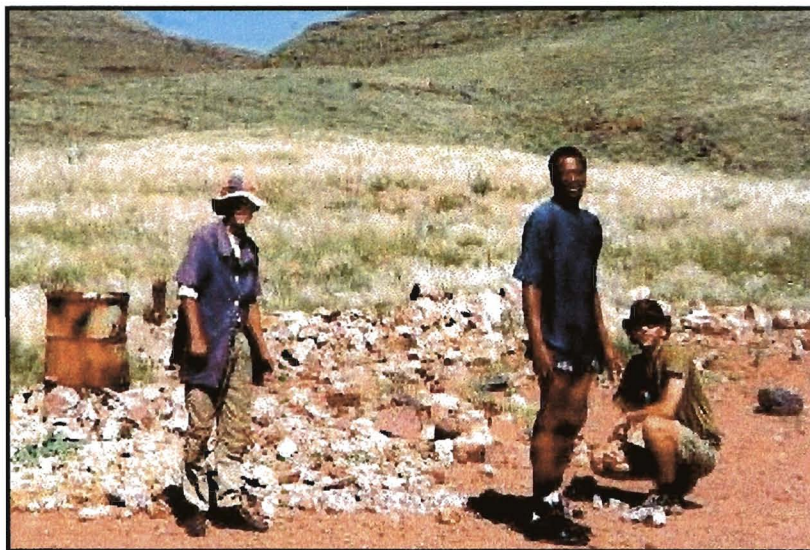
Mr. E.P Motladiile holds a claim licence at the northern flank of the Brukkaros Mountain, which is located on communal land. Amethyst is mined on this site. Mr. Motladiile does not live in the area, and a local small livestock farmer looks after his equipment and the mine while he is not on site. **Plate 1** shows the amethyst mining and storage area. According to the farmer local people are employed for mining the amethyst.

An Environmental Contract as stipulated by the Minerals & Prospecting Act was drawn up and was accepted by MET and MME in October 1999. Basic shelter facilities exist on site, but water has to be brought in from the nearby settlements.

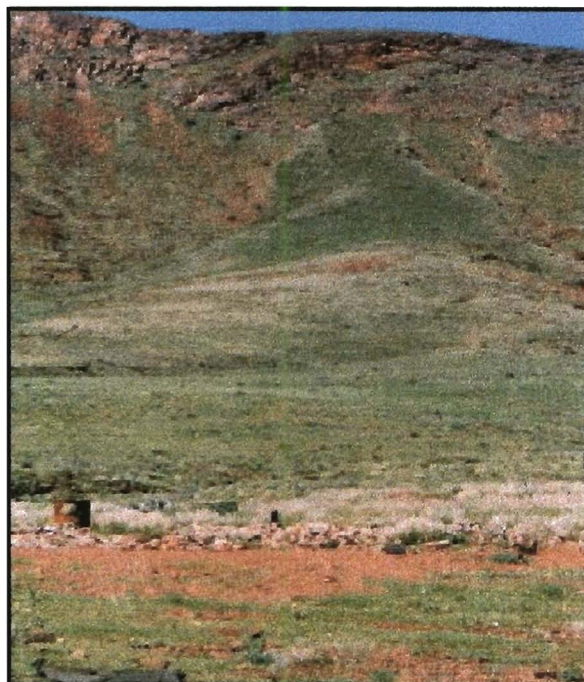
(Source: Site visit and interview with people on site, 02/04/2000; Environmental Contract provided by MET)



a



b



c

**Plate 1:** Illustration of part-time small-scale miners.

a Part-time small-scale mining site, Gelop Oost, Communal Land, north-west of Keetmanshoop.

b/c Amethyst small-scale mining at the north flank of the Burkkaros Mountain, Hardap Region.

### ***Subsistence/artisanal small-scale miners***

Subsistence/artisanal small-scale mining is often undertaken by a single person helped by family members, and is the main source of income. Often small livestock farming is carried out in combination with the mining activities. Most of these small-scale miners are found in the Spitzkoppe-Uis area and further north. Information gathered during fieldwork in southern Namibia showed that this type of small-scale mining is not very common. Two factors are responsible for this distribution. Firstly, the majority of southern Namibia is commercial farmland and access to these areas is difficult. Secondly, geological information is collected by the Geological Survey of Namibia (GSN) located in Windhoek, and it is difficult to access for most subsistence/artisanal small-scale miners in southern Namibia. In addition, non-geologists may not easily understand geological information and data provided by the GSN.

The reasons given above may explain why only a few subsistence/artisanal small-scale miners operate in southern Namibia. No examples can be given of subsistence/artisanal small-scale mining operations, as it was difficult to establish contacts with any of them during the field trip in southern Namibia. In Box 2 examples of subsistence small-scale miners in Namibia are given.

#### **Box 2: Subsistence/artisanal small-scale mining**

##### **Example A**

Mr. G. Augustus holds two claim licences in the Tafelkop-Uis area. He is mining the area for semi-precious stones. In total 12 people who are living in the mining town of Uis are working the claims. According to the Environmental Contract no vehicles or earth moving or drilling equipment is used. Holes are dug with shovels and after the semi-precious stones have been recovered they are filled with waste rock material. The mining activity is the only source of income and the semi-precious rocks are sold either in the Uis shop or to tourists from a stall next to the road.

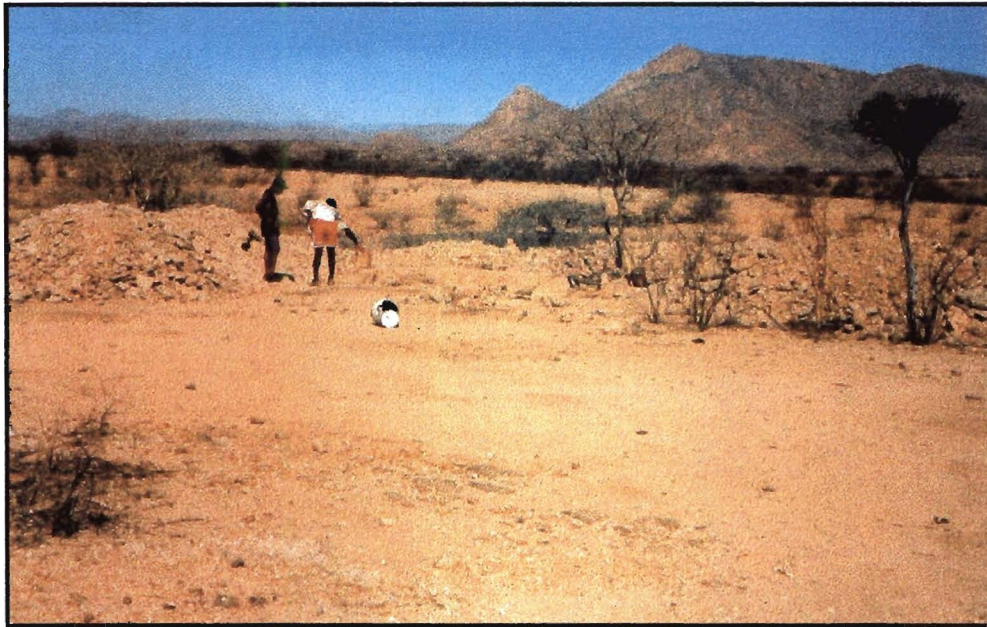
Mr. G. Augustus is not able to write and the contracts were filled out with help from people of MME and MET.

(Source: Environmental Contract provided by the Ministry of Environment and Tourism.)

##### **Example B**

Semi-precious rocks are mined in the Erongo Region with the help of the whole family. All family members live on the site in semi-permanent housing (see Plate 2). No heavy machinery is used on the site. The Namibian Small-scale Miners Association provided the photos shown in Plate 2. It is not clear if a claim licence was obtained or if an Environmental Contract has been signed with MET.

(Source: Environmental Contract provided by the Ministry of Environment and Tourism)



a



b

**Plate 2:** Illustration of subsistence/artisanal small-scale mining.

a Small-scale mining site, near Erongo Mountain.

b Semi-permanent housing of small-scale miners operating in the area.

Small-scale mining provides a substantial opportunity to increase local economic development and it is important that all formerly disadvantaged social groups be incorporated in this process to ensure fair and sustainable development of the sector. Attention should therefore be given to the legalisation of illegal miners and the inclusion of women in small-scale mining. The issue of illegal subsistence/artisanal small-scale mining has to be dealt with to improve the standard of living of such miners and to expand the local economy.

Until lately women have not participated in small-scale mining. This can be explained by the cultural and social system that prevents women from participating in so-called technical activities. This gender inequality has to be addressed and it is high time that special attention be given to the situation of women in mining.

#### **4.2 Illegal small-scale mining activities**

A major problem experienced by some subsistence/artisanal small-scale miners is their illegal status, which is often a result of their lack of transport or the financial means to travel to Windhoek to be able to obtain the relevant licences. Furthermore, financial and technical assistance is only given to official small-scale miners, which creates a self-perpetuating circle that is difficult to escape. Information gathered during a field visit to Neu Schwaben is given in Box 3.

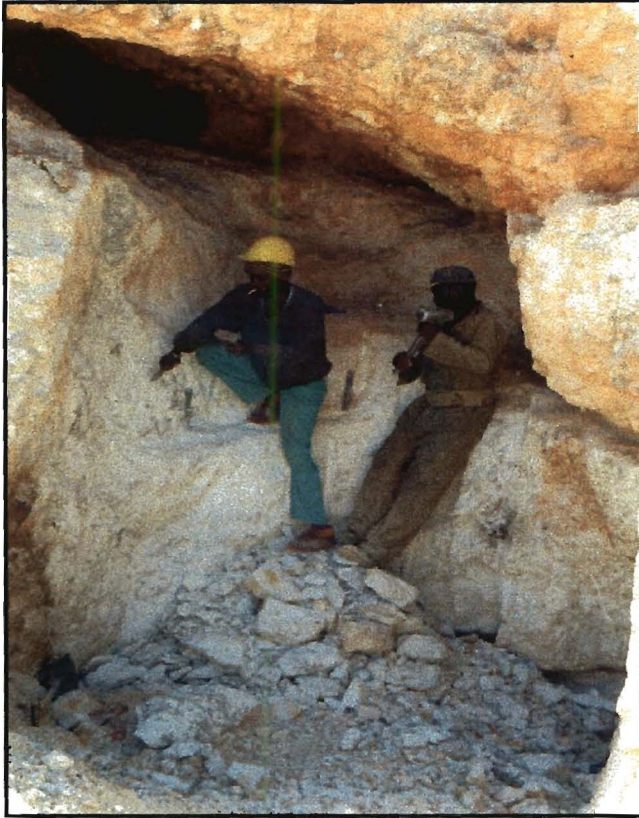
##### **Box 3: Illegal small-scale mining activities on the tourmaline deposit at the farm Neu Schwaben**

Mr. E. Gotthard, who holds a claim on the tourmaline deposit at the farm Neu Schwaben, assisted in setting up a meeting with illegal miners who work in the area. At present approximately 200 illegal miners work in the area. The tourmaline which occurs in a pegmatite is mined with primitive tools such as picks and hammers (see Plate 3). Some of the miners operate with high pressure hammers, but they are dependent on other people for the supply of fuel.

The miners live along the road where over the years a shanty town has developed. Water is collected from a dam nearby and no sanitary or waste disposal facilities have been established (Plate 4). There is an urgent need to address these issues, as litter is scattered all over the place.

The illegal miners get unofficial assistance from other small-scale miners, who provide them with more sophisticated tools. Furthermore, tourists and well-known gemstone dealers travel to the area to buy tourmalines which are illegally mined. The need to address the situation of these small-scale miners is high. At present the illegal small-scale miners are unofficially allowed to mine in the area and the government has not taken any action to address this problem. However, it is important to provide these miners with legal assistance to enable them to apply for help from small-scale development organisations and to ensure that a decent price for the mined tourmalines is paid. Presently, the illegal small-scale miners are forced to sell the mined tourmaline for almost any price they are offered.

(Source: Site visits and personnel interviews, 17/09/2000)



a

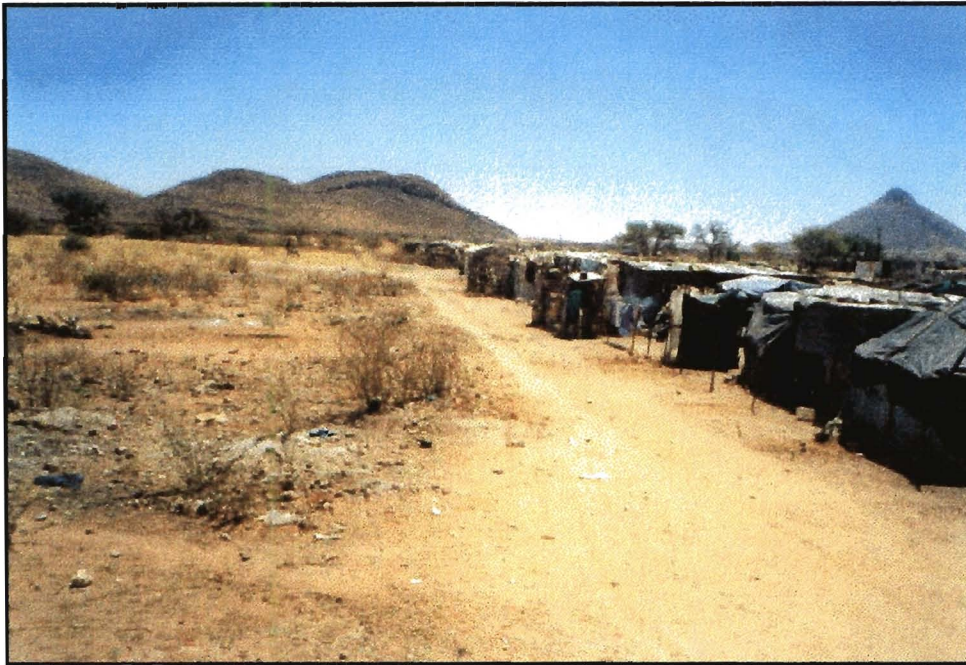


b

**Plate 3:** Illustration of illegal small-scale mining activities on the tourmaline deposit at the farm Neu Schwaben.

**a** Primitive tools are used to mine tourmaline.

**b** Unsafe working condition. The holes are up to five meter deep and tunnels are dug to follow the tourmaline occurrences. The latter is constructed using old car frames.



a



b

**Plate 4:** Illustration of living conditions of illegal small-scale miners at the farm Neu Schwaben.

- a Squatter camp of illegal small-scale miners adjacent to the road to Karibib. No sanitary facilities are in place and litter is dump all over.
- b Close up of housing conditions. Water is collected form the dam showing in the background. The dam is part of the NamWater water scheme.

### 4.3 Woman and small-scale mining

Not much has been done to date to encourage women in small-scale mining, and no official programme has been set up in Namibia. Over the past years other southern African countries have addressed this issue and a number of workshops and meetings have been held. For example, the United Nations Development Fund for women (UNIFEM) has set up different development programmes and capacity-building opportunities for women involved in small-scale mining.

A group of 12 women have started a Women's Small-scale Mining Association (MSSMA) in Keetmanshoop (Ha-Eiros pers. com. 2000). The initiator of this project is Mrs. Ha-Eiros (see Box 4), who has attended various SADC and UNIFEM meetings and conferences in the past.

Monetary or technical support requested from the Namibian Small Miners Assistance Centre has not been provided to the WSSMA (Ha-Eiros pers. com. 2000). It is believed that much work is needed to assist women in small-scale mining in Namibia, so that income generation opportunities can be exploited.

#### **Box 4: Women in small-scale mining in Namibia**

In 1994 Mrs. I. Ha-Eiros participated in the Women in Mining workshop in Zimbabwe, which focused mainly on gold operations. On her return to Namibia she initiated the first meeting of women involved in mining in southern Namibia, and the unofficial Women in Small-scale Mining Association (WSSMA) was founded in Keetmanshoop. An aspect addressed by WSSMA is that no unprocessed minerals should leave Namibia. A workshop organised by WSSMA and sponsored by the Friedrich Ebert Stiftung focusing on the evaluation of gemstone quality and possible machinery and tools to process gemstones in Namibia was held in Keetmanshoop at the beginning of April 2000 (Ha-Eiros pers. com. 2000).

In addition, Mrs. Ha-Eiros holds a claim licence in the Aus area. The claim is worked with the help of her husband. Mrs. Ha-Eiros is a resident of Keetmanshoop and work on the claim is only carried out occasionally. She is also actively involved in setting up cutting and polishing facilities in Keetmanshoop.

(Source: Interview with Mrs. Ha-Eiros, 30/03/2000)

The examples of illegal small-scale mining and Mrs. Ha-Eiros show that it is important to have a supportive organisation in place. At present only the Namibian Small Miners Association has been set up and the above-mentioned groups are not profiting from the services they offer. Nevertheless, an overview of this organisation is given.

#### 4.4 Namibian Small Miners Assistance Centre (NSMAC)

In January 1997 the Ministry of Mines and Energy (MME) established the Namibian Small Miners Assistance Center (NSMAC) with a grant from the European Union (EU). NSMAC is an independent, non-profit organisation aiming to enhance the status of small-scale mining and to provide training and technical and monetary support for small-scale operations. The NSMAC focuses mainly on tin, gold, copper and semi-precious stone operations (NDP I 1996). The aim is to have small-scale entrepreneurs undertaking to offer services for contract drilling and blasting, transport, milling, leaching and so on. These contractors will franchise their operating units through the small-scale scheme.

At the end of 1998 it became clear that the established goals were not being met. Consequently, in November 1999 the NSMAC developed new strategic objectives, outlined below.

##### **Institutional objectives:**

- Establish a legally instituted NSMAC with clearly defined strategic programmes, policies, management structure and trained personnel;
- Develop and maintain NSMAC as a self-sustaining non -profit institution with diversified sources of funding and/or income.

##### **Practical objectives:**

- Facilitate registration and licensing of small-scale mining operations;
- Develop and provide simplified geological information on minerals/deposits suitable for small-scale exploitation by miners;
- Provide technical services, assistance and information to small-scale miners;
- Provide and/or introduce mining and processing facilities and technologies to small-scale miners;
- Provide marketing assistance and services to small-scale miners;
- Develop and offer appropriate training courses to small-scale miners.

The NSMAC has assisted some small-scale miners who obtained the mineral rights, but to whom farmers refused access to their farms. Often these clients are referred to the Mineral Right Authority Committee for further assistance (Mr. Shafashike pers. com. 2000).

At present the NSMAC has not met all the objectives stated above. No training courses have been developed, and simplified geological information is only provided by oral communication. Environmental problems and safety measurements are not addressed in the strategic objectives. It is known that small-scale mining is often associated with adverse environmental effects. This is especially true when mining activities are carried out in an arid environment. A “spin-off” effect causing stress on the biophysical environment is that miners often bring their families and livestock with them, as it is the case in the Spitzkoppe area.

Regarding marketing assistance and services, NSMAC has established contacts between existing gemstone dealers/shop owners and small-scale miners. Unfortunately, most of these contacts are situated in Karibib, Usakos or Windhoek, and access to these markets is difficult for small-scale miners in the southern regions of Namibia.

It is recommended that attention be given to illegal mining activities, and that possible solutions should be sought to legalise these miners. So far the problem of illegal mining has not been sufficiently addressed by the Namibian Government. For example, on the farm Neu Schwaben green and blue tourmaline is mined. Small-scale miners moved into the mining area (see Box 3). A dispute developed when an EPL licence was granted for this area to one person, and according to Namibian law it is not possible to peg a claim in an area which is already covered by another licence. These small-scale miners operate illegally and in the past have hindered the ongoing mining operations. At present only illegal small-scale mining operations are continuing in this area.

It is important that small-scale mining is organised to ensure the promotion and sustainable development of this sector. Irrespective of the type of mining involved, performance has to be monitored. The rights of the miners must be protected, but at the same time measures must be instituted to minimise the environmental impact associated with mining operations.

## **5 Environmental Performance**

Mining in general, including small-scale mining, is in essence a destructive process. It is therefore bound to take its toll in terms of environmental degradation, particularly in arid lands. Physical degradation in arid environments usually has long-term aesthetic implications due to the low rate of regeneration of desert landscapes. Nevertheless, mining activities (large-, medium- and small-scale) take up only 0.1% of the total land surface of Namibia, and it can be concluded that the area covered by small-scale mining operations is negligible. However, this does not say anything about the actual impact of mining activities on the surrounding areas. As stated earlier, in assessing small-scale mining's secondary impacts on the environment one must bear in mind that in some cases whole families move into the mining area bringing their small livestock with them, which impacts negatively on vegetation and soil. In addition, new paths or roads are established providing access for more people, and in most cases no sanitary facilities or boreholes are established.

In terms of the Minerals and Prospecting Act, small-scale miners must apply for a Non-Exclusive Prospecting License (NEPL or claim license) before pegging the claim. Often the land rights are owned separately to the mining rights. The mining right holder has to compensate the landowner for any possible inconvenience or damage as agreed in the contract. The Act also provides regulations governing the abandonment of a mining claim. Works erected or constructions made have to be removed from the site as per agreement and necessary steps to remedy any damage to the surface and the environment have to be carried out to the satisfaction of the

Minister (MME). At present, however, there is inadequate enforcement of these requirements.

As discussed above, small-scale mining operators are not required to undertake a full environmental impact assessment. Rather, the claim owner must complete an Environmental Questionnaire (compiled by MME & MET) regarding proposed and existing mining activities and potential impacts. This forms the basis for an Environmental Contract between the claim owner and MME/MET. In this contract, the claim owner agrees to submit an Environmental Report to the Mining Commissioner every six months, to allow access to inspectors from MME/MET at all times and to keep records of environmental performance.

This procedure constitutes an attempt to accommodate small-scale mining operations established prior to the promulgation of the Minerals and Prospecting Act. In addition, as small-scale miners do not have sufficient financial resources to conduct an environmental impact assessment, the Environmental Contracts are intended to raise environmental awareness and to indicate measures that can be taken to protect the environment.

Due to a shortage of mining inspectors and insufficient funds, however, Environmental Contracts are not properly enforced.

### **5.1 Possible impacts of small-scale mining activities on the environment**

The impacts of small-scale mining can be divided into primary and secondary impacts. Primary impacts result from the mining activity itself. Secondary impacts result from spin-offs of the mining activity and are more difficult to foresee.

<b>Primary Impacts</b>	<b>Secondary Impacts</b>
<ul style="list-style-type: none"> <li>• Risks/hazards from mining activity</li> <li>• Water consumption, minimal</li> <li>• Scars on landscape</li> <li>• Destruction of natural habitat (flora/fauna)</li> </ul>	<ul style="list-style-type: none"> <li>• Accessibility of area (people move in, access to exploit flora/fauna, fire wood)</li> <li>• Littering, sewage</li> <li>• Family members follow with small livestock, additional impact on fauna and flora</li> <li>• People from other regions move in – money not spent in the region</li> </ul>

The secondary impacts are neither addressed in the Mineral and Prospecting Act, nor in the NSMAC programmes. The current legislation deals solely with the extraction of minerals and the rights relating to this. The development of the EC is an attempt to provide measures for control of the environmental performance, but as stated earlier the follow up procedures have been neglected. A probable explanation for this is that Namibia does not have a legislated Environmental Act. The draft version was finalised in 1998, but subsequently has not been passed by Parliament.

## **6 Policy suggestion**

An holistic approach to small-scale mining that provides opportunities to uplift this sector while mitigating environmental problems is important. Namibia has attempted to tackle this matter by establishing the NSMAC, but this is only the beginning and a number of issues and problems have to be taken into consideration for future development.

Shortcomings which have to be addressed to make small-scale mining sustainable in Namibia are:

### **Licence system**

At present two critical issues regarding the existing licence system have to be raised:

1. The administrative procedure to register a claim is centralised in Windhoek. This might be an obstacle for some small-scale miners who live and operate in remote areas. It is suggested that on a rotating basis MME/MET officials are present in the districts to enable everybody to apply for a licence.
2. Attention should be given to the possibility of adapting the existing licence system so that it more closely resembles those in other countries, e.g. Zambia. Specifically, small-scale mining activities should be closely monitored and should it become obvious that the mine changes its character (output, technology) it should have to be upgraded to another licence category.

### **Illegal small-scale mining**

Stronger action has to be taken to address the problem of illegal small-scale mining, so that this group is given legal status, and thus to help prevent unacceptable mining practices, poor health and safety conditions and the wastage of resources. In addition, illegal mining creates an informal market which drives prices down, resulting in lost tax revenue for the State. The maintenance of black markets ultimately limits the miners' revenue potential.

A way to address these issues has to be sought, preferably through cooperation between MME, MET and NSMAC.

### **Women in small-scale mining**

Although this issue is addressed in other southern African countries, no official project has been set up in Namibia.

## **Training programmes**

Training programmes focusing on technical, legal and environmental issues of small-scale mining should be developed taking the present circumstances in Namibia into account.

Suggestions regarding institutional shortcomings are:

### **Namibian Small Miners Association Centre (NSMAC)**

At present most of the new strategic objectives of the NSMAC mentioned above have not been met. Given that the new strategic objectives were developed in November 1999, some should have been in place by now. Furthermore, it is suggested that NSMAC incorporate environmental issues and the role of women in small-scale mining in their objectives.

### **Ministry of Mines and Energy (MME)**

It is suggested that MME revise the licence system, and in due course also the Minerals and Prospecting Act, to introduce small-scale mining laws that are distinct from overall mining legislation. In this process, the problem of illegal small-scale mining should be considered. The problems arising from this practice can only be addressed once the illegal miners have been legalised.

At present it is clear that there is a severe shortage of staff members in MME. The present number of mining inspectors is not able to meet the requirement that all mining sites should be visited at least twice a year, or to ensure that all obligations related to the licence are met.

### **Ministry of Environment and Tourism (MET)**

The MET is responsible for ensuring that the environmental obligations of mining operations are met. With regard to small-scale mining, these obligations are contained in the Environmental Contract which has to be entered into before a claim is granted. It is recommended that in the future more stringent measures are put in place to enforce the submission of biannual reports, and if possible more field visits should be undertaken.

## **7 Conclusion**

On the basis of the findings regarding the situation of Namibian small-scale miners, it is clear that a number of activities should be undertaken and legislative changes introduced to address existing shortcomings.

As stated above the existing legislation is basically sound, but certain articles, such as those determining the registration procedure, should be revised to

accommodate more small-scale miners. Furthermore, small-scale mining operations and their environmental performance should be more stringently controlled. Harsher penalties should apply in cases where small-scale miners fail to submit biannual environmental performance reports.

Special attention should be given to the proposed training programmes of NSMAC. It should be possible for some modules developed by NSMAC to be in place by beginning of 2001. The training programmes should aim to improve understanding of the legislative framework in Namibia and to raise environmental awareness. Technical and financial advice from larger established companies in Namibia should be incorporated in the programmes. To raise money to fund these programmes, the possibility of establishing a special tax payable by larger mining companies should be investigated. On the other hand, special technical and financial help provided directly to small-scale miners by larger companies should be tax deductible. The co-ordination of such assistance with programmes should lie with NSMAC in cooperation with MME and MET.

Small-scale mining in Namibia demands immediate attention. The institutional infrastructure does exist, but better coordination and probably more staff will be required to achieve a sustainable situation in the future.

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