



# Uis tin project – setting the stage

by Eliphas Hawala

When Phase I of the Uis project ended in August 1995 it faced many challenges. The engine of the mobile crusher had broken down a week earlier. Imkor, the company that used to run the tin mine, had finally sold all its assets and also announced its intention to stop buying tin from the micro scale miners. The complete transfer of assets to the private person buying virtually the whole of the town of Uis would take place in November 1995. The buyer had also applied for the mineral rights in the former Imkor mining area thus potentially throwing the micro scale miners out of their working area. The micro miners were thus left in limbo.

The immediate technical difficulties thus were:

- Buying of tin
- Imkor's selling of all its properties
- Unsafe mining in the former open pits.

When the staff from the Raw Materials Group and the Ministry of Mines and Energy sat down to map out a strategy one of their concerns was how to prioritise activities. The social problems facing the community of Uis on the one hand and the technical problems facing the micro scale miners on the other both had to be taken into account. There was an urgent need to increase production. In order for the micro scale miners to produce a saleable quantity of tin some mechanisation had to be introduced. Further the work environment of the micro miners was unsafe.

A decision was made to first set up a pilot concentration plant and later to deal with the social issues. The search for a suitable site for the proposed plant where water and electricity is available and which is not too far away neither from the mining area nor the Uis township where the micro miners live then began. Such a site was found close to the Imkor former mining area.

In November 1995 a local contractor presented a plan for the proposed pilot plant:

- \* 1 jig with "indefinite life"
- \* 1 hammer mill capable of fine crushing to – 6 mm
- \* 1 James table

The contractor planned to salvage most material for building the plant locally in order to meet the shoe string budget allocation. Metal recovery would only be maximum 75% but compared to earlier hand methods this was considered acceptable. All major equipment were second hand, electric motors were rewired and conveyor belts refurbished etc. The only new equipment was the electric switch board.

Land for the plant was to be leased from the state on a "permission-to-occupy" basis. This deal is still not finalised. A package deal was made with the new owner of the old mine's assets and a transformer and a couple of water wells were bought. In total the plant cost around 110 000 Namibian dollars (equals roughly 25 000 USD). The maintenance of the plant is mainly greasing of parts, exchanging of belts and jaws on primary crusher and hammers of the mill.

## Operations

The metals traders of Southern Africa prefer to buy a minimum of 10–15 tons of tin concentrate, ie a container load. Selling of smaller quantities is uncertain and gives lower prices. The micro miners had to be trained to increase their production and productivity. This could only be done by re-organising the way they work. At the start, working in a group set-up was difficult and unclear to some of the micro miners. They were used to working individually and without a long term plan for the work. The solution was to rely on a local NGO, Namibia Development Trust (NDT) to train the often illiterate micro miners on organisational matters while the engineers concentrated on the technical problems.

Cooperation between the project and the Uis community was always carefully

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*The concentration plant built from locally available materials.*

maintained. Regular meetings were held with the community, where many questions were filed:

- "Who initiated this project?"
- "What input do we have in decision making?"
- "Items donated to the project, do they belong to the community?"
- "What will happen when Swedish support and the assistance from the Ministry of Mines and Energy ceases?"

Training for the people going to be operating the plant was initiated. Eventually the plant was inaugurated on August 14 1996.

### Finance

For the period late 1996 to early 1997 the plant has been operating for only 2 hours daily due to water shortage. Production has averaged 17 kg every 2 hours. After installation of water recirculation the plant can now produce for two 8 hours shifts every day. There is still some way to go to reach the 130 kg of tin concentrate per day needed to break even. However, this is an important milestone going into the Third phase of the project: setting the stage for tantalite production. Tantalite

**Table 1. The Uis tin project. Costs March 1997. (NAD/month)**

Wages	7 800
Drilling and blasting	3 898
Processing	7 514
Supervision & overhead	4 875
Vehicle	1 817
Ore transport	1 500
Marketing	2 000
TOTAL	29 404

**Notes:** Concentrate grade, 65 per cent. Tin price/t concentrate, 6 000 USD. Tantalite price/t concentrate, 288 000 USD. Trade charges (flat), 1 300 USD/t; Exchange rate 1 USD=4.4 NAD.

would ensure the future sustainability if the project as well as prove the viability of small scale mining of this kind.

Given the financial parameters in table 1 it is crucial to produce also tantalite in addition to the cassiterite as tin alone cannot make the project viable. The minimum income needed from the activities other than tin concentrate should be able to contribute a minimum of 12 000 Na-

mibian dollars/month. So far, several samples have been taken from various tantalite claims. The results have been quite positive. Of immediate interest is the former Imkor area at Nainais, about 20 km south of Uis. The Uis production will also be supplemented by tin concentrates sold by independent micro scale miners from the Goantagab area. The 3 898 Namibian dollar cost for drilling and blasting represents about 11 % of the total actual operating cost. The project provides drilling and blasting services to prospectors in the Uis area but this resource has not been fully utilized. It is thus envisaged that the drilling and blasting unit could be organised into a separate business entity.

### Conclusion

The achieved increase in rate of production, operating the pilot plant in two 8 hour shifts, has set the stage for the production of tantalite. The Uis small scale tin mining project has attracted attention because of its multi disciplinary approach where geological, engineering and organisational efforts are linked with training for private entrepreneurship. There are plans for constructing another concentrating plant in the Uis area under the Small Miners' Assistance Centre. This depends mainly on the final results from current sampling and would mainly be for processing of tantalite to supplement tin production.

The "garimpeiros" at Uis have been transformed into a relatively well organised mining unit. Though incomes are low, the lessons learned from the project can be duplicated elsewhere. ■

