

DRAFT FINAL REPORT
Consultancy for the Design of a Mining
Cadastre Development Strategy

RFP#MSD-TA/NDF-277-2

Prepared by GEUS 12 October 2002



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Technical Assistance to the Ministry of Energy and Minerals
United Republic of Tanzania
Mineral Sector Development
Technical Assistance Project
Component E: Mining Cadastre

Prepared by GEUS 12 October 2002

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**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

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October 12, 2002

**Executive Summary,
Introductory Notes, and Report List of Content**

Draft Final Report comprises of the following reports:

- **Executive Summary, Introductory Notes, and Report List of Content**

- **Report 1 Assessment of MEM’s Mandate and the current Licensing System**
 - **Report 1 Annex A: Checklist Form**
 - **Report 1 Annex B: Follow-up Form**
 - **Report 1 Annex C: Field Visits – Resume**
 - **Report 1 Annex D: Questionnaire Responses – Resume**
 - **Report 1 Annex E: Stakeholder Interviews – Resume**

- **Report 2.1 Assessment of the Legal and Regulatory Framework**
- **Report 2.2 Proposed Amendments of Mining Act, 1998 and Regulations, 1999**

- **Report 3 Inventory of Mineral Rights**
 - **Report 3 Annex A: CD – Mineral Rights Database**
 - **Report 3 Annex B: Data Entry Forms (I, II and III)**

- **Report 4 Mining Cadastre Information Management System (MCIMS)**

- **Report 5 Information System and Information Technology Architecture**

- **Report 6 Institutional Capacity and Training Plan**
 - **Report 6 Annex A: Training Courses**

- **Report 7.1 Three Alternative Mining Cadastre Development Strategies**
- **Report 7.2 Implementation of a Mining Cadastre Development Strategy (MCDS)**
- **Report 7.3 Tender Documents**

Foreword

This report concludes a period of intensive work during the period from May 15th through October 12th, 2002. It is a pleasure to present our recommendations based on many discussions and analyses, and we are convinced that the results presented here clearly points towards ways to fulfil the goals set out in the Mineral Policy.

The Danish representatives of the Consultant have been present in Dar es Salaam from May 15th to September 10th, and in the spirit of the NDF participation principle we have actively sought the co-operation and involvement of the staff of the Ministry. We have received constructive support from members of the Core Team, Ms. L. Mnzava, Head of Licensing and Registry Sub-Section, Dr. P. D. Kafumu, Head of Promotion and Statistical Sub-Section, Mr. K.P. Lupindu, Assistant Project Manager, PMU, and Mr. A. Tesha, Technical Officer, PMU. Further, Mr. F. Makyao, Senior Geologist, LU, and Mr. J. Sarota, Senior Geologist, LU, have provided valuable support and information. We wish hereby to express our sincere thanks for their collaboration to the project.

Special thanks are due to Mr. H.H. Mruma, Project Manager, PMU, for fruitful discussions, the organising the project and for providing office facilities and logistic support to the project. .

On behalf of the Consultant – GEUS, KAMPSAX and SEAMIC,

Per Kalvig,
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Draft Final Report – Executive Summary

Task 1. Assessment of MEM's Mandate and the Current Licensing System

Institutions

1. The Licensing and Registry Sub-Section of the MEM, is in charge of controlling applications, preparing draft Licenses, registering and archiving Licenses granted. Several authorities and offices in MEM are involved in the process: Minister, Commissioner, MAC, Licensing Unit and Zonal Mines Offices. Other external institutional and non-institutional offices were visited in order to check how common information is shared / dispatched and to learn about the demands of the involved parties.
2. It appears that ZMO/RMOs (i) receive a very high amount of applications with a relatively low percentage of Licenses granted; (ii) manage a very high number of PML; (iii) face many rush areas with illegal mining activity; (iv) complain of non complete communication of Licenses granted from Licensing Unit office; (v) experience many kind of disputes between licensees, farmers, villagers, illegal miners claiming rights and compensations, or Districts claiming fees.
3. The institutional offices in other Ministries, mainly Lands and Natural Resources are concerned by: (i) the weakness of the communication with MEM; (ii) the need of permanent consultation on common issues; (iii) the fair compensation to all legal holders of rights; (iv) the necessity of consistency between Laws in different Ministries.
4. The mining sector is concerned by (i) the difficulty to get complete, up-to-date information on existing Licenses and vacant areas; (ii) the numerous conflicts between Licensees; (iii) the unclear activity and role of the Association of Miners; (iv) the illegal mining and the tolerance thereof of the administration; and (v) opaque procedures for granting a License.

Licensing Application

5. The Licensing application process was reviewed and described in detail in order to check bottlenecks, difficulties and initiate proposals for solutions. Practical improvements are suggested: (i) define a unique, accessible index to retrieve the status of each application; (ii) equip the Registry office with photocopier; (iii) minimise the number of transfers of files between different offices; (iv) give better information to the applicants; (v) ensure the security of official and confidential documents. Other improvements come from amendments of the Act.
6. The data flow chart confirms that files are constantly moving between LU, different MEM offices and the applicant. The security of confidential documents or originals cannot be ensured during these transfers because of difficult working conditions.

Major Issues

7. Some copies of Licenses are non-existent in the Archives for undefined reasons. Improvements are necessary to ensure consistency between Applications / Licenses stored in Archives and entries in Application Registers and in the Computer files. Implementing a better numbering system and a complete verification plan can solve this.

8. The major problems with the existing computer system used for controlling overlaps are (i) data are not structured in a database; (ii) no adequate backup facility is available; (iii) difficulty to confirm if the License is granted, modified or cancelled; (iv) no unique co-ordinate system is applied; (v) procedure manual and verification routine are not fully in place.
9. The Archives of LU contain a copy of all Division A and B Licenses and booklets with the applications for PPL/PML. Applications for Division A/B Licenses are stored in the confidential file of the Ministry with another index. Zonal Mines Offices are not fully informed. Archives are too scarce and security of access to applications and Licenses cannot be ensured.
10. The duration of the process for granting a License is not regulated and depends not only on the complexity of the application, but also on the permanent contact between LU and applicant. A service-provider approach of MEM should be implemented to ensure that applications are processed in an acceptable time.

MEM's Mandate

11. The Assessment of the MEM's mandate is studied in the view of major issues: (i) reporting from Licensees; (ii) Inspections; (iii) conflicts; (iv) information to the applicant; (v) non active licenses; and (vi) illegal mining; (vii) overlapping rights; (viii) communication with regions.
12. ZMOs receive only a very small percentage of the Reports and consequently cannot act. The Environmental Assessment is not always provided, and not controlled by professionals. The consequence of the "polluter pays" statement of the Policy cannot be systematically applied.
13. Recent mine accidents demonstrate the necessity for a better control of security and environmental norms. It is possible to amend the Act to decentralise some penalty applications at the Zonal Mines Office and to train inspectors in the control functions to carry out and generally how to operate.
14. The Act does not provide the methodology necessary to calculate the amount of the compensation. Clear instructions should be provided to the Zonal and Resident Mines Office to clarify the processes. The definition of the "lawful occupier" is not fully in accordance with the newly promulgated Land Law. Another issue is the demand for taxation of licensees by the District where the mines are located, not defined in the Act.
15. The applicant cannot be easily informed on the progress of the application. The lack of a general index, the numerous steps of transfers of the application from one office to another, the absence of complete and up-to-date accessible legal information concerning existing rights reinforce the opacity. The solution is the implementation of a MCIMS with a change in the approach; changing from bureaucratic management mode to service to the customer mode is necessary.
16. The provisions of the Act cannot ensure that operation starts as soon as the Prospecting or Mining License is granted. Inversely, the obligation to ZMO / RMO to report on founded dormant Licenses during inspections is not followed by any legal action, including cancellation of the License.
17. Illegal mining is widespread in the country. Some attempts to tolerate illegal mining if they accept and apply some security standards are not justifiable because it contradicts the objective of the Mineral Policy of "rationalising the licensing system" and "upgrading artisanal mining into organised and modernised mining". The Law must be enforced.

18. The non-overlapping is not ensured because of weaknesses of the current computer system and inspections. It may soon create a very negative impact on potential investors if not addressed instantly and adequately. The rapid implementation of a modern Mining Cadastre system is a priority.
19. Demarcation of the boundaries of the Licenses must be done in accordance with the regulations in order to facilitate field surveys and dispute solving.
20. The difficult communication between Licensing Unit, Zonal and Resident Mines Offices was often pointed out with demand of equipment, telephone and Internet connection in order to improve co-ordination, control and information to the public. Improving communication with Zonal /Resident Mines Offices requires not only modern equipment, but also introduction of manuals describing the procedures to be followed, directions and training courses in general administration.

Constraints

21. Several obstacles for the efficient work of Zonal and Resident Mines Offices are identified and evaluated: (i) the difficult application of some legal and regulatory constraints, identified in the Report: "Assessment of the Legal and Regulatory framework"; (ii) the non-existence of instant, complete information on existing applications and licenses; (iii) the lack of resources for transport, inspection; (iv) poor infrastructure, no safe storage rooms, facilities, no appropriate archives; (v) insufficient skill to improve and limited human resources.

Recommendations

22. Improving security, transparency and efficiency necessitates the training of employees, the purchase of minimum necessary equipment to Zonal and Resident Mines Offices, the installation of modern and adequate archives, the enhancement of the registration operations.
23. The Mining Cadastre can solve problems in providing a legal database of the prospecting and mining areas in use and make the status of these accessible to the Licensing Unit and all national offices, and it can ensure that the existing personal, perhaps with a minimum of additional recruitment, can undertake the work without being overloaded. But a MCIMS cannot operate at all without changing the approach of the administration, so that it conforms with the stated Policy: providing service and information to the applicants and licensees, limiting bureaucratic constraints to the minimum required by an amended Act, ensuring transparency, access for the public, but also security and confidentiality.

Task 2.1 Assessment of the legal and regulatory framework for the Mining Sector

General

24. In general, the Mining Act, 1998 and attached Regulations, 1999 are in accordance with the Mineral Policy, 1997. However, the practical experience during several years has shown some limitations and difficulties of application that may result in consequences opposing the objectives stated in the Policy when applying the Act and Regulations.

25. The Legal and Regulatory framework was scrutinised according to a list of topics representing an inventory of major issues: (i) the application processes with the shortcomings and bottlenecks resulting in negative consequences; (ii) the applicant for aspects concerning foreign investor, eligibility and conflicts of interest; (iii) the different types of licenses and specificities; (iv) the definition of different type of minerals and justifications; (v) the conditionality for granting a Licenses; (vi) the reporting obligations; (vii) the different rights and limitations; (viii) the exclusivity and problems of overlapping rights; (ix) different constraints and obligations related to the obligation of activity, cancellation, change of area, safety and insurance; (x) the demarcation and the co-ordinate system; (xi) the institutional arrangements; (xii) the relations with other stakeholders.

Topics

26. It appears that the “first come, first served” principle is not properly applied, and that the Minister has a discriminatory role in some cases. The duration for the processing of an application is not regulated except for some rare exceptions. The responsibility of the Licensing Unit and of the Registrar, as well as the administration, is not considered in a customer-oriented approach. Finally, the Bidding process for granting Licenses in a vacant area defined by the Minister for this purpose is not following international standards.
27. The limitation of foreign applicants for Mining Licenses is very easily overcome by the application for a SML. Then the definition of the eligibility of the applicant does not take into consideration conflicts of interest.
28. The types of Licenses defined in Divisions A, B, D of the Act creates a complex matrix to take into consideration for all cases. Moreover the use of specificities for Gemstones is questionable.
29. Minerals are classified in categories according to lists where several exceptions make the application problematic, like gold, but also with other minerals included or not in the Act like Petroleum, Radioactive Minerals.
30. Type of License and type of Mineral define conditions of duration of a License, duration of Renewals, maximum area, and obligation of relinquishment. The complex matrix is not entirely defined in the Act and Regulations and many specific conditions make the LU management very complex.
31. The reporting obligations are weak, incomplete, with discriminatory power to the Minister to exempt on the obligations. EIA, or similar, simplified environmental requirements are not defined for many types of Licenses, with possible exemption in other cases.
32. Rights of transfer licenses are allowed, but applications shall be submitted in advance.
33. Compensation rules are not fully detailed and may contradict articles of the new Land Law. Finally, rights of lawful occupiers should be managed in a simpler way without involving the Minister.
34. Overlaps and exclusivity rules between existing rights and a new application must take into consideration all possible cases of License crossed with type of application. It provides for a very complex matrix where not all cases are defined in the Law and Regulations.
35. The obligation of activity is not regulated as an incentive for the holder to start activity. The process of surrendering part of the whole area covered by a License is not easy to implement and needs useless authorisations. Cancelling a License is a very heavy and

- centralised process that has proved inefficient. Finally, safety rules are not similar for all Licensees.
36. Demarcation is possible without doubt if the same co-ordinate system is used. However, the regulation does not define the projection to use.
 37. The role and responsibility of the Minister shows that he is involved in decisions at the operational level, that he has a discriminatory power eliminating many of the requirements of the Act, than he cannot act as a promoter. A better balance of responsibilities between Commissioner and Minister is recommended. Finally the role and even the existence of the Mining Advisory Committee should be considered. Resident Mines Offices are not defined in the Act.
 38. The new Land Act, enacted after the Mining Act, uses new concepts of land right and land use holders that may contradict some definitions of lawful occupier and vacant land defined in the Mining Act. This should be corrected in co-operation with the Ministry of Lands. There is no provision in the Act and Regulations concerning the exchange of information with other administrative stakeholders.

Conclusions

39. The detailed analysis shows that some data are missing or incomplete and that amendment of the Mining Act is needed. Some articles are incomplete, sometimes unclear or contradictory – like the application of the principle of “first come, first served”. Finally, some articles related to the discriminatory role of the Authorities, special conditions for some licenses - gemstones for example -, specific restrictions or limitations – pre-conditions, minimum expenditures - should be limited or suppressed when not necessary to improve transparency and efficiency.
40. Some sections of the Act are not in line with the statements of the national Policy – harmonising all statutes, small- and large-scale operations, simple and transparent procedures, harmonising with other land statutes, grouping minerals for facilitating targeting of incentives, skill development or administration. These sections should be clearly amended.
41. The proposed amendments are divided into two types: (i) the revision of certain sections in order to clarify, unify and simplify the Law; (ii) the complements and adjustments in some sections in order to complete missing or correct inconsistent information.
42. Some aspects of the Act represent an old concept of mining acts with respect to the prescribed discriminatory procedures. The complex matrix structure of the Mining Act, 1998, does not reflect the concepts in the international mining law reforms, aiming at simplifying the legal framework, transparency, applying non-discriminatory principles, and as a consequence increasing efficiency in processing applications.
43. The strategy proposed, Strategy B: Mining Act Simplification, induces a reformulation of several sections, and in order to achieve the objectives, amendments consider the following: (i) reducing the number of titles; (ii) rights granted according to objective criteria; (iii) exclusivity of the mineral rights; (iv) adjustment of the Regulations accordingly.

Task 2.2 Draft Proposals for legal and regulatory amendments

44. The Strategy Meeting held on 18th July 2002 approved the selection of Strategy “B”, named “Simplification of the Act” based on the following principles: (i) Simplification and reducing the number of type of rights; (ii) Objective criteria (non discriminatory decisions); (iii) Exclusivity of all mineral rights; (iv) Adjustments of the regulation according to the amended act.
45. This selection induced that the amendments proposed relate to some major issues: (i) reduce the number of licenses to a minimum; (ii) re-define the role and responsibility of all decision-makers (Minister, Commissioner, Licensing Unit, Zonal Offices, Mining Advisory Committee); confirm the role of the State as defined in the National Mining Policy; (iii) standardise the process of application for License, renewals, cancelling; standardise the rights and obligations; (iv) ensure the compatibility of the definitions in the Act and with other stakeholders; (v) improve the efficiency of the administration by clear, unambiguous and comprehensive rules; (vi) clearly define large-scale and small-scale operations, rights and charge in order to promote prospecting and mining activity by locals; (vii) complete the Act with missing information, clarify some uncertainties, add necessary requirements.
46. General changes include: (i) reducing the type of minerals in “building material” and “minerals”; (ii) reducing the type of License by “prospecting license, mining license and small-scale (or primary) license; (iii) replacing “Minister”, “Commissioner” or “licensing Authority” by simply “Licensing authority” with an extended and clear definition; (iv) adding in Part II general principles of application, applicants, granting, cancelling License and completing the definitions; (iv) ensuring co-ordination with other stakeholders, especially the Ministry of natural Resource and the Ministry of Lands, to clarify overlapping rights issues and compensation rules; (v) clarify reporting requirements.
47. More specifically, the structure of the Act is still the same: 11 Parts, 5 Schedule, Part IV divided into 4 divisions with a revised title: (A) Prospecting License; (B) Mining License; (C) Supplementary provisions affecting Mineral Rights under Division A and B; (D) Primary Licenses.
48. The reduction of type of License to building materials and Minerals aims at simplifying and standardise the processes, clarifying interaction issues, avoiding inconsistencies and contradictions in the current Act (gold mines). It is proposed that there is no Prospecting License granted for Building Material or for any search activity without operation (equivalent to a primary prospecting license without demarcation).
49. Conditions of granting Licenses, rights and obligations are the same for each type of License with a minimum of exceptions, and limited requirements for small-scale miners. The control of the financial capacity, the deposits of minerals, the profitability of a mining activity by the State is replaced by agreed contractual requirements that the holder of license must fulfil. The granting by Tender process is revised to fit with international standards.
50. The “Licensing Authority” is defined clearly initially, and the tasks of the Minister, Commissioner, Zonal Offices clarified. It is proposed that the Mining Advisory Committee is disbanded, but that Evaluation Committees are created to evaluate proposals of Tenders, or large-scale applications. The Zonal and Resident mines Offices are defined and their involvement in the approval processes consolidated in order to better coordinate.

51. Principles are clarified and completed. Definitions of section 4 are completed when appropriate and basic principles applicable to all the Licenses grouped in Part II, in order to ensure a maximum of standardisation and simplification in the management of the applications and Licenses by the Licensing Authority.
52. A simplified application process of granting unique Primary Licence, including right of prospecting or mining, automatic renewal when paying fees supports the support of artisanal and small-scale miners. Inversely, cancelling licenses is not justified by the ineligibility of the applicant only, but by freezing activity or non-payment of fees, with clear rules.
53. An improved involvement of other stakeholders is ensured by the compatibility of the definitions on land rights and lawful occupiers, compensation rules, report dispatching, maps and co-ordinates common regulation.
54. Reporting processes and requirements are the same for all applicants and holders of Mineral Rights, with simplified requirements for small-scale operations. Environmental issues are especially more detailed and consistent. Other report requirements are also standardised in order to simplify the tasks of the administration and make them controllable. The result should be a better management of the Mining sector and an increased efficiency of the administration.

Task 3.1 Assessment of the Existing Mineral Rights Inventory

55. The current system –‘database’ – for administration of mineral rights – is based on Microsoft Excel and MapInfo files, and stored on several PC’s,, none of which are linked. The system consists of about 160 data files.
56. The data entry procedures are inadequately described, and applications and granted licenses are not systematically entered. Moreover back-up procedures are undertaken randomly and no safe storage is available.
57. The ‘database’ does not contain all licenses/records, and key data are frequently not entered or contain errors.
58. The ‘database’ and set-up cannot guarantee that the granted licenses are not overlapping.
59. A clean database has to be established.
60. Implementation of a new database and Mineral Rights Inventory is urgently needed.

Task 3.2 Development of a new Mineral Rights Database

61. A new database for use as a Mineral Rights Inventory has been developed. The structure of the database was developed in close co-operation with the Client to ensure that the database is tailor-made to suit the Clients needs, and considering also the requirements for the later implementation of a new MCIMS is.
62. The database is programmed in MS Access, part of the MS Office Professional suite of programs and communicates easily with the all GIS programs, i.e. MapInfo. In addition the use of Access allows migration of data to other platforms in the future, i.e. SQL Server technology.

63. The database is constructed as a relational database, ensuring that modification and additions of the database structure are possible when the needs changes over time.
64. The documentation of the database is provided as a schematic presentation of the data relationships – the data structure, and as descriptions of database.
65. The user interface is by database forms on-screen, which automatically pops up when the program opens. “Enter License Data” opens the main data entry form. “Add new license holder” displays a form for entering all relevant data on the applicant and data related to transfer of license. The database provides sub-forms for entering detailed information (such as fees, addresses, co-ordinates etc.) drop down menus.
66. The sub-form “Co-ordinates” allows entering an unlimited number of co-ordinates. For new application the co-ordinate is set to “Applied for”, and later when the license is granted the status us changed to “Granted and Verified”, and further changes is then disabled.
67. Queried information can be printed through standard Access Report Generator. Moreover some search and reports menus are developed to support the most commonly used search and report criteria.
68. The database is provided to the Client as a CD, and is installed on the Project Compac Desk Top PC.
69. Three different types of Data Entry Forms are developed ensuring that all relevant information for each license is systematically recorded and systematically validated before being entered to the Mineral Rights Inventory; it also allows keeping track of any amendments made to each license.

Task 3.3 Plan of Verification

70. Due to the fact that both the confidential files and the Mineral Rights ‘database’ are characterised by data errors, missing records and missing key information, alternative sources have to be established for the development of a clean database/clean Mineral Rights Inventory (MRI).
71. To establish the clean MRI it is deemed unavoidable to notify – zone by zone - all license holders via the Gazette and the press requesting them to submit license documents and receipts of fees paid.
72. Based on the information submitted, co-ordinates and other relevant data must be updated and entered by special registration forms, for later assessment and registration in the new Mineral Rights Inventory.
73. All overlapping co-ordinates must be identified and corrected considering the types of licenses involved in the overlap, and if they have the same strength priorities must be made based on date and time of application.
74. It is recommended that for a pre-defined period during the establishment of the clean inventory no applications should be accepted and no applications should be granted. The appropriate legal measures for such a graze period should be ensured by MEM.

75. Subsequently the licensee shall submit a Surveyors certificate of beacon positions proving that the actual beacon position in the field is in accordance with the new license certificate.
76. It is assumed that up to about 4,000 license holders will comply with the notice, thus about five parallel offices is required, each staffed with not less than three professionals, two technicians and secretaries. Moreover each office should be equipped with e.g. PC, photocopier, printer, telephone and filing cabinets.
77. It is estimated that the duration for undertaking all phases of the Verification Plan for all zones is about 14 months. The first zonal area could be ready after about five months, and the additional zonal areas to follow successively.

Task 4.1 Technical Design Specifications for the development of a Mining Cadastre Information Management System

78. Three configurations of a MCIMS, based on necessary common technical design specifications are defined: Configuration A without direct access to the database by the ZMO, Configuration B with the minimum configuration to make this access possible in the existing conditions; Configuration C with a modern system ensuring future extensions.
79. The implementation plan should go with the development of the training plan, tender for MCIMS, amendments of the Law and Regulations, equipment and office supply.
80. The co-ordinates should be measured using the WGS-84 datum or Arc 1960. The Universal Transverse Mercator Projection (UTM), 36th zone South, should be used as projection, preferable using meters as units. Central Meridian 33.
81. The integration with other databases is not appropriate because inducing fully co-ordinated decisions. Modern developments use more co-ordination than integration, allowing links and independent developments. The MCIMS is one of the first high-tech developments in the land administration in Tanzania, and it is recommended to organise institutional co-ordination before developing common access keys.
82. The database maintenance cannot be ensured before the verification plan is implemented and migration to the new system cannot be done otherwise.
83. The pros and cons of each configuration are listed in order to propose the best adapted configuration to the needs and constraints in Tanzania, MEM, the LU and ZMOs. It was considered that Configuration B is the most suitable in Tanzania and Technical Specifications and Tenders are made accordingly.
84. It is recommended to select the B Configuration, which (i) ensure that future improvements are implemented; (ii) can be implemented in an acceptable time, minimising the risk of long-term work with two systems in parallel. The risks are: (i) necessity of implementing a long-term plan, including not only MCIMS technology but also institutional strengthening and amendments of the Law; and (ii) shortage of available budget.

Task 4.2 Authorities with overlapping interests and responsibilities related to MEM (Report 1, Annex E)

85. In order to identify potential stakeholder interest with regard to the development of the Mining Cadastre Information Management System, interviews have been held with (i) seven offices within MEM, (ii) eleven government institutions and (iii) eight private stakeholders.
86. The interviews held with MEM staff revealed a communication gap between the various sections which needs to be addressed, enabling Zonal Mines Offices (ZMO), Resident Mines Offices (RMO), and the Environmental Management Sub-Section to act in accordance with the intentions of these bodies. As stated elsewhere this constraint is caused mainly by the lack of adequate resources and instructions.
87. The National Environment Management Council (NEMC) conveyed the view that this office shall assess *all* granted licenses with respect to their potential environmental impact. However, it is the opinion of the Division of Environment, Vice Presidents Office, that MEM is responsible for informing NEMC about all mining projects requiring an EIA and further that all PML operations are in general exempted from environmental assessments. Clear definitions of the respective roles/authority of NEMC and MEM with regard to the various phases of mining projects must be worked out, and an appropriate system for communication should be organised.
88. Disputes between wildlife interests and mining interests are observed. An appropriate communication routine should be established to the Ministry of Natural Resources and Tourism, governing forestry and wildlife areas, ensuring that all applicants are aware of their obligations with regard to the application for a license to work within a reserved forest or wildlife area.
89. Ministry of Land Use and Settlements has experienced many disputes between mineral rights holders and villagers or other lawful occupiers. The boundaries between the various acts influencing such situations need clarification and the appropriate communication lines should be established.
90. The topographical map sheets are in general more than ten years old, some even more than forty years old. The maps are based on a UTM projection and a 1992 datum WGS. Ministry of Land Use and Settlements has the copyright for all 1:50,000 scale maps.
91. The Ministry of Regional Administration and Local Government conveyed the view that revenues from mining activities should benefit the local areas, and further finds that their organisation should be in charge of monitoring the environment. There is a strong need for clarification on these two issues.
92. The private organisations find that the administrative system in the Licensing Unit is inadequate and that processing of applications is delayed beyond any reasonable standard, and moreover claim to have experienced corruption, fraudulent activities and conflicts of interests.
93. The implementation of a proper MCIMS will eliminate complaints like those expressed by the private organisations. However, in addition hereto the importance of

tight communication lines/routines to the institutional stakeholders should be addressed.

Task 5 Information System and Information Technology Architecture

94. The MCIMS consists of hardware, standard software, application system, and network installation, based on the configuration selected in Report 4 "MCIMS". Most of the information in Report 4 is part of the Technical Specifications of the Tender Document, Report 7.3.
95. The MCO and the ZMOs should share the same up-to-date information on applications and licenses. The Information System and Information Technology Architecture are based on a network installation, which allows for communication between MCO and ZMOs, with databases providing registration access to MCO and information on the right location to ZMOs. Major issues as security, control of external access to the database or queries, possible future extensions are taken into consideration.
96. The hardware and standard software are listed in the Report. Suggestions are Microsoft products on 5 desktop computers with Windows 2000 and Windows Office XP. The server software is Microsoft Windows Server 2000 and ISA Server 2000 to handle the firewall and external communications (Proxy server).
97. The database environment is also Microsoft (Access or SQL), where Access is opted for, being the best choice at the moment and an SQL Server at a later stage. The database handles all entries and the data is only kept in the database.
98. The GIS should be a component of the database and MapInfo software is proposed, being the GIS responding best to the present needs and the database environment.

Task 6 Assessment of the Institutional Capacity

99. The current organisation of the Mineral Division encompasses two sections, both headed by an Assistant Commissioner: (1) The Mines Section, encompassing the Sub-Sections, (i) Inspector of Mines; (ii) Co-ordination and Monitoring; (iii) Explosives, (iv) Environmental Management, and (v) the Zonal Mines Offices (ZMO) and the Resident Mines Offices (RMO). (2) Mineral Development Section encompassing the sub-sections: (i) Promotion and Statistics; (ii) Legal and Fiscal Affairs, and (iii) the Licensing and Registry Sub-Section (LU).
100. All sub-sections are involved in and have responsibilities in relation to the administration of the Mining Act and the Regulations. The Licensing and Registry Sub-Section is responsible for mineral rights applications and the Mining Cadastre. Moreover the Zonal Mines Offices and the Resident Mines Offices are undertaking local LU duties.
101. The current organisation appears not to favour an effective administration of the Mining Cadastre functions. Moreover the LU is not staffed adequately with respect to numbers and qualifications.
102. It is recommended to establish a Mining Cadastre Office (MCO) under the Permanent Secretary, MEM, ensuring an independent and efficient organisation, encompassing the following offices: (1) Registry, (2) License application processing; (3) Mineral Rights

- administration; (4) Archive; (5) Information; (6) MRI and MCIMS; and ZMO/RMO Mining Cadastre administration.
103. The staff involved in Mining Cadastre applications and administrations are in general not adequately trained with regard to basic computer skills, databases and data validation, GIS applications, and basic administrative procedures for a Mining Cadastre Office.
104. Training programs for the following topics are given: Basic Computer Training; MS Access and MRI; MapInfo; Mining Cadastre Office procedures and routines; Working principles of the MCIMS, and Basic Management. The numbers and levels of the courses are estimated on the basis of the current staff, inclusive the ZMO/RMO staff.
105. Planning of the training courses should consider the timing of the implementation of the Verification Plan, ensuring that the key staffs to be involved in this phase are provided the necessary skills prior to the implementation of the project.
106. Study tours are recommended to supporting the task force writing the Mining Act B with the necessary background information and to facilitate valuable discussions with sister organisations about some of the new principles being the basis for the new mining legislation. In order to gain experience from both the "old" type of mining legislation and from the modern system, it is recommended to arrange two study tours: (a) Visit to Ghana and (2) visit to either Australia or Madagascar.

Task 7.1 Three Strategies for Implementing a Mining Cadastre

107. The long term goals for the mineral and mining industry in Tanzania are given by the Mineral Policy (1997), stating that, (i) the industry shall contribute in excess of ten percent of the GDP; and (ii) the development of the legal, regulatory, fiscal and institutional environment for investments should be kept in focus.
108. The key principles dominating the international mining act reforms are such as: open mining cadastre and title registry; mineral rights granted on objective criteria; first-come-first-served basis; exclusive title rights; security of the tenure; free transferability of mineral rights; simple financial maintenance requirements; and environmental protection adapted to the various phases of a project. Only some of these principles are considered in the Mining Act, 1998.
109. The findings from assessment of Task 1 – 6 form the basis for the strategies. It is observed that:
- The legal framework possesses some weaknesses, giving raise to ambiguous interpretations and individual practises.
 - The administrative set-up has some weaknesses and the resources and equipment allocated are inadequate.
 - The current Mineral Rights Inventory is not complete and contains errors; moreover some licenses are overlapping.
 - Training and capacity building is urgently needed.
110. The three strategies are all based on the following components, (1) Changes of the legal framework; (2) Reorganisation of administrative practice; (3) Introduction of an open MCIMS system; (4) Resource requirements; and (5) A capacity building and training program.

111. The legal framework is the hub of any mining cadastre strategy. Three options are discussed: Model A: Amendments of the current act – adding missing and incomplete information. Model B: Simplification of the current act – and introducing modern mining act principles. Model C: Formulation of a new mining act, considering the implementation of liberal free market principles (e.g. Peru; Madagascar).
112. All strategies are leading to the goals for the mineral sector set out in the Mineral Policy, but the changes of the legal framework determines the type of strategy and the additional components sets the speed.
113. It is anticipated that a complete implementation of the Strategy A, B and C will be respectively two years, three years and five years.
114. The Consultant recommends the Strategy Model B as the most appropriate. Strategy Model A carries the risk that it will be necessary to call for a second round of amendments within a few years time. Strategy Model C involves a very liberal mining act, which would be in near conflict with the general administrative approach in Tanzania.
115. In a Strategy Meeting held July 16th, 2002, the representatives from MEM were in favour of the Strategy Model B.

Task 7.2 Implementation Plan for the Recommended Strategy

116. The Implementation Plan describes implementation of Strategy Model B, as detailed in Report 7.1, encompassing six Strategy Components.
117. Strategy Component 1 - Writing Mining Act B and Regulations B. It is recommended to organise a task force composed by four MEM staff members, one external legal expert and one external consultant with expertise in international mining laws. The estimated duration of for this task is eleven months, inclusive the approval by the Parliament.
118. Strategy Component 2 - Changes of Institutional Framework and the Administrative Practise. It is recommended to re-organise the LU as the Tanzania Mining Cadastre Office (MCO), with the sole responsibilities to grant mineral licenses and to administer such rights. To ensure an independent status it is recommended to organise MCO directly under the Permanent Secretary, MEM.
119. New administrative principles for the MCIMS to be applied by the MCO for Mineral Right applications are detailed. The proposal details the respective functions and responsibilities of MCO and the decentralised functions to be undertaken by the ZMO/RMO. In general the Head of MCO is authorising all licenses by his signature; a Head of ZMO/RMO may authorise PPL and PML only and provided prior approval by the Head of MCO.
120. Strategy Component 3 - The MCIMS. It is recommended to implement the MCIMS, hardware, software, application system and network installation based on the Configuration B selected in Report 4, encompassing fifteen desktop PC with Windows 2000 and Windows Office XP. The server software is Microsoft Windows Server 2000 and ISA Server 2000. The database environment is MS Access or SQL. The GIS component should be MapInfo.
121. Strategy Component 4 - Implementation of the Mineral Right Inventory and the Verification Plan. The establishment of a new Mineral Rights Inventory is urgently needed. The existing inventory is not found adequate and so is also the confidential file archive. It is therefore recommended to establish a new Mineral Rights Inventory (MRI) based

- on a nine step implementation project. The duration of this Component is estimated to about fourteen month. The estimated human resource requirements for the individual sub-phases are detailed.
122. Strategy Component 5 – Human Resource Requirement for MCO. It estimated that the staff requirements are about eighteen people encompassing the head and assistant head. In addition the some estimates are made for the office area size requirements.
 123. Strategy Component 6 – Capacity Building and Training Programmes. The following topics are recommended for the Training Program: Basic Computer Training; Data-bases (Access and MRI); GIS (MapInfo); MCIMS; Mining Cadastre Office working principles and routines, and basic management courses. Planning of the training courses should consider the timing of the Verification Plan., ensuring that the staff involved in this project are all provided the necessary skills prior to the implementation of the Verification Plan.
 124. It is estimated that a minimum of fourteen months period is require for the implementation of the Mining Cadastre Strategy – without considering any delays. A breakdown table provides the details.
 125. The procurement comprises three groups: (1) MCIMS including hardware, software, development and related users' training; (2) Equipment, furniture, locally provided; and (3) Consultancy services for institutional strengthening, training, and study tour. It is recommended to prepare one Tender document for the whole MCIMS. The procurement process is a "Procurement of Goods" standard Tender. It is recommended to use local shopping for providing necessary equipment in domestic shops; this procurement process can be implemented in two years.
 126. It is recommended that a Service Contract be signed with an international company with a proven record in administration of mineral rights, MCIMS, and training.
 127. It is recommended that domestic training in IT software, systems or basic computer skills is organised by the Service Contractor and in co-operation with local provider
 128. The following detailed costs are estimated: MCIMS: c US 420,000 \$; Capacity building and training: US 180,000 \$; other goods: US 160,000 \$.
 129. A List of Prospective Suppliers from the Nordic countries is provided.
 - 130.

Task 7.3 Tender Documents

131. Complete Tender Documents in compliance with what is recognised by WB and used by a majority of donors, including African Development Bank, and IDA. NDF officially recognises this Tender document format as valid.
132. A comprehensive list, encompassing the goods and services described in the Report 3 through 7 are provided.

1. INTRODUCTORY NOTES

1.1 Deviations from TOR – by Default

According to the TOR, Task 3, “the Consultant shall undertake: (i) an inventory of all mineral rights, (ii) propose a plan to verify the status of all mineral rights issued to date, (i.e. validity, expiry, active and non-active) and (iii) update the existing mineral titles database”.

Since the fact finding mission (July 2001) the first part of the task was of concern to the Consultant, when it was observed that the mineral rights data contrary to expectation not were organised adequately. Consequently it would not be possible to guarantee that a complete inventory of all mineral rights was undertaken. To overcome this problem a model based on a pilot study was proposed and also included as an integral part of the Contract between the MEM and GEUS and moreover discussed as the best concept during the Inception Visit meetings.

However, on May 20th, 2002 the Client informed the Consultant that the pilot study concept was not acceptable and requested the service to comply strictly with the TOR. This request was accepted, and the parties agreed that the Client not later than June 21st, 2002 in a standard digitised format should provide all data for the Inventory.

The Client experienced however difficulties in providing the adequate data for the mineral rights Inventory – basically preventing the first part of Task 3 to be undertaken. A meeting was held July 19th, 2002 with the Client, in which the following agreements were made,

- The Consultant is not obliged to undertake an inventory of all mineral rights
- The Licensing Unit shall provide up to forty “*hard copies*” files encompassing all key data, to be used as sample data for testing a new database structure.
- The Consultant shall design and undertake the programming work of an Access database for Mineral Rights Inventory.
- The Consultant shall enter the sample records to the mineral rights database.

As a consequence of the data delivery problems experienced by the Client, a reformulation of Task 3 has been inevitable, and is reformulated as follows,

3.1 Assessment of the existing Mineral Rights Inventory

3.2 Development of a new Mineral Rights Database

3.3 Propose a plan to verify the status of all mineral rights issued to date.

1.2 Project Timing

The Contract for Consultants’ Services between the Ministry of Energy and Minerals and the Geological Survey of Denmark and Greenland was signed in Dar es Salaam on April 8th, 2002.

The Inception Visit took place during the period April 17th-24th, 2002, and the Draft Inception Report was submitted on April 30th, 2002. Final Inception Report was submitted on May 25th, 2002.

The Project was initiated on May 15th, 2002. The Team Leader was based in Dar es Salaam in the period from May 15th through September 10th, 2002.

The Draft Interim Report was submitted August 2nd 2002, and on a meeting with the Client held September 6th, 2002, some amendments were agreed to. The amended version was submitted on September 6th, 2002.

First deadline for Draft Final Report was September 16th, 2002. Due to the project delay the Project Management Unit accepted a new deadline October 15th, 2002.

Presentation of the Project results is scheduled to take place on October 23rd, 2002 in Dar es Salaam.

1.3 Organisation of the Project

The Core Team representing the Client comprises the following senior officers from MEM,

- Ms. L. Mnzava, Project Co-ordinator, Acting Head Licensing and Mineral Rights Registry Sub-Section
- Dr. P. D. Kafumu, Assisting Co-ordinator, Acting Head, Mineral Promotion and Statistics Sub-Section
- Mr. K. P. Lupindu, Deputy Project Manager, MSD-TA/NDF Project
- Mr. A. L. Tesha, Project Technical Officer, MSD-TA/NDF Project

The following consultants, representing the Consultant have been contributing to the project,

- Mr. L. Thorning, GEUS, Home Base Manager
- Dr. P. Kalvig, GEUS, Team Leader
- Dr. H. Stendal, GEUS
- Dr. A. Hernandez, Kampsax
- Mr. L. Bagge Nielsen, Kampsax
- Mr. M. Gebremichael, SEAMIC
- Mr. J. Nyakaana, SEAMIC
- Mr. A. Ishigize, SEAMIC

Co-operation and Capacity Building

With the aim to optimise the outcome of the project and in complete agreement with the participation principle of WB, the Core Team has been involved in most of the phases throughout the project. Counterpart meetings have been held once or twice a week; these meetings also enabled the Client to monitor project progress in detail. The Consultant has concurrently provided to the Core Team all reports, résumés and notes related to the various tasks up for discussions. In return the Core Team has been the daily sparring partner

providing the Consultant with input for a more accurate understanding of the practice and conditions in the current administration, ideas for improvements and corrections of factual errors. All in all this has improved project outcome and has made it possible for the Consultant to ensure that the result is tuned to the Clients demands and needs.

The Core Team has acted as liaison to relevant authorities with overlapping interest and responsibilities related to those of MEM. The Core Team also organised and accompanied the Consultant in meetings with stakeholders in Dar es Salaam and the visits to Dodoma, Arusha and Mwanza regions. Altogether twenty-four interviews have been undertaken.

Project Seminar.

A seminar was organised in Copenhagen (June 2nd – 7th, 2002) aimed for (i) team-building for the Core Team and the project consultants; (ii) to provide a discussion arena for both the Core Team and the Consultant in order to review the task that lie ahead in the 5 months period of the project.; and (iii) to enable the Core Team to tour and observe the cadastre systems (mining and land) in Denmark.

Field Visit

A one week field visit was organised by the Core Team to the Arusha and Mwanza regions, enabling the Consultant to gather hands-on experience with regard to the administrative practice of the Mining Act and Regulations, as viewed by Zonal Mines Offices, Resident Mines Offices and license holders.

Strategy Meeting

In order to discuss with the Client – at an early stage of the Project - the three alternative strategies for implementing a Mining Cadastre (Task 7.1)), a Strategy Meeting was held on July 16th, 2002. The discussions in the meeting provided useful in-put for the further development of the strategies and the participants at the meeting supported the choice of the recommended strategy, enabling the Consultant to work out the relevant amendments to the legal mining framework (Task 2) and to develop a Mining Cadastre Implementation Plan (Task 7.2).

Presentation of the Project (Draft Final Report)

A presentation of the Project is scheduled to take place in a meeting to be held in Dar es Salaam on October 23rd, 2002, providing the Client with an overview of the findings, and thus hopefully facilitating the Client's assessment of the Draft Final Report.

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**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

**DRAFT FINAL REPORT
October 12, 2002**

**Assessment
of
MEM's mandate and the current licensing system**

Report 1

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List of abbreviations

AOBG	All Minerals other than Building Materials or Gemstones
BM	Building Materials (as defined in the Act)
EIA	Environmental Impact Assessment
EMP	Environment Management Plan
GEM	Gemstones (as defined in the Act)
GML	Gemstones Mining License
LA	Licensing Authority (see definitions)
LU	Licensing Unit (see definitions)
MAC	Mining Advisory Committee
MCIMS	Mining Cadastre Information Management System
MEM	Ministry of Energy and Minerals
ML	Mining License
PL	Prospecting License (in the Report, including Reconnaissance Prospecting License)
PLR	Reconnaissance Prospecting License
PML	Primary Mining License
PPL	Primary Prospecting License
RL	Retention License
RMO	Resident Mines Office
SML	Special Mining License
ZMO	Zonal Mines Office

Definitions

In the report, the following terms have the following meaning:

Act:	Mining Act, 1998 (no 5 of 1998)
Application Registers:	set of books / registers used for justification of the legal date and time of reception of an application
Archives:	Archives of the LU where are stored the copies of the Licenses
Artisanal:	Relates to small-scale legal activity of local miners, usually individual licensees operating with little financial capacity. Not defined in the Act.

Checklist form:	Form used in the current Licensing process to check if all controls are done - see Annex 1
Computer Files:	File(s) (database) where is stored basic information concerning Licenses and applications, currently used for graphic overlapping controls.
Confidential files:	Archives of the MEM where are stored the original documentation of the application.
Division A, B Licenses:	ML, SML, GML, PL, and RL. Defined in Divisions A, B, C of Part IV of the Act
Division D Licenses:	PML, PPL. Defined in Division D of Part IV of the Act
Entry Registers:	set of books or registers where entry / exit from /to different MEM offices of applications and documents are registered
Follow-up form:	Form used in the current Licensing process to follow all steps of the procedures – see Annex 2
Large-scale Licenses:	This term is not used for Division A and B licenses because the scale of the activity is not in relation with the type of License. Not defined in the Act.
License Register:	Manual and computerised files where the rights are stored in accordance with the Act Part IX
Licensing Authority:	Officer or office that, according with the Act, is the decision-maker for granting the License.
Licensing Unit:	“Licensing and Mineral Rights Registry Unit”
Miner:	Person or corporate body active in prospecting / mining activity. If this term represents holders of Licenses, the term Licensee will be used.
Offer:	Proposal of License or part of License (co-ordinates) sent by LU to the applicant, which may or may not be identical with what has been applied.
Registrar:	Officer who, according to the Act and Regulations, is heading the office where is the Application Register.
Registry:	Registry Office in the Licensing Unit. Headed by the Registrar.
Regulations:	Regulations, 1999 of the Mining Act, 1998
Small-scale Licenses:	This term is not used for Division D Licenses because the scale of the activity is not in relation with the type of License. Not defined in the Act.

Executive Summary

Institutions

1. The Licensing and Registry Sub-Section of the MEM, is in charge of controlling applications, preparing draft Licenses, registering and archiving Licenses granted. Several authorities and offices in MEM are involved in the process: Minister, Commissioner, MAC, Licensing Unit and Zonal Mines Offices. Other external institutional and non-institutional offices were visited in order to check how common information is shared / dispatched and to learn about the demands of the involved parties.
2. It appears that ZMO/RMOs (i) receive a very high amount of applications with a relatively low percentage of Licenses granted; (ii) manage a very high number of PML; (iii) face many rush areas will illegal mining activity; (iv) complain of non complete communication of Licenses granted from Licensing Unit office; (v) experience many kind of disputes between licensees, farmers, villagers, illegal miners claiming rights and compensations, or Districts claiming fees.
3. The institutional offices in other Ministries, mainly Lands and Natural Resources are concerned by: (i) the weakness of the communication with MEM; (ii) the need of permanent consultation on common issues; (iii) the fair compensation to all legal holder of rights; (iv) the necessity of consistency between Laws in different Ministries.
4. The mining sector is concerned by (i) the difficulty to get complete, up-to-date information on existing Licenses and vacant areas; (ii) the numerous conflicts between Licensees; (iii) the unclear activity and role of Association of Miners; (iv) the illegal mining and the tolerance of the administration; and (v) opaque procedures for granting a License.

Licensing application

5. The Licensing application process was reviewed and described in detail in order to check bottlenecks, difficulties and initiate proposals of solutions. Practical improvements are suggested: (i) define a unique accessible index to retrieve the status of each application; (ii) equip the Registry office with photocopier; (iii) minimise the number of transfers of files between different offices; (iv) better inform the applicant; (v) ensure the security of official and confidential documents. Other improvements come from amendments of the Act.
6. The dataflow chart confirms that files are permanently moving between LU, different MEM offices and the applicant. The security of confidential documents or originals cannot be ensured during these transfers because of difficult working conditions.

Major issues

7. Some copies of Licenses are inexistent in the Archives for undefined reasons. Improvements are necessary to ensure consistency between Applications / Licenses stored in Archives and entries in Application Registers and in the Computer files. Implementing a better numbering system and a complete verification plan can solve this.
8. The major problems of the existing computer system used for controlling overlaps are (i) data not structured in a database; (ii) no backup adequate facility; (iii) difficulty to confirm if the License is granted, modified or cancelled; (iv) no unique co-ordinate system applied; (v) procedure manual and verification routine are not fully in place.
9. The Archives of LU contain a copy of all Division A/B Licenses and booklets by 50 PML/PPL, with the applications for PPL/PML. Applications for Division A/B Licenses are

stored in the confidential file of the Ministry with another index. Zonal Mines Offices are not fully informed. Archives are too scarce and security odd access to applications and Licenses cannot be ensured.

10. The duration of the process for granting a License is not regulated and depends not only of the complexity of the application, but on the permanent contact between LU and applicant. A service-provider approach of MEM should be implemented to ensure that applications are processed in an acceptable time.

MEM's mandate

11. The Assessment of the MEM's mandate is studied in the view of major issues: (i) reporting from Licensees; (ii) Inspections; (iii) conflicts; (iv) information to the applicant; (v) non active licenses; and (vi) illegal mining; (vii) overlapping rights; (viii) communication with regions.
12. ZMOs receive only a very small percentage of the Reports and cannot act consequently. The Environmental Assessment is not always provided, controlled by professionals. The consequence of the "polluter pays" statement of the Policy cannot be systematically applied.
13. Recent mine accidents demonstrate the necessity of a better control of security and environmental norms. It is possible to amend the Act to decentralise some penalty applications at the Zonal Mines Office and train inspectors on the controls to do and how to operate.
14. The Act does not provide the methodology to calculate of the amount of the compensation. Clear instructions should be provided to the Zonal and Resident Mines Office Mines offices to clarify the processes. The definition of the "lawful occupier" is not fully in accordance with the newly promulgated Land Law. Another issue is the demand for taxation of licensees by the District where the mines are located, not defined in the Act.
15. The applicant cannot be easily informed on the progress on the application. The opacity is reinforced by the lack of general index, the numerous steps of transfers of the application from an office to another, the absence of complete and up-to-date accessible legal information concerning existing rights. The solution is the implementation of a MCIMS with a change in the approach, changing from bureaucratic management to service to the customer.
16. The provisions of the Act cannot ensure that operation starts as soon as the Prospecting or Mining License is granted. Inversely, the obligation to ZMO / RMO to report on founded dormant Licenses during inspections is not followed by any legal action, including cancelling the License.
17. Illegal mining is widespread in the country. Some attempts to tolerate illegal mining if they accept and apply some security standards are not justifiable because it is contradicting the objective of the Mineral Policy of "rationalising the licensing system" and "upgrading artisanal mining into organised and modernised mining". The Law must be enforced.
18. The non-overlapping is not ensured because of weaknesses of the current computer system and inspections. It may create soon a very negative impact on potential investors if not addressed instantly and adequately. The rapid implementation of a modern Mining Cadastre system is a priority.
19. Demarcation of the boundaries of the Licenses must be done in accordance with the regulations in order to facilitate field surveys and dispute solving.

20. The difficult communication between Licensing Unit, Zonal and Resident Mines Offices was often pointed out with demand of equipment, telephone and Internet connection in order to improve co-ordination, controls and information to the public. Improving communication with Zonal /Resident Mines Offices requires not only modern equipment, but also introduction of manuals describing the procedures to be followed, directions and general administrative training courses.

Constraints

21. Several constraints with respect to the efficient work of Zonal and Resident Mines Offices are identified and evaluated: (i) the difficult application of some legal and regulatory constraints, identified in the Report: "Assessment of the Legal and Regulatory framework"; (ii) the inexistence of instant complete information on existing applications and licenses; (iii) lacking resources for transport, inspection; (iv) poor infrastructure, no safe storage rooms, facilities, no appropriate archives; (v) Skill to improve and limited human resources.

Recommendations

22. Improving security, transparency and efficiency necessitates training of employees, purchasing minimum necessary equipment to Zonal and Resident Mines Offices, installing modern and adequate archives, enhance the registration operations.

23. The Mining Cadastre can solve problems in providing a legal database of the prospecting and mining areas and status accessible to all the Licensing Unit and national offices, ensuring that the existing personal can undertake the work without overload or with a minimum of additional recruitment. But a MCIMS cannot operate in without changing the approach of the administration, in conformity with the Policy: providing service and information to the applicants and licensees, limiting bureaucratic constraints to the minimum required by an amended Act, ensuring transparency, access to the public, but also security and confidentiality.

1. Introduction

This Report presents the conclusions made by the Consultants related to Task 1 of the Terms of Reference, "Assessment of MEM's mandate and the current Licensing System".

In accordance with the TORs, the task is subdivided into two subtasks:

- "Assessment of MEM's mandate: define the MEM's mandate according to the Act and Regulations, compare with the processes used for Mineral Licensing, map flow of information after interviews key personal, Zonal Mines Offices and other organisation".
- "Assessment of the current licensing system: analyse the procedures, data flow, and existing licensing system, provide input and inspiration to the definition of a new cadastre system".

Consequently the report is structured in the following Chapters:

- Institutions involved in the Licensing operations or co-ordinating activities with MEM;
- Assessment of the current licensing system;
- Assessment of the MEM's mandate.
- Constraints
- Possible improvements and Recommendations.

The Report relates to the administrative usage of the Licensing system, with a special focus on aspects related to the Mining Cadastre. The legal aspects in relation hereto are dealt with in Report 2.1, and recommended amendments and simplification of the Act is dealt with in Report 2.2, "Assessment of the legal and regulatory framework".

This Report deals only with matters related strictly to the Mining Cadastre, in accordance with the TORs, Thus i.e. Brokers and Dealers Licensing processes are not studied despite they are part of the responsibilities allocated to the LU.

The interviews of MEM officers and Mining cadastre stakeholders are summarised in the Report "Stakeholders meetings résumé" in Annex E.

The outcomes of the visits to Zonal and Resident Mines Offices are presented in the Report "Field visits to Arusha and Mwanza Zonal Mining Areas", Annex C, completed by responses to a questionnaire sent to all ZMO/RMO, presented in the Report "Questionnaire Responses" in Annex D. The conclusions are summarised in chapter 4 and 5.

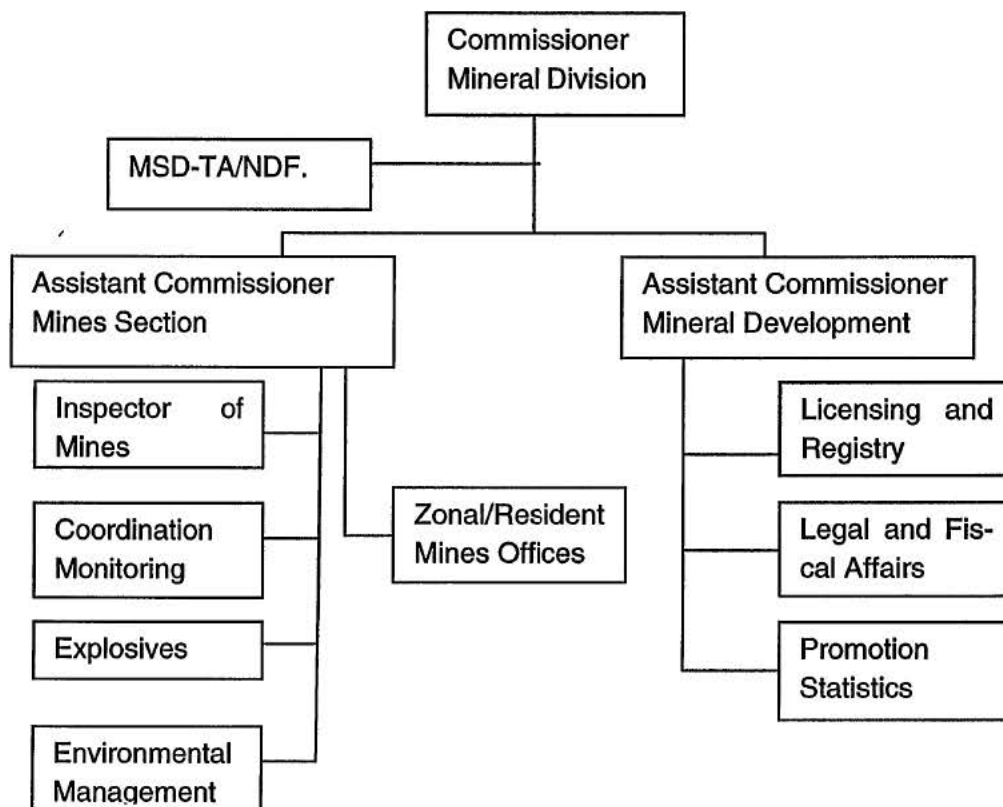
Particularly the study has focused on those tasks of the Licensing Unit, which will be involved in operating a future MCIMS.

2. The Institutions and Bodies

2.1 The organisational set-up in MEM and staffing

The Diagram 1 shows the structure of the Minerals Division of the Ministry of Energy and Minerals, including the only part of the Ministry accommodating the Licensing system.

Diagram 1. *Structure of the Minerals Division of MEM*



The Zonal Mines Offices are located in the 8 regions. Some ZMOs have opened Resident Mines Offices located closer to a dense mining activity area. The Table 1 shows the regional distribution of ZMO and RMO.

The Table 1 also shows the Zonal / Resident Mines Offices visited. In order to complete the information a questionnaire was sent to all offices with the aim to gather more information regarding the human resources and equipment available, and thus to evaluate their workload and to identify the major constraints. The Table 1 indicates the offices responding to the questionnaires.

Table Fejl! Ukendt argument for parameter.. Zonal and Resident Mines Offices

Zonal Mines Office	Visited	Quest. Response	Resident Mines Office	Visited	Quest. Response
<i>Central Western</i>			<i>Kahama Tabora</i>		yes yes
<i>Western – Mpanda</i>		yes			
<i>Lake Victoria – Mwanza</i>	yes	yes	<i>Kayanga Tarime</i>		yes
			<i>Geita</i>	yes	
			<i>Musome</i>		yes
<i>Northern – Arusha</i>	yes	yes			
<i>Southern – Mtwara</i>			<i>Songea Tunduru</i>		yes yes
<i>South Western – Mbeya</i>		yes	<i>Chunya</i>		yes
<i>Eastern – Dar es Salaam</i>	yes	yes	<i>Morogoro Handeni</i>		yes
			<i>Tanga</i>		
<i>Central - Singida</i>			<i>Dodoma</i>		yes

The equipment and human resources available are detailed in the Report: “Questionnaire responses from Zonal Mines Offices and Resident Mines Offices” (Appendix D).

On the basis of the questionnaire the following conclusions are made: (i) Applications: ZMOs receive a large number of PPL and PML applications, but are informed only about a minor part of the licenses granted (ii) License: The ratio between the numbers of exploration licenses and exploitation licenses is very unusual, indicating that some areas are not comprehensively explored in advance of initiating mining operations. (iii) The workload on ZMO/RMO appears to be very high due to the many PML's. (vi) Illegal mining: It appears that rush areas are frequently observed and widespread (v) Communication: The communication between LU and the ZMO/RMO is inadequate to ensure that the regional offices can undertake the duties they are responsible for. (vi) Disputes: ZMO/RMO experience frequent disputes between mineral right holders and farmers / villagers claiming surface rights, or Districts claiming fees, between two mineral right holders on the same area, with illegal miners in reserves or vacant land.

ZMO/RMO's reports that their work is hampered due to inadequacy of (i) the staff allocated for their tasks; (ii) the equipment and transportation facility; (iii) the communication facilities.

2.2 Other Governmental Stakeholders

The Table 2 shows the most important of the governmental authorities with overlapping interests and responsibilities related to Mining Cadastre activities, which were interviewed

with respect to the development of possible communication lines. The outcome of these interviews is detailed in the Report “Stakeholders meetings resume” (Appendix E).

Table Fejll Ukendt argument for parameter.. *Governmental stakeholders interviewed by the Consultant*

<i>Ministry or National Office</i>	<i>Office visited</i>
Ministry of Energy and Minerals	Environmental Management Sub-Section Legal and Fiscal Subsection
Ministry of Natural Resources and Tourism	Forestry and Beekeeping Division Wildlife Division
Ministry of Land use and Settlements	Land Use and Planning, Commission of Land Use Registry of Dar Es Salaam zone Mapping and Survey Division
Vice-President Office	NEMC ⁽¹⁾ Directorate of Environment Impact Assessment Division of Environment (EIA)
Ministry of Regional Administration and Local Governments	Directorate of Local Governments

(1) NEMC: National Environment Management Council

The offices visited are located in four different ministries and two Divisions of the Vice-President Office.

The major conclusions of the interviews held with government bodies are as follows: (i) the communication between different stakeholders and the Ministry of Energy and Minerals is inadequate. (ii) There is a need for permanent consultation on common issues through Committees. (iii) The issue related to compensation to the legal holder of rights needs to be addressed. (iv) The inconsistency between the legal frameworks in different ministries needs to be addresses.

2.3 Non-Institutional Stakeholders

The group of non-institutional Mining Cadastre stakeholders is identified. Several representatives of the private sector and of miners Associations were visited and interviewed. It is considered that the outcome of these interviews provides a representative overview of the concern expressed by the private and associated sector. The Non-Institutional Stakeholders are listed in the Table 3.

Table Fejll Ukendt argument for parameter.. *Non-Institutional stakeholders interviewed*

<i>Private sector / Organisations</i>	<i>Companies or organisations visited</i>
Private sector	Longido Gemstones
	Mabuki Diamond
	AFGEM Tanzanite
	Geita Gold
	Anglo Gold
	Resolute DAR
Organisations	Institute of Resource Assessment
	Chamber of Mines
	Miners Association Ramagasa
	Miners Association Nvarugusu

The Non-institutional stakeholders are divided into two categories: (i) the private sector of mining and exploration companies; (ii) other organisations including the Chamber of Mines, the Associations of Miners and Institutes.

The major conclusions related to the private sector are (i) The difficulty to get complete and up-to-date information on existing Licenses and to get information on vacant areas; (ii) The overlapping licenses causes disputes between the Licensees; (iii) The illegal mining activities that are tolerated by the authorities; and (iv) The procedures to grant a License is opaque and takes too long time (in general in excess of three months).

It is noted that there is a full commitment from all the stakeholders on several needs: (i) The necessity of enforcing the legal provisions of the Act, including: (ii) The importance of an efficient Mining Cadastre Information System accessible by all customers; (iii) An improved service by the administration to the customers, as well as technical assistance to small-scale miners, (iv) And transparency of the licensing processes.

The private sector suggested that the general evolution of the mining administration should involve: (i) amending the Law to simplify the types of License and give more flexibility to investors for renewing or extending Licenses; (ii) change the attitude of the administration to move towards a service provider activity.

3. The Current Licensing Process

This chapter describes the process applied by MEM for granting prospecting and mining licenses. The legal requirements defined in the Act and Regulation is described in Report 2.1 "Assessment of the Legal and Regulatory framework". The practical procedure followed by the administration is detailed below in order to identify difficulties, bottlenecks and to propose practical solutions to improve the efficiency of the administration.

Two different mineral right application process routes are identified:

- The process related to the granting of Division A and, B types of Licenses (PL, ML, GML, SML and renewals) and
- The process related to the granting of Division D Licenses (PPL, PML).

The design of Diagrams 2 and 3 is based on a diagram provided by the LU and completed by use of detailed information coming from interviews. The diagrams give an overview of the procedures followed by MEM to grant licenses governed by the Division A and B of the Act. The first part of the process – from receiving the application to sending an offer - is shown in Diagram 2, and Diagram 3 presents the process of granting the mineral right after the offer is accepted by the applicant. .

Diagram 4 presents an overview of the process of granting PML and PPL.

The three diagrams together give an overview of the process with the main principles in accordance with the Act and Regulation, but they do not enter into detail for the practical operations, controls, archiving, and registration.

In Chapter 3.2 the process is followed step by step to identify the difficulties and bottlenecks providing a literal description of each step of the process. The internal controls of the validity of the application are not described in detail, as they may be different from one application to another. The major issues are identified and commented. The description mainly focuses on the operational steps of processing applications.

The Diagrams 1 to 4 focus the tasks of the Licensing Unit. However many other officers and offices of MEM are involved in the process, like the Minister, the Commissioner, the Assisting Commissioner, and MAC. Chapter 3.3 describes the data-flow between all the involved participating offices in MEM and the exchange of information with the applicant.

In Chapter 3.4 the computer system used for a graphic control of the overlaps between existing Licenses and new applications is developed further. This process is important as it has a direct relation with the future MCIMS the principles of which are to be designed in this Project.

Other processes (transfers, amalgamation) are summarised in Chapter 3.5.

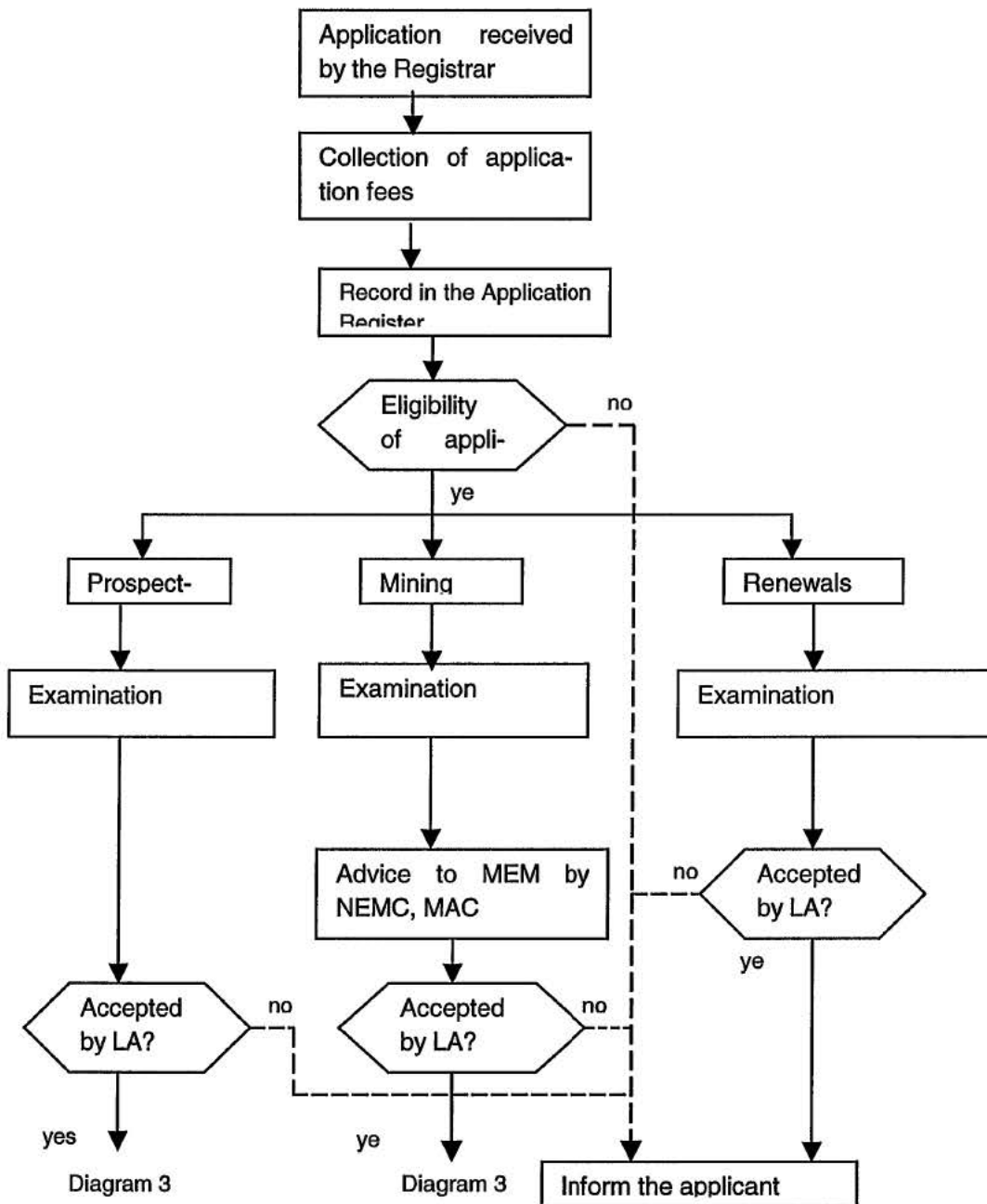
The Archiving and Filing system is described in Chapter 3.6, including major constraints.

3.1 General Flow-chart (granting PL, ML, SML, GML, Renewals)

3.1.1 Application Process for Division A and B Licenses until the Stage of Offer

Diagram 2 shows the tasks of the Licensing Unit to process PL, ML, SML, GML and renewals applications. The applications are divided into three different processes, referring to three different "examinations" undertaken by MEM and the acceptance procedures.

Diagram 2. *Licensing application processing until draft offer*



Notes: the processes "Prospecting" and "Mining" are continued on the next Diagram 3.

The examination step lists the controls made by the LU in accordance with the Act and Regulations, before providing their recommendation – proposed acceptance or rejection, change of coordinates. The controls are different for each type of application and relate to:

- Application for Prospecting License involves the following steps: (i) study of the financial capacity of the applicant; (ii) check of possible overlap between the area applied for and existing licenses or prior applications; (iii) status of the company or the individual.
- Application for Mining License/Gemstone Mining License/Special Mining License involves checking the following: (i) valid PL if transfer from PL to ML; (ii) checking the overlap of the area covered by the application with an existing License or prior application (iii) checking if the Feasibility Study is acceptable (iv) existence of acceptable EIA (for SML) or EAP; (v) acceptable proposal of training of local miners.
- Renewals: (i) confirmation of 50% relinquishment for renewal of PL; (ii) existence of previous reports; (iii) annual rent paid.

The checking of overlaps of area obeys the rules defined in the Act. In the event that checking reveals an overlap, it may be necessary to change the co-ordinates of the boundaries of the application, or alternatively the co-ordinates of the boundaries of the existing overruled Licenses should be modified.

The advice of NEMC is required for the examination of the EIA and EAP. The advice of MAC is required for licenses granted by a Tender process.

The applicant is informed by 'Letter of Acceptation' or by 'Letter of Rejection'. It is noted that the information to ZMO/RMO or other stakeholders is not organised.

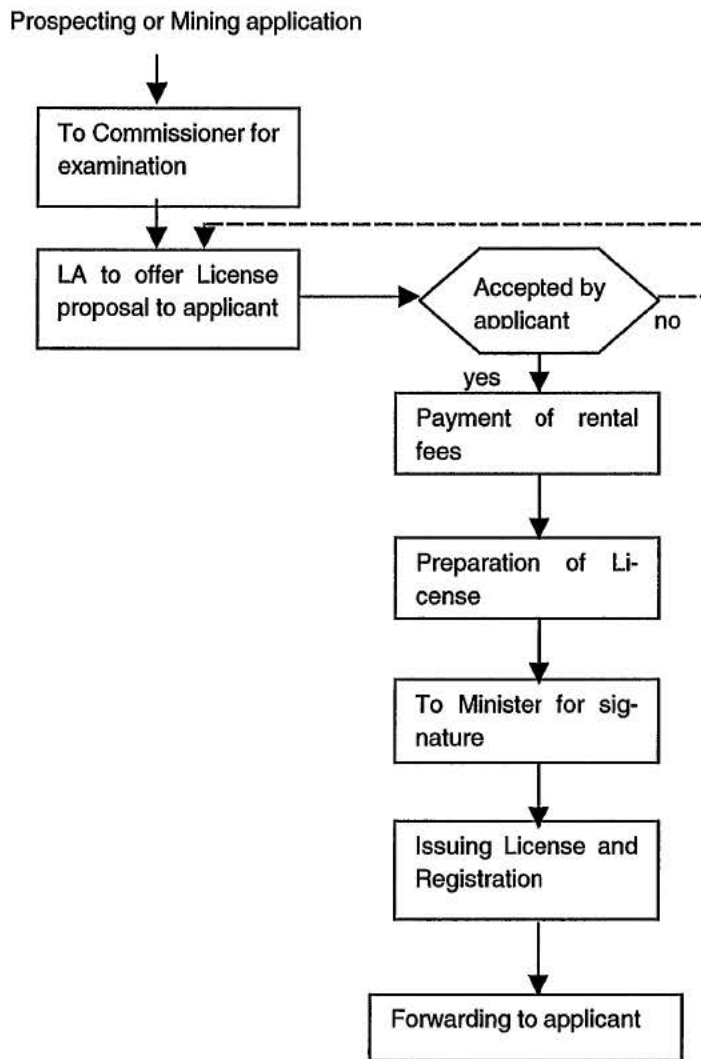
The process of final acceptance involves several authorities, and is described further in Chapter 3.3 and in Diagram 5.

3.1.2 Granting Division A and B Licenses after state of offer

The process of final granting of an accepted application for a Division A and B License generally follows the same route. The data-flow between the Minister, the Commissioner, is detailed in Diagram 5, Chapter 3.3. In addition to these also the Assistant Commissioner is involved in the examination process.

The "Forwarding to Applicant" box means that the applicant is informed that the granted License is ready for collection in the LU. It is observed that in cases when a new license overrules an old license, such license holders are not informed properly and amended licenses are not issued.

Diagram 3. *Granting Division A, B Licenses after preparing draft offer*



Note: the process is identical for Prospecting and Mining Licenses

The “License registration” step combines the archiving, copies to the confidential files and registration in the License Register and in the ‘mineral rights inventory’. This step is detailed in Chapter 4.1.2.

3.1.3 Application Process of Division D Licenses

Diagram 4. General flowchart for granting Division D licenses

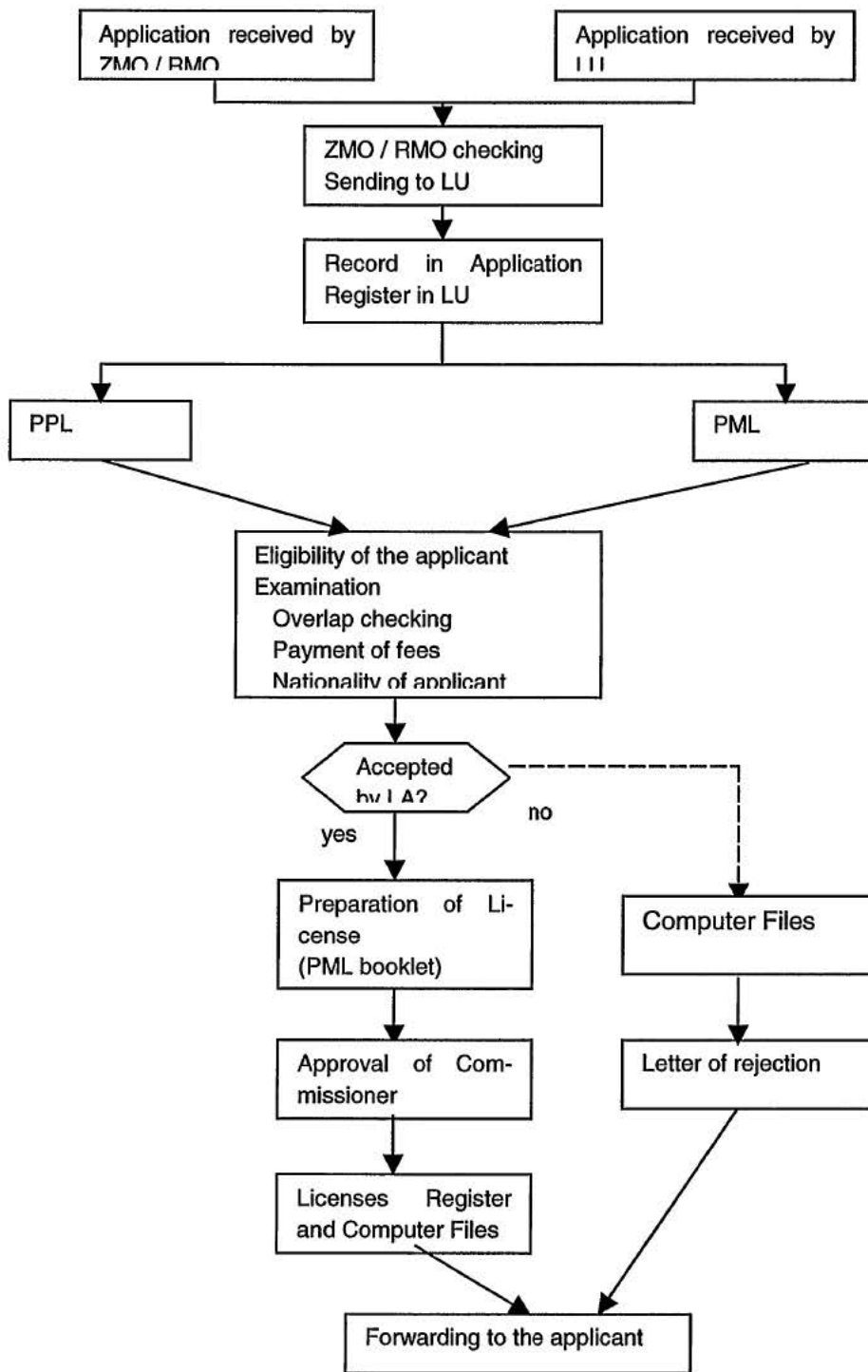


Diagram 4 describes the general process of granting PML and PPL. Reception of applications and information send to the applicant should be monitored by the ZMO, even if the application is submitted directly to the LU office. The Licensing Unit makes the major controls, essentially the control of possible overlaps using the computer facility; these facilities are not available to the ZMO.

The “examination” box includes the control checks currently made by LU: (i) Eligibility and nationality of the applicant; (ii) Area overlapping an existing License or prior application and modification of boundaries of existing overruled license.

The “License Register and computerised files” includes two steps: (i) copy on the Registers of the final decision when accepted; (ii) storage in the computer of the decision to define the area covered by the application as granted (accepted) or vacant again (rejected).

The “Forwarding to Applicant” box means that the License is sent to the relevant ZMO / RMO where the applicant can collect the granted License (original page extracted from the booklet). The process should also include information to those licensees holding a license, which has been overruled by the issue of the new license.

The “overlap checking” should obey the rules defined in the Act. The major requirement to control exclusivity rights is the control that the boundaries of the applications are controlled in order of registration. It must be combined with an up-to-date registration of the status of the application at different stage: applied, proposed, accepted, granted and with an up-to-date follow-up of all the Licenses granted, terminated or cancelled.

The existing computerised procedures detailed in Chapter 3.4, which are used for the checking of overlap, are not fully ensuring these requirements (missing licenses, incomplete information, no control of the dates, no checking application against application). It follows from that that the overlap checking may be inaccurate.

3.2 Detailed Description of Process for Granting Licenses

There are two different routes for granting Licenses: (i) PPL and PML, defined in Division D of Part IV of the Act where the Zonal Mines Office can initiate the process, and (ii) the PL, ML, GML, SML, Renewals, defined in Divisions A, B, and C of Part IV of the Act for which applications are processed entirely by the LU.

The steps of processing Division A, B Licenses applications are the following (exact definition of the terms used, are provided in the heading pages):

1. All applicants for a Mineral right have to fill in a standard “Application Form” issued by the MEM. Subsequently the application is submitted to the Registrar in the Licensing Unit.
2. The Registrar in the Licensing Unit register the application in different Entry Registrars (details are provided in Chapter 4.2.1: “Procedure for handling and filing data”) each of which having chronological numbers, date and time. The “first come, first served” concept is ensured by the date and time of these Registers. The Applicant receives a stamped receipt of the application with the date and time of reception by the Registrar.
3. The LU controls that application contains the Treasury receipt with appropriate number (the reference to the National Treasury accounting book is checked, but not registered) for payment of “Application fees”.

4. Examination of the application follows the flowchart and a "Check-List Form" (Annex A) provided by MEM, (financial study, company status for PL, feasibility study, EIA, EMP for ML, previous reports, annual rents for renewals).
5. The Registry fills a "Follow-Up Form" (Annex B) with the submission date and uses it to follow the advancement of the different stages before granting the License. This form is divided in different "stages" corresponding to the different steps, which are described in the following paragraphs.
6. Stage 1, "Investigation". Recommendations and proposed modifications concerning exclusively literal information, not co-ordinates, are summarised at the end of this stage. Granting is "recommended" or "not recommended" in the follow-up form and the form is dated and signed by the LU.
7. Stage 2, "Check Up" concerns control of overlap using the computer system (MapInfo system) and the "map plan" submitted by the applicant. In case of identified overlap modifications of co-ordinates are proposed. This process is detailed in Chapter 4.1.4.
8. The Check-List Form includes two pages referring to the appropriate sections of the Act. The Licensing Unit fills this form when granting is recommended. The conclusions are checked by a group of officers to ensure the validity of the data and reduce the risk of errors. The Check-List Form is signed by the MAC, and countersigned by the Commissioner.
9. Stage 3, The LU approves the proposed modifications of co-ordinates after the computerized control. The proposed modified co-ordinates are sent to the applicant for acceptance prior to granting the License.
10. Stage 4, "Notification of Grant" includes 2 possibilities
 - a. "Letter of Grant" supposed to be a confirmation that the License is granted fully in accordance with the application requests, or
 - b. "Letter of Modification" after acceptance from the applicant of the modified co-ordinates and the recalculated size, signed by the applicant and the LU.
11. Stage 5, "Preparation". When the applicant has accepted the modification the application process continues and the LU prepares a Project of License (Offer) to be send to the applicant for his approval. A draft license form is prepared at the same time.
12. Once the applicant accepts the Project of License in signing the Offer, the Licensing Unit prepares the final License on a special pre-stamped yellow paper made to prevent fraudulent copies of this original. At this stage, the complete application file is sent to the Minister with the yellow-paper License for signature of the original. The Minister signs when the Registrar, MAC and the Commissioner all have signed Check-List Form.
13. The application is then stored at the office of Minister with a specific chronological number in the "confidential file" (Stage 5.2) Only the original yellow-paper License (one page with the signature of the Minister, one page with the co-ordinates, one page with basic general conditions, dates and the Follow-Up Form return to the LU.
14. At this stage (5.3), the License is numbered in the LU and this number (sequential per year and per type of license) is copied on the original License (yellow-paper License). The stage 5.3 ends with the copy of the License number on the Follow-Up Form (line called "file no" on the form).
15. The Licensing Unit controls the reception of the payment at the Treasury of the "Preparation Fees" and of the first annual "Rental Fee". The receipt is numbered according to

the national accounting book and this number is copied on the second page of the "yellow" original License.

16. The file is going to the Commissioner (stage 6) for his signature of the appropriate page of the original License to confirm the reception of the payment. A photocopy of this signed "yellow-paper" License is made by the Licensing Unit personnel (in the Commissioner office by absence of equipment in the LU) and this copy is stored in the Archives of the LU.
17. The applicant collects the original License (yellow copy) in the Licensing Unit after notification.

The following problems and difficulties are identified in the above procedure:

Ad 1:

- The application form cannot be retrieved in public shops, only in the MEM. It appears that ZMO/RMOs do not have copies of this form in stock. Public libraries and shops should have samples of these forms, particularly for PML and PPL/ PL.
- The date of registration used to define "first come, first served" is the one of the Application Registers in the LU. If applications are sent to a ZMO, the date of reception in the region is not taken into consideration and this may induce disputes. To overcome this problem, the applicant has to submit the application directly to the LU.

Ad 4:

- The follow-up Form is a useful tool developed by the LU in order to control that all steps have been successively completed. However, it is inconvenient that this form is going with the application to all involved offices (see data-flow, Diagram 5) and consequently it is impossible to the stage of the application to check the stage of the application. The possibility of a central follow-up register, accessible to the public as well as the LU, could be envisaged in order to be able to track down any application. Moreover it must be considered to improve numbering and reference system of the Application and Entry Registers (see Chapter 4.2.1.)

Ad 6:

- The computer control of the overlapping rights and applications assumes that, (1) maps and co-ordinates are in a unique co-ordinate system; (2) the computer system is fully operational, and (3) that the Mineral Rights Inventory is up-to-date and complete. These conditions are not fulfilled (see Chapter 3.4 for detailed description). It is assumed that the future MCIMS will solve this issue and that the implementation of a Verification Plan will result in a clean, complete and up-to-date information on Licenses granted and on-going applications.

Ad 8:

- It is assumed that a dialogue exists between the LU and the applicant if the applicant refuses or proposes adjustments to the offered modification. It appears that the applicant generally accepts the changes.
- We have noticed that almost all granted areas are larger than the area applied for. The reasons for such changes were not clearly identified and this indicates a problem that must be further examined by LU.

Ad 13:

- It induces that the Minister's office has no reference of the License number in the confidential files, while LU has no reference of the Application in the confidential file. The se-

rious consequence is that it is impossible to link the Archives of the LU containing exclusively the copy of the License with the Application file, which is stored in the Minister's office.

Ad 15:

- In this step, the Commissioner signs a page of the License after the License is approved and signed by the Minister. It is recommended to find a possibility to inverse the sequence so that the Minister signs the final document.

Ad 15 and 16.

- The original confidential document moves from one office to another, and is kept in unsafe conditions waiting for the Applicant. Such uncontrolled circulation of confidential original documents should be avoided. Improving the storage facilities, archives, and providing photocopiers to the LU are a few improvements, which must be addressed to solve this issue.

Ad 16 :

- No registration is undertaken of the following actions: (i) reference of the letter to the applicant, (ii) the reception of the acceptance (except in some Entry Registers uneasy to consult, see Chapter 4.2.1) or to the collection of the License by the applicant in the follow-up form.

This description shows that some of the concerns can be addressed without changing the requirements, such as:

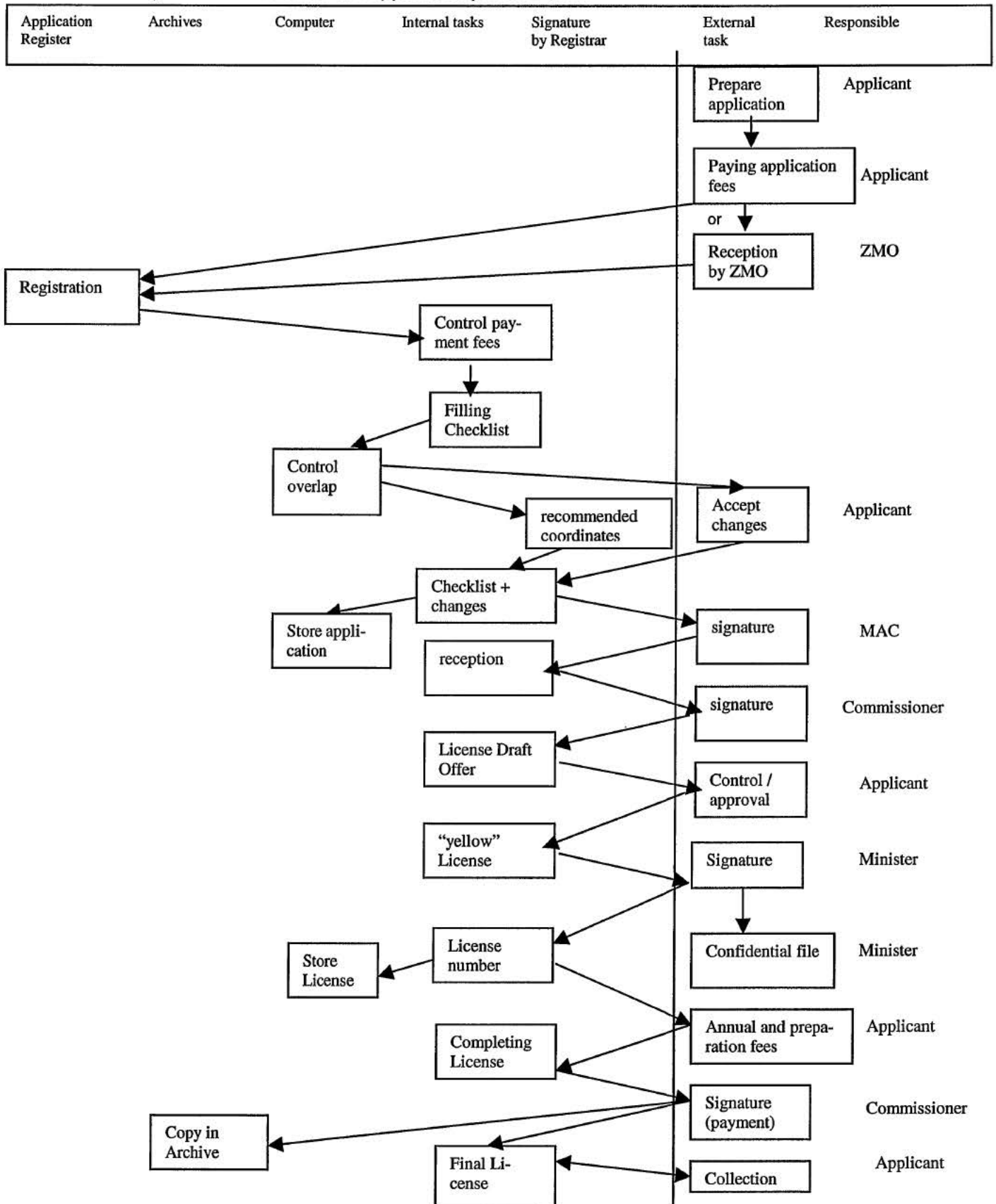
- Define an entry / reference / register number which is unique all along the process and that can be used to retrieve the application and for follow-up on the progress
- Furnish the Registry Office with photocopier to avoid permanent moving of confidential files or originals between the LU and the Commissioner's and Assistant Commissioner's offices
- Limit the number of transfers of files and documents between offices to a minimum by adjusting the sequence of some tasks
- Improve the service to the applicant by improving the flow of information on the status of the application
- Ensure the safety of original documents (yellow document, confidential file) by centralising the preparation of licenses to one restricted location.
- Inform systematically any applicant or licensee if a License has been modified due to exclusivity priorities, as well as copy all correspondence to the ZMO/RMOs.

Other improvements can be overcome by a simplification of the Act, a better distribution of the roles of players limiting transfers of files between Minister, MAC, Commissioner and LU.

3.3 Flowchart : Actors of the Licensing Application Process

The issue of multiple transfers between offices is better identified in Diagram 5.

Diagram 5: Flowchart of the application process in LU



This flowchart confirms the many exchanges of information between the individuals and offices involved. The practical working conditions in the MEM are inadequate to ensure safety of confidential documents or originals. Moreover there is no central register providing information on the stage of the application.

It appears to the Consultant that some applications are even lost in the system, and it was observed that copies of Licenses were missing in the Archive. The reason for this may be:

- The License number is allocated but no copy of the License exists in the LU Archives;
- The copy of the application received by MEM, or ZMMO/RMO is stamped with the date and time of reception and returned to the applicant. This reference is not repeated in the LU Entry Register, so that all entries cannot be traced.

Adequate measures should be taken immediately to ensure consistency between Applications / Licenses stored in Archives, registered in Entry and Application Registers, stored in the Register or Computer files. A consistent filing and numbering system can do this. This specific issue is detailed in the Chapter 3.6.

A Verification Plan is developed in Report 7.1, aimed for ensuring consistency.

3.4 Computer System

The Licensing Unit uses a computer system for verification of the co-ordinates and for registering License data. A MapInfo based packages for this purpose is available. The system provides graphic boundaries of the granted Licenses and the one application in question to be controlled; the MapInfo software is mainly used for controlling overlaps. In addition to this system three non-connected computers are used for storing the Mineral Rights Inventory, but is based on Excel. Data are exchanged by diskette between the Excel systems. For checking overlap the data is re-entered to the PC's providing for MapInfo area check. Back up is only randomly undertaken, and the copies stored inappropriately.

The processes and difficulties are detailed in the Report 3. The details are not repeated in this report; but a few issues and conclusions are given below.

The major problems observed are:

- Data are not structured in a database, but duplicated without control in both Excel and MapInfo;
- Backup facility is inadequate. Data can be lost at any time
- No indication available to check if a License is granted or have been modified
- Information about which co-ordinate system (e.g. datum) has been used for the co-ordinates is not available
- Procedure manuals are not available
- Date validation routines are inadequate

Such weaknesses should be addressed.

However, it should be stressed that the major problems in the mining cadastre system cannot be solved without adjusting the organisation of the work, with respect to two issues:

- The management to ensure the exclusivity based on the “first come, first served”. The computer system is used for storing application as soon as they are returned from the completion of the Checklist Form approved by the Commissioner. Hence, there is no guarantee that the first application checked in the computer is the first registered in the Application Register. Inversion in the chronological order is not controlled and it is likely that the computer check is not undertaken in the order of date/time, with the consequence that the first arrived application may be rejected because the area has been allocated to a later arrived application.
- The status of the application / Licenses. The computerised Mineral Rights Inventory should contain both applications and Licenses at different stages of their life: Applications should be entered as soon as they are registered to ensure the “first come, first served” rule, and then subsequently co-ordinate control should be undertaken;
- The different legal status of a License should be monitored to ensure that the control of the coordinates is made exclusively against active licenses: approved by the applicant with proposed changes, granted or rejected, renewed, cancelled, extended or reduced area approved.

3.5 Other Processes

Two processes resulting in a registration were not detailed in the preceding Chapters: Transfer of Mineral Right and the amalgamation (of two or more Mineral Rights).

Transfer of a Mineral right is ensured in the Act with a prior authorization of the Licensing Authority. In practice, the only control of the transfer concerns the eligibility of the new applicant before registering. A transfer result in the provision of an amended License has to be signed by the Commissioner or the Minister according the type of License. It appears that this process is not followed, except when caused by some large-scale mines and in the event of bankruptcy.

A Letter of Accept is signed by the LU to confirm the transfer, and is send to the applicant. The change of name in the computerised register is not ensured.

The amalgamation represents the merging of two or several contiguous Licenses to result in one single License. It appears that very few applications were processed concerning the amalgamation and it cannot be considered that there is an administrative use of this rare process. The rules are defined in the Act and Regulation (see Report “Legal and Regulatory Assessment”).

3.6 Procedures for handling and filing data

PML and PPL

Applications for PML and PPL are stored on shelves in the Archives of the LU. Zonal and Resident Mines Office classify them in sequential number.

Due to the limited space of the Archives, the PML applications are stored in an area difficult to access, and thus difficult to use. In principle the ZMO/RMO's have copies of all the applications and granted licenses. It has been observed, that in practise this is far from the case.

The PML and PPL are not issued in a contract format, but the License certificates are forms attached together in booklet of 50 Licenses (approx. A5 format) with a format defined in the regulations (MRF 10 and MRF 11). Each page consists of two parts: one signed by the LU that is separated and given to the applicant when the License is granted. The other part with the same information copied is kept attached in the booklet. The License number is a pre-printed number in sequential order.

The License certificates includes the name of the applicant, the area of the license, sometimes a number that defines an index of a map or a grid, a short description of the License. No co-ordinate is copied. These booklets are poorly stored on a shelf of the Archives, easily accessible by anybody who enters the Archives.

There is no part of the PML/PPL extracted from the booklet to be delivered as a copy to the Zonal Mines Office (only the holder's). ZMOs are poorly equipped and many have no photocopier. It is therefore assumed that ZMOs have no copy of the Licenses granted.

Other Licenses

Photocopies of all other Licenses granted (PL, PLR, PPL, ML, SML, GML), are stored on shelves in the Archives of LU in sequential number by type of License for the period dating from 1988.

It was observed that some copies of Licenses are not enclosed in the files. It is impossible to determine the exact reason for this absence, but several explanations are possible: (i) the application was never granted; in principle, this cannot be possible if the described process is carefully followed, as no numbering is possible before the signature of the Minister; however, in absence of strict control, this option should not be ruled out; (ii) the License was not collected or fees not paid by the applicant. That means that the applicant collects the License in the Commissioner office or directly in the Minister office instead of following the normal process to go the Licensing Unit; or (iii) is simply missing by non-classification of the copy. There is no record of the missing copies of Licenses.

This absence of a copy means that the land is regarded as occupied and not vacant for another application, but the License granted is not legally in operation or not collected or simply not granted. Further detailed investigation is necessary case by case to identify the reasons and update the Computer File accordingly.

The files include only the photocopy of the original license: heading page with name of holder, date, type of license and duration, second page with co-ordinates, additional pages with some standard legal information. The applications are stored in the "Confidential files" in the Minister's office. There is no indication of the Confidential File references in the Archives of LU.

Application Registers

There are five different Application Registers, all are hardcopy books, in which the registration is made manually by the officer:

- Application Register for PL and PLR, encompassing the following information: Serial no., date/time; name of the applicant; amount of the fee, receipt no. and date of the payment; district and sub-district; type of mineral; witness.
- Application Register for ML, SML, GML and Renewals (all), encompassing the following information: Serial No.; Name and address of the applicant; mineral category; locality and district; Area size; date of approval; type of license; Date recognised; amount of the fee, receipt number and date.
- Application Registry for PML, encompassing the following information: Serial no.; Name and address of the applicant; Date; type of license; type of mineral; approval or refusal date; Zonal Mines Office; PML no. (the time is not registered here but attached on the registration form).
- Application Registry for PPL, encompassing the following information: Serial no.; name and address of the applicant; date received in Dar es Salaam; type of license; type of mineral; zone; Registration no.; Zonal Mines Office.
- Revenue Collections – mineral rights, encompassing the following information: Serial No.; Date received; name and address; Receipt a date of payment of fees; Amount; types of right; license no.

The Application Registers are kept in the 9th floor of the Registry during working hours; outside working hours they are kept in an archive on the 5th floor.

Access to the Archive and Register

The archives of the Licensing Unit are located at the 9th floor of the Ministry of Energy and Minerals in the Registry Office.

Archives are meant to be restricted area, allowing access for authorised staff only. The License Registers are in principle open to the public on a fee basis. However it was observed that Archives and Registers are used in the same room. Access to the room was beyond any control and no records on visitors/MEM staff are organized. The door is – outside working hours - locked by one simple lock only. Both archive and registers are vulnerable to fire (a fire occurred on 7th floor not long time ago!).

According to the Mining Act 1998, Sect. 105, MEM shall ensure that a similar register exists in each Zonal Mines Office. LU cannot comply with this Section of the Act, because the unit lacks the means in terms of telephones, fax machines, photocopier and also due to the absence of instructions how to undertake this obligation. Thus the ZMO/RMOs receive only

sporadic and random information from the Licensing Unit Registers. Consequently the information available in the ZMO/RMOs is incomplete and not useful for the applicants.

3.7 Duration of the Application Process

The Act and Regulation does not provide a maximum duration for processing an application, except some incompletely defined situations.

The duration for granting a PPL or PML from the deposit of the application in the ZMNO/RMO is depending on several factors: (i) the applicant is not always comfortable with administrative procedures and ZMOs face difficulties to contact him when documents are missing; (ii) the transfer of the information from ZMO to the LU is difficult and long; (iii) the processing of the application in LU depends sometimes on additional information to be provided by the applicant to the ZMOs, creating additional delay. This indicates that a very important number of applications are pending in the ZMO/RMOs compared with the limited number of Licenses granted and that processing a PPL/PML usually takes more than 3 months.

It is assumed that this delay is due to several issues:

- The difficult communication between ZMOs and LU, which cannot ensure that all applications are sent and received;
- The absence of administrative skill of artisanal or small-scale miners;
- The distance and sometimes non-functioning direct communication between the ZMO/RMO and the applicant.

When information is missing, ZMO/RMOs are waiting for the applicant to show up, because contact is not possible. But they cannot cancel the demand, even though this is not yet entered into the process, including the "first come, first served" rule.

Concerning Division A, B Licenses, it appears from the stakeholder interviews that the duration for processing depends on several factors like:

- The application is complex and necessitates many controls from different offices, and agreements with the Minister (SML);
- The applicant is easy to contact and permanently in Tanzania;
- The applicant is permanently following-up on the status of the application by paying frequent visits to LU.

The duration of application treatments varies from about four months to in excess of one year. Proposals for amending the Act and Regulation are defined in the appropriate Report. However, no regulation can improve this alarming situation if MEM does not change the approach to the applicants and license holders, implementing improved service-minded transparency, efficiency, confidentiality, and data safety.

4. Assessment of the MEM's Mandate

The MEM and the Licensing Unit are facing numerous constraints to undertake an efficient and smoothly operating organisation. The necessity to amend the Act and adjust Regulations is pinpointed in several occasions (Report 2.1). But it appears that internal processes in many cases can be improved by practical actions like purchasing equipment, training the staff, providing clear instructions, adjusting the procedures, and changing the overall approach to a more service-minded organisation.

Some issues are of major importance to ensure the implementation of an effective MCIMS. Other issues have an indirect impact on the efficiency of the License application procedures and are inventoried. Essential topics are detailed in the following chapters: (i) reporting from Licensees; (ii) Inspections; (iii) Conflicts; (iv) Information to the applicant; (v) Non active licenses; (vi) Illegal mining; (vii) Overlapping rights; (viii) Communication with regions. Problems related to finance, security, environment is outside the scope of this survey, and is therefore not dealt with.

4.1 Report reception procedures and control

Confidential - and compulsory - company status reports are stored randomly on shelves in the Archives. By instructions the reports are kept separately from the Confidential License File – even though they are supposed to provide information being meaningful for keeping track of the activity progress on each application. Moreover the reports may contain important geological information, which in the one way or the other should be conveyed to the Geological Survey for their general update, and which should be part of the state's monitoring of the intended use of the country's natural resources.

The legal Reporting requirements (Report P2.1) is not justified by an adequate number of skilled staff to assess the reports; it is an impossible task for MEM to ensure that all reports are delivered in time and assessed by professionals. It is not anticipated that the required number of geologists or engineers will be recruited, or even is available in the market.

No appropriate action can be undertaken if the control of the reception of the reports is not clearly monitored and if they are not dispatched to the appropriate offices. The lack of clear instructions makes it impossible to determine if a report received in the Licensing Unit has been sent to the Commissioner for example or to the appropriate office, and inversely.

In the event the reports are re-dispatched to the ZMO/RMO, these offices do not have the required staff and time to seriously control and check the content of the reports. However, ZMO/RMOs receive only a very small percentage of the reports compared with what should be provided based on the number of Licenses granted within their zone.

The main reasons for the low number of reports received in LU, mainly for PPL, PL, PML appears to be:

- The 'non-use' of these reports discourages the holders of rights to prepare serious reports,

- The Licensees may find that it is a problem to submit confidential information in an unsafe environment;
- The high percentage of non-active licenses, essentially PML; such licenses have nothing to report.
- The unclear dispatching rules of these reports causes confusions about which reports have been submitted; some license holders may have submitted to ZMOs and some to LU, and the lack of permanent communication between LU and ZMOs further compounds this problem.

The Environmental Assessment Impact Report issue is discussed in Report 2.1. The consequences of the legal and regulatory weaknesses are:

- No control of whether or not reports are provided;
- Exchange between administrative offices is made via the MEMC, which is not informed on all Licenses granted.
- The “polluter pays” statement of the Mineral Policy cannot be systematically applied.

4.2 Inspections and termination procedures

The field inspections are made by the ZMO/RMOs in compliance with the Regulation.

Large-scale mines are usually providing easy access to all the required information, and security and environmental standards applied by the international companies appears to be high. A good organisation, clear and transparent information, good reporting and skilled counterparts facilitate the inspection by the ZMOs.

The inspection of small-scale mines is in many cases impeded by several problems:

- The security norms are only followed with a minimum of standards, mainly because the holders of such Licenses – mainly PML - try to minimise the costs of exploitation and maximise benefits;
- The ZMO/RMOs cannot cancel a License in the event that security and environmental norms are not followed; this is the responsibility of the Minister. The ZMO/RMOs are limited to send a notice to the holder accountable, without ensuring that it will be followed by any legal action.
- Concrete inspections, like entering a mine, are in many cases considered a safety risk by the Inspector and thus no inspection is conducted. The consequence is that inspections can be avoided simply by not obeying the safety-regulations.
- The Regulation is detailed, but complex and Inspectors complain that a checklist does not exist. However, international experience shows that inspectors use their experience and capacity to identify irregular or dangerous plants, based on a complete knowledge of the regulation, not on detailed checklists.

Recent accidents demonstrate the necessity of a better control of safety and environmental norms. Several actions are possible:

- Amend the Act to decentralise some penalty applications at the ZMO, or under control of the LU;

- Transfer the authorisation with respect to mining safety from MEM to an independent government body. The institution should also be issued with the authority to close down an operation if safety is not up to standard.

It is international practice that safety and environmental issues are normally not dealt with by the Ministry or the Licensing Unit, but by independent government bodies, specialised to monitor such issues and empowered to close operations if standards are not met.

The Rush Areas are illegal operations operating without any license and therefore beyond the responsibility of the ZMO/RMOs. The only improvement is to reinforce the capability of Zonal / Resident Mines Office offices to enforce the Law. Illegal mining should not be tolerated, not only because it is illegal and the existence is against the Mineral Policy, but simply because it is a human issue to ensure safety and environmental-safe activities with an well-organised and efficient support of the administration.

4.3 Conflicts Solving

The types, frequencies and numbers of conflicts are evaluated based on information from different origin, like ZMO/RMOs, LU, private miners and associations, licensees and other holders of land rights.

Based on the questionnaires sent to the ZMO/RMOs, the most common disputes experienced by ZMO/RMO in the regions have been gathered, and it appears that the most important disputes are:

- Mineral rights holders against other surface right holders (inclusive farming)
- Two mineral right holders claiming the right to the same area (including underground disputes and disputes with regards to demarcation)
- Mineral right holders against other authorities, and
- Illegal mining activities

This list may not include other disputes solved without the intervention of the administration, between:

- Two holders of SML claiming rights on the same underground area; some are solved internally, with the assistance of Miners Associations
- Large-scale mining companies and villagers or individuals claiming additional compensations. Disputes are directly solved between the company and the claimant or are going to Court
- Large-scale mining companies and neighbouring small-scale licensees. Cases may go to Court
- Holders of rights and illegal miners. Disputes are solved case by case by direct negotiation
- Licensees and villagers. Individual agreements and amount of the compensation are usually negotiated between parties

Individual agreements are generally achieved and disputes may go to the administration for arbitration of local conflicts and disputes. It appears that many difficulties relate to the ac-

ception and amount of the compensation to pretending holders of other land rights. The Act is clear on the aspects to compensate (see “Assessment of the Legal and Regulatory framework”) but does not provide the methodology to calculate the amount, difficult to define in absence of active land market. Clear instructions should be provided to the Zonal and Resident Mines Office to clarify the processes, based on the Act.

The importance of the disputes should not be underestimated, because such may discourage investors and slow down the development of the mining industry.

The other issue relate to the definition of the “lawful occupier” or simply to whom to compensate. The Act is not fully in accordance with the newly promulgated Land Law. This issue should be solved legally as a priority. In the meantime clear instructions should be provided to the Zonal Mines Offices.

Another issue is the demand for taxation of licensees by the Local Governments, governing the area where the mines are located. From the Mining Act and Regulation it is clear that any fee related to a mineral right shall be paid to the Ministry of Energy and Minerals – no other bodies can claim fees for a mineral right. The observed practice is an issue to be addressed at the political level.

4.4 Information to the Applicant and Applicant Constraints

A major weakness is the difficulty for the applicant to be informed on the progress of the application. The absence of a general index, the numerous steps of transfers of the application from one office to another, and the absence of complete and up-to-date accessible legal information concerning existing rights cause the lack of transparency. The major difficulties faced by an applicant are summarised in the following list:

1. Application forms are exclusively stored in the Ministry, or in the ZMO where the existence of sufficient samples cannot be ensured. The form is not available in public or governmental bookshops. There is no information desk to assist the applicants.
2. The accessible information concerning the existing Licenses in a certain area is not complete and up-to-date. Unexpected overlapping Licenses may exist and this may be discovered after the License is granted.
3. The existence of another application in the same area that could overrule the current application according to the “first come, first served” principle is not impossible. The computerised control of the boundaries (step 6) is the only step where the co-ordinates are controlled and corrections proposed but without full security (Chapter 3.4)
4. Different on-going applications may exist for the same location and registered at different time. The Application Register records the date and time, but not the co-ordinates and the complete information is not registered and available. It is consequently impossible at the stage of the registration of the application to ensure correct knowledge of the status of this area, perhaps already applied for.
5. The complete information is not available in MEM because of lack of co-ordination between the Ministry of Lands and the Ministry of Energy and Minerals. The prac-

tice is to negotiate directly with villagers or farmers identified in the field. Villages and farms are not always clearly demarcated, except recently some village boundaries.

6. The Act defines the rule for appreciating compensations – what should be or not be compensated - but no complete and detailed methodology exists for calculating the amount of the compensation.
7. It is difficult to recognise and to identify non-active license in the field. They should be identified via the Mineral Rights Inventory enabling the applicant to negotiate the amount of the compensation. It is noted that this use is not in accordance with the Act, which orders compensation against investments only.
8. In case of disputes, large-scale companies use lawyers in order to ensure the legal security of the transactions and compensations. Small-scale miners cannot finance such experts and ZMO/RMOs are not always called in advance for legal advice to the licensees.
9. It is necessary to follow the status of the application in MEM closely to ensure that it is not lost, treated in an acceptable time and not pending for months. In case of administrative silence, the applicant is forced to investigate on his own initiative in MEM, by approaching the officers involved directly.
10. The difficult working conditions in LU (office space, personnel, and equipment) hampers that confidential information is kept secret and not distributed or accessed by non-authorised personnel or persons.
11. In case of modification of co-ordinates proposed by the LU, it is practically impossible for the applicants to control in the field the validity of the proposed correction. All is based on the reliability of the existing computer system – and as described in Report 3, this system cannot ensure that overlaps are not occurring.
12. There is no time limit to grant a license. Investment plans and profitability are directly depending on starting dates and delays in the application process may cause technical and financial difficulties to the applicant.

The majority of all these issues could be addressed if an effective, transparent, accessible, up-to-date Mining Cadastre Information exists, and hence is another justification of the importance of the MCIMS as a tool to promote the mining sector. However, it presupposes a change in the approach of the staff of the administration, changing from bureaucratic management to a mode characterised by service to the customer.

4.5 Non-active Licenses

As described in Chapter 5.4, many licenses are inactive, but the explanations for this may vary:

- The application is granted based on the financial capability of the applicant. However, some Licensees are waiting for enough cash to start investments in prospecting or mining activity. It is obvious that the financial capacity of the Licensee is only seriously checked for large-scale companies, not for Section D applicants. Some of the PML holders do not have the financial strength to undertake the planned operations – from which it follows that if the search for external financial support fails, they stay inactive.

- Another categories of license holders are working only on a speculative basis, waiting for discovery in adjacent areas to give reason to a joint venture or a transfer. Such behaviour is pure speculation, and the Act is not supporting compensation for such inactive License.

The rule defined in the Act is to pay for the investment made without paying the plus-value resulting from other Mining activity development. However international exploration activity is based on the principle of expectation of plus-value. It is moreover in contradiction with the current use, when it is based on a deal between the two parties that can include compensation for dormant Licenses. The issue should not be financial – compensation or not – but operational – ensuring prospecting or mining activity.

The control of non-active licenses is a major issue that can be solved in the MCIMS, in the longer term; when communication with ZMOs is improved, the use of the land in the License area can be better controlled.

The Act does not provide efficient legal procedures to ensure that operation starts as soon as the Prospecting or Mining License is granted. Inversely, the obligation to ZMO/RMO to report on dormant licenses encountered during inspections is not followed by any legal action – notice to start activity, penalty, cancelling License.

4.6 Illegal Mining and Rush Areas

Three different types of illegal mining activities occur and different processes apply:

- In a vacant area not included into natural reserves. ZMO/RMOs have stated that they inform the miners that they have to apply for a Mining License (Report 1, Annex C). The results of such discussions are not known, but artisanal miners are poor, not adequately equipped and it is assumed that they are reluctant to pay fees for a poorly profitable and often temporary exploitation.
- In Forest or Wildlife Reserves. Mining is in not authorised. ZMO/RMOs declare that they inform the illegal miners that they have to leave the area. The results of such discussions are not known, but it is doubtful that miners cease activity if there is no strong legal action.
- In an area allocated to another License. Usually, the lawful holder of the right negotiates with the Miners. In few cases, it is reported that a legal action, using the Police force, has been undertaken with the support of the Zonal Mines Office, to cease the activity. Private agreements are sometimes made easy when the holder of the License considers that illegal miners can prospect and work for him. But this private agreement does not take into consideration safety risks issues.

In any case, the safety of such illegal mining cannot be ensured. Some attempts to tolerate illegal mining if they comply with safety standards are not justifiable because it opens the door to an “informal” mining and prospecting activity contradicting the objective of the Mineral Policy of “rationalising the licensing system” and “upgrading artisanal mining into organised and modernised mining”.

Rush areas targeting gold and gemstone/diamonds appear to be common and widespread. More than 36 rush areas are reported from nine of the ZMO/RMOs. No system can solve this issue; it depends on the will of the administration and on the capacity to act.

4.7 Overlapping Rights and Demarcation

The possible overlapping of the application with another application or with a valid License is checked using the co-ordinates provided by the applicant and the computerised system installed in the Licensing Unit.

The assessment of the current data system has demonstrated that the data stored in the computer are not reliable and the following weaknesses are observed:

- No data safety; random backup, and the computers are in poor working conditions. The risk of losing information – partly or totally – is high.
- The data are proved not complete. It appears that data are missing.
- The internal process of license application does not formally include the updating of the computerised data at each stage, so that it is impossible to know if the existing digital information represents the co-ordinates at the stage of the application, or after proposed modification, or the final co-ordinates at the stage of granting the License.
- There is no organized control of the dates of and of validity of the Licenses. Some Licenses may be still stored in the computer although they are terminated and the area covered by the License actually is vacant;
- The background topographic maps are of different quality, scale, and units (meters, yards). It is not proven that the digital topographic background used in the computer fits the sketch map provided by the applicant. Several hundreds meters are expected in some cases. The relative position of the Licenses with the topography (and the physical objects) cannot be ensured;
- There is no field control of the validity of the co-ordinates provided by the applicant. It is not impossible that the Mine is not located at the location shown on the map.

The problem of overlapping licenses may create serious problems, which cannot be solved at short-term, and will continue to have a very negative impact on potential investors if no attention is put on the rapid implementation of a modern Mining Cadastre System.

Another important practical issue is the field demarcation of the beacons of the licenses. The regulation stipulates the need of beacons and defines the design and material. It was observed that many holders are not carefully following the regulations and that many beacons are missing. That was also observed for an area, declared Reserved Area by the Minister, for which the MEM is responsible.

4.8 Communication between LU and ZMO/RMO

The communication difficulties between LU and ZMO/RMOs have been described previously, and it is observed that none of the offices involved in administration of the Mineral Rights are equipped adequately with regard to telephone and Internet connection.

The communication constraints cause major problems and should be addressed to enable an efficient monitoring of the Licensing Unit processes. The following constraints are observed:

- Basic equipment, telephone line, computer, fax machines in the ZMO/RMOs is inadequate;
- Regular flow of information to ZMO/RMOs concerning Applications received and Licenses granted is missing, so that ZMO/RMOs are poorly informed of the vacant areas;
- Legal and Regulatory constraints of distribution of responsibility between LU and ZMO/RMOs, Commissioner and Minister. (See "Assessment of the Legal and Regulatory framework" Report).

Improving communication with ZMO/RMOs requires not only modern equipment, but also introduction of manuals describing the procedures to be followed, directions and general administrative training courses. Moreover the staff should be trained to appreciate the need of comprehensive information flow system

5. Constraints

5.1 Legal and Regulatory Constraints

The Report 2.1: inventories all legal issues and proposes an approach for preparing amendments, which are detailed in the Report 2.2 These amendments of the Act aim at simplify the Licensing processes, and complete missing information.

The findings can be summarised as follows:

- Simplify the Licensing system by reducing the types and specifications of licenses in order to make the processes easier to administer;
- All licenses – with the exception of PPL – shall have the same strength of exclusivity
- Improve transparency and introduce objective criteria in granting prospecting and mining rights;
- Standardise the procedures with a minimum of individual arrangements, which presently make the monitoring complex;
- Redefine the role and responsibilities between the Minister, the Commissioner, the Licensing Unit and Zonal / Resident Mines Office officers in order to improve the efficiency of the system

5.2 Resources

Table Fejll Ukendt argument for parameter.. *Equipment of Zonal / Resident Mines Office offices*

Zone	ZMO/RMO	Vehicle	Com-puter	Printer	Photo copies	Tele phone	Fax
CENTRALWESTERN	Shinyanga	1	NO	NO	NO	NO	NO
	Kahama	1	NO	NO	NO	1	NO
	Tabora	No info	NO	NO	NO	NO	NO
LAKE VICTORIA	Mwanza	1	1	NO	NO	1	NO
	Kayanga	1	NO	NO	NO	NO	NO
	Musoma	1	NO	NO	NO	1	NO
WESTERN	Mpanda	1	1	1	NO	NO	NO
SOUTH WESTERN	Mbeya	1	1	NO	NO	NO	NO
	Chunya	1	1	1	NO	NO	NO
NORTHERN	Arusha	2	1	NO	NO	NO	1
CENTRAL	Dodoma	No info	1	NO	NO	1	NO
EASTERN	Dar es Salaam	1	1	1	NO	1	NO
	Morogoro	1	1	NO	NO	1	NO
SOUTHERN	Tunduro	1	NO	NO	NO	1	NO
	Songea	1	NO	NO	NO	1	NO

This table is extracted from the Report 1, Annex D “Questionnaire responses from Zonal Mines Offices and Resident Mines Offices”. The details of this report are not repeated. The list of ZMO/RMOs is incomplete because not all offices have responded to the questionnaire.

The lack of resource is clearly demonstrated in the Table. For example, none of the offices possess a photocopier and only one office possesses a fax machine. Computers are used for basic administrative functions, but printers are not available in all offices. Telephone is available in only 50% of the offices. The vehicles are not all in working conditions.

5.3 Infrastructure, safe storage rooms, archives

The Ministry of Energy and Minerals is located in the central part of Dar es Salaam. The area is easy accessible. However, the Licensing Unit is located in the 9th floor – and 7th floor was recently totally destroyed by a fire, illustrating the vulnerability of the premises to fire.

The office place is scarce and the registers, the archives and the computers are located in a two-room office of about 20m². Shelves are full with copies of Licenses and PML applications.

There is evidently no control of the personnel entering the archive office, which at the same time is the working area for the computer operators and the Licensing application processing personnel. Archives should be separated from the working area to ensure controls and security.

No photocopier is installed in the Registry office, so that “Yellow” Licenses (the original and unique License document) is moving between Registry and Commissioner offices, as well as other confidential files for photocopies. The Registry office should be equipped adequately to ensure data confidentiality and safety with regard to fire, theft, and authorised access.

5.4 Skills and Human Resources

All the personnel of the LU are committed to their tasks and responsibilities and are clearly aware of the importance of their work for the MEM as well as for the development of the country. However they may well be frustrated by the state of affairs.

The difficulties as regards to the human resources are:

- The number of employee does not increase in accordance with the fast growing development of the mining activities, and it is assumed that this situation will continue in the coming years.
- It is difficult to recruit new personnel for supporting the fast increasing activity of the LU. This causes work overload and delays in the processing of applications;

- Assuming that to replace a leaving employee time to find the right person is needed, it is impossible to ensure organised transfer of knowledge to the newly appointed staff.
- In particular, adequate training cannot be planned, and no specific permanent training is organized, which is one of the major constraints for an efficient licensing system.
- There is no training activity, and new recruited employees are trained on-the-job. This creates a depreciation of the quality of the work by absence of transfer of instruction and overlap between resigning and newly recruited or appointed employees;
- Providing an efficient service to the customer needs specific training and availability, which is not in place.

The Report “task 7: Training” details training courses needed, proposals for their organization, target employees, schedule and cost. Details are not repeated in this Report. The conclusions can be summarized as follows:

- Organise training based on an approved Training Plan;
- Provide clear written instructions / operation manuals to the new employees;
- Simplify the procedure, in amending the Act if necessary, to ensure that the minimum requirements are fulfilled in avoiding overload.
- Implement tools using modern equipment, computers, Internet, Archives, in order to provide an easy-to-use support to officers of the Licensing Unit.

6. Proposed Improvements and Recommendations

The assessment of the MEM's mandate shows that it is necessary to improve the efficiency of the service provided by MEM and that it can be done by several actions combined with changes in the regulation or amendments of the Act:

- Separate Archives and Registry, with a reserved access to the Archives to guarantee confidentiality and security. Move Archives to a safe place.
- Equip LU with appropriate computer systems and photocopier.
- Provide necessary equipment to each ZMO and RMO, including a 4 wheel drive car in good conditions, a photocopier, telephone line with fax and access to Internet, modern computer, software and printer.
- Enhance the entry / exit registers and numbering system in order to be able to retrieve what is the current status of an application, where is the application, and the complete application even after the License is granted;
- Adjust the existing procedure to ensure that the "first come, first served" principle applies.
- Proceed to the Verification work as defined in the Report task 3.2 in order to guarantee the control of coordinates and the exclusivity of the rights;
- Start the training of the employees as defined in the Training report task 6.
- Bid for equipment and software of the MCIMS as defined in the Tender document attached in Task 7.3 Report.

This Report demonstrates that the implementation of an efficient Mining Cadastre System is one major tool of improvement, providing a legal database of the prospecting and mining areas and status accessible to all the central and national offices in order to offer adequate service to the customers.

MEM and the Licensing and Registry Sub-Section cannot operate efficiently within the existing legal and administrative framework. Simplifications and standardisations are necessary to ensure that the existing personal can undertake the work without overload or with a minimum of additional recruitment.

Establishing access to the public ensuring transparency, safety, confidentiality of files and reports; unique and well-defined co-ordinate system; easy and regulated management of reporting and controls; simple and efficient process of Licensing applications, provision of additional equipment and training are the main necessary improvements.

The new service-provider approach of the administration, as also defined in the Mineral Policy, is a key issue for the success of the mining sector. The MEM/LU and ZMO/RMOs should provide the expected service and complete, up-to-date information to the applicants and licensees, limiting bureaucratic constraints to the strict minimum required to ensure confidentiality and security. Training MEM staff on this modern approach is a priority.

ANNEX A: Checklist form

2

CHECK LIST

The application form duly filled as per Sections 24, 25 or 36 of the Mining Act, 1998 and Mining Regulations of 1999, Section 3(1) of Part II Mineral Rights

		YES	NO
Applicant name and address			
	Individual.....		
	Company.....		
1.2	Type of mineral right indicated..... <i>[Section 24 and 36 of the Mining Act, 1998]</i>		
1.3	Duration indicated..... <i>[Section 29(1) of the Mining Act, 1998]</i>		
	Mineral category/Designated Minerals indicated..... <i>[Section 24(1) of the Mining Act, 1998]</i>		
	Locality indicated..... <i>[Section 24(3)(c) of the Mining Act, 1998]</i>		
1.6	Size indicated..... <i>[Section 27(1, 2 and 3) of the Mining Act, 1998]</i>		
1.7	Coordinates indicated..... <i>[Section 24(3)(c) of the Mining Act, 1998]</i>		
1.8	Financial resources satisfactory..... <i>[Section 24(3)(d) of the Mining Act, 1998]</i>		
1.9	Technical resources satisfactory..... <i>[Section 24(3)(d) of the Mining Act, 1998]</i>		
2.0	Attachments		
	Plan on topographical map scale 1:50000 submitted..... <i>[Section 24(3)(c) of the Mining Act, 1998]</i>		
	Certificate of incorporation, Memorandum and Articles of Association in case of a company submitted..... <i>[Section 29(1) of the Mining Act, 1998]</i>		
	In case of a Mining Licence/Special Mining Licence		
	Feasibility Study Report attached..... <i>[Section 38(4)(b) and (c) of the Mining Act, 1998]</i>		
	Environmental Management Plan attached..... <i>[Section 38(4)(d), 64(1) of the Mining Act, 1998]</i>		

3.0	Payment of application fee.....	<input type="checkbox"/>	<input type="checkbox"/>
4.0	Does the area overlap with existing mineral rights?.....	<input type="checkbox"/>	<input type="checkbox"/>
	If yes, modification of coordinates done.....	<input type="checkbox"/>	<input type="checkbox"/>
	Applicant informed to accept modification.....	<input type="checkbox"/>	<input type="checkbox"/>
5.0	Is first come first served applicable.....	<input type="checkbox"/>	<input type="checkbox"/>
	[Section 12(1) of the Mining Act, 1998]		
6.0	Are there no competing applications.....	<input type="checkbox"/>	<input type="checkbox"/>
	Is the applied area falling in a Forest Reserve, Game Reserve, National Parks or any restricted area?.....	<input type="checkbox"/>	<input type="checkbox"/>
7.	If yes, a written consent from respective authority obtained [Section 93 of the Mining Act, 1998].....	<input type="checkbox"/>	<input type="checkbox"/>
8.0	Does the applicant hold previous mineral rights.....	<input type="checkbox"/>	<input type="checkbox"/>
8.1	If yes, performance reports in previous mineral rights submitted.....	<input type="checkbox"/>	<input type="checkbox"/>
8.2	Annual rental fees paid.....	<input type="checkbox"/>	<input type="checkbox"/>
8.3	Has been issued any default notice.....	<input type="checkbox"/>	<input type="checkbox"/>
9.0	In case it is an application for renewal.....	<input type="checkbox"/>	<input type="checkbox"/>
9.1	Application is for [Section 29(3) and 99 of Mining Act, 1998]		
9.1.1	First renewal.....	<input type="checkbox"/>	<input type="checkbox"/>
	Second renewal.....	<input type="checkbox"/>	<input type="checkbox"/>
9.2	Performance reports submitted.....	<input type="checkbox"/>	<input type="checkbox"/>
9.3	At least 50% of area relinquished.....	<input type="checkbox"/>	<input type="checkbox"/>

Recommended by Registrar of Mineral Right

Signature..... Date..

Verification by a special committee chaired by a legal officer

Signature..... Date...

Remarks by the Commissioner for Minerals ..

Signature..... Date.....

ANNEX B: Follow-up form

Application

Submission date

• **Stage 1: Investigations**

Name:

Application sheet

Modification

Recommended ..

Not recommended

Signature Date

• **Stage 2: Check up**

Name:

Modifications

Not recommended

Recommended

Plan map

Signature .. Date

• **Stage 3: Approval**

Signature Date ..

• **Stage 4: Notifications of grants**

Name:

Rejection letter

Letter of modification

Letter of grant for Mineral Rights

Signature Date



Modified/Recommended co-ordinates:-

LATITUDE(S)	LONGITUDE(E)
A.	
B.	
C.	
D.	
E.	
F.	
G.	
H.	
I.	
J.	
K.	
L.	

Size km²

Signature Date

• Stage 5

Name:

I. Draft Licence. Signature Date

II. Print Licence. Signature Date

III. File No.

• Stage 6

To CM: Signature Date

**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

**DRAFT FINAL REPORT
October 12, 2002**

RESUME

**Field visits
to
Arusha and Mwanza Zonal Mining Areas
June 17th - 23rd, 2002**

Report 1, Appendix C

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Executive Summary and Conclusions

In brief,

- *The complexity of the Act 1998 has caused different administrative practices over time, between regions and between the individuals involved.*
- *A great number of illegal mining operations are taking place. Such operations are violating the Mining Act 1998 and potentially also violating third parties' mining rights; no official actions are taken to stop such illegal activities, despite the existence of such activities are reported to MEM authorities,*
- *It appears that the financial resources allocated to ZMO/RMO are inadequate to enable the offices to undertake their duties.*
- *The number of inspections of mines is very limited and underground inspections are frequently prevented due to safety risks, thus jeopardizing the miner's safety and risking environmental pollution.*
- *It appears that a substantial amount of commodities mined are not officially accounted for.*

Conclusions related to the Mining Act, 1998

- The Mining Act does not provide the Zonal Mines Officers with the authority to cancel a license.
- One company operates under a PML (gemstone) but is mining both the alluvials and a kimberlite pipe (the latter is not regarded as gemstone according to the Act, 1998, Sect. 4.)
- The Mining Act, 1998 does not prescribe reports from SML, thus keeping the Zonal Mines Office out of the loop and hampering inspection of the activities.
- How large operations should be allowed under Division D?

General constraints in relation to the administration of the Mining Act, 1998

- Lacking communication facilities between the Zonal Mines Offices (ZMO), the Resident Mines Offices (RMO) and Ministry of Energy and Minerals (MEM) – the Licensing Unit (LU)
- Lacking resources is hampering collections of fees from PML holders
- Topographic maps are very old and scarce; no back up copies
- The procedure for receiving mining reports is not clear. No one knows who has received what and when.
- A large number of mining licenses, within the Restricted Area, are too small preventing even small-scale mines to operate professionally (i.e. some are less than 50 m by 50 m). Mererani Small Scale Mining Blocks are such an example.

Problems observed in the field

- Beacons are not in place
- Beacons related to reserved area - mining blocks – which are government responsibilities - are not in place
- Some PML holders are observed intruding underground on third parties land (The Ministry is informed, but has not reacted on this) – Mererani area
- Illegal mining operations on third parties land – and accepted by MEM officials in the areas.
- Underground safety is a severe problem and appropriate measures should be initiated immediately to address the problem.
- Inspectors and mine technicians avoid going underground due to very high risk.

- Some companies are operating without a license or has been given a wrong license

Additional comments made by the consultants

- Amendments of coordinates are done according to standard practice in the Licensing Unit; however the ZMO/RMO are applying individual procedures; moreover information of such corrections is not exchanged between LU and ZMO/RMO.
- No standard procedures for operations of the GPS instruments
- In general the licensees do not erect beacons – and due to very scarce resources the inspections undertaken by ZMO/RMO are inadequate.
- A substantial number of PML holders are *not* submitting reports.
- The vast majority of the PML's are dormant due to cash constraints and water problems.
- Dealers are supposed to report to the Commissioner of Minerals thus preventing the Zonal Mines Officer to undertake any follow up investigations.
- The existence of "Rush areas" = illegal mining is – in the case of Geita –known to MEM, but no actions are taken despite,
 - a) The operators does not have any type of license,
 - b) The operators are mining within a third parties license area
 - c) The operators are not paying tax, area fees, royalties etc – as follows from (a)
 - d) The operations are beyond any control in terms of safety inspections.
- In the Mererani Restricted Area (tanzanite areas), MEM does not take the adequate measures to prevent underground illegal mining on third parties license.
- The limited resources allocated to ZMO/RMO do not allow comprehensive inspections to be undertaken.
- License holders are not paying the various types of license fees due, unless requested by visiting ZMO/RMO officers; however the resources are too limited to undertake such inspections.
- Apparently the various types of mining licenses (PML, ML and SML) are not very well defined with regard to the capacity and investment of the operation; a few PML operations appeared to be beyond what is reasonable for the definition of a small-scale mining operation.
- It appears to be a striking discrepancy between the amounts of gold produced in the Lake Victoria Zone and the number of dealers/brokers licenses issued in the zone.

1. Introduction

As part of the implementation of the Nordic Development Fund (NDF) funded project component E: Consultancy for the Design of a Mining Cadastre Development Strategy, the Consultant and the Core Team of the Ministry of Energy and Minerals undertook field visits to Arusha and Mwanza Zonal Mining Areas, in the period 17th – 23rd June 2002. The field trip was organised by the Core Team.

The field trip was organised to provide the Consultant with an overall understanding of the practical administration of Mining Act, 1998 and the Regulations, 1999, based on visits and interviews with Zonal Mines Officers, Resident Mines Officers, license holders and private organisations, with the aim to support the design of a Mining Cadastre System.

Participants:

The Core Team, the Ministry of Energy and Minerals:

Ms. L. Mnzava, Project Coordinator, Acting Head Licensing and Mineral Rights Registry Sub-Section

Mr. A.L. Tesha, Project Technical Officer, MSD-TA/NDF Project

The representatives of the Consultant:

Dr. P. Kalvig, GEUS, Team Leader

Dr. A. Hernandez, Kampsax

Mr. Lars B. Nielsen, Kampsax

Assistances:

Additionally the following senior Ministry of Energy and Minerals (MEM) officers provided information to the group and guided them in the areas under their supervision,

Mr. A.M. Magayane, Northern Zonal Mines Officer, Arusha

Mr. Mlabwa, Acting Zonal Mines Officer, Lake Victoria Zone, Mwanza

Mr. J. Nayopa, Resident Mines Officer, Geita

2. Visits Observations

Monday 17th June 2002

The Northern Zone Mines Office, Arusha

- The staff capacity of the office is: 1 Zonal Mines Officer (geologist), 1 Mining Engineer, 3 Mine Technicians, 6 Technicians (of which 3 are gemologists)
- The office has discovered that a certain PML was wrongly located. As a consequence the license co-ordinates were corrected on the license, thus moving the area to the correct position. However, such operation may move the license to a third parties land, and thus violating an existing right. An official procedure for such transaction is missing.
- The office reports the following constraints:
- The office is not allocated adequate financial resources to cope with the inspections required.
- The Mining Act (1998) does not allow the Commissioner to delegate his authority to intervene in disputes to the Zonal Mines Officer, thus some disputes are continuing for too long.
- Lacking communication facilities between the Zonal Mines Office and Licensing Unit – and visa versa – is a severe constraint in daily administration.
- Royalties and annual fees are supposed to be paid to the Zonal Mines office – but lack of resources is hampering the fee collection amongst PML holders.
- Topographical sheets are old and worn out; no spare copies.
- The Zonal Mines Office is lacking the capacity to undertake instant actions in “rush areas”, where illegal mining operations expand very quickly. Typically the first inspection can be made after two to three weeks, and at that time the situation is chaotic.
- The small-scale miners should be provided adequate technical assistance and training. Budget restriction makes it possible to undertake training courses only very rarely.
- About 200 PML out of a total of 600 PML's are located by compass only. Now a Magellan GPS is used (no standard procedures are applied, i.e. time set, map datum, controlling procedures etc.)
- The office receives about 50 PML applications annually.
- Annual budget c. 13 million TSh; annual fees recovered from the area about 4.5 million TSh. This may only be a part of the actual amount, which is due for payment, and which could be collected provided the necessary means were made available to the office.
- Each PML license is drawn on a 1:50.000 topographical master-sheet. However, some areas are about one hectare only, and thus cannot be drawn precisely.
- Net back values: For gemstones gemologist, who inspect all lots going for export, assesses the value! But the remaining – which is the most – is beyond any control.

Longido Gemstone Mine (ruby): GML license.

Underground mining operations. Semi-mechanised operation.

- LU has discovered that one half of the mineshaft is situated outside the license area, thus situated on a third party's PML (gem). There is no official procedure for how to correct such errors. Consequently corrections are negotiated on a case-to-case basis with the involved parties.
- Beacons are not erected ("the Masai's does not allow such structures and will demolish them")
- The mining engineer and the geologist were not aware of the extent of the license in the field.
- The ZMO does not receive any company reports, and does not possess any knowledge about the value being produces. (The monthly production target is 2 tons of ruby (which it is claimed is met), of which about 0,5% is of gem quality (equivalent to about 10 kg); the value was not disclosed).

Tuesday 18th June 2002

Mererani – Tanzanite Blocks (Restricted Area)

Around Mererani village an area has been allocated to small-scale miners (Block B and D) and larger companies are operating on block A and C. The blocks are defined by the government – Restricted Area. The blocks B and D are subdivided in 50 m x 50 m sub-blocks, each of which are granted a PML (gemstone) license. In few cases two or more holders are co-operating on two or several blocks.

- Plot no. 43885: Has been in operation for eight years. Semi-mechanised mine. Though obviously the power plant installation investments are substantial, this raises the question – how big operations should be allowed under Division D? (This question has also been actualised due to the accident on the 20.06.2002 when sadly more than 40 people were killed by suffocation because of a compressor failure. The current operation was reported to take place 120 meters plus below surface)
- The plot size does not allow a proper operation, hence:
 - Waste material is dumped outside the plot (no control and it might even be on some ones license);
 - It appears the most of the plot are mining outside the vertical boundaries of the plot, thus violating third party rights);
 - In terms of underground safety the conditions are severely dangerous and actions should be taken immediately. The narrow dimensions of shafts and addits do not allow comprehensive inspection and surveying.
 - The plot areas are by far too small to allow foreign investors to join forces with a PML holder (and then transfer the license to a ML (gem) except informal financial support resulting of possible fiscal evasion).
- Beacons were not in place on the plot.
- The beacons for the Blocks B and D – a government responsibility – were not found – despite thorough search!

AFGEM Mine (Block C)

Operation under a SML(gemstone).

- More than 95 % of the production is sold on local auctions, attended by international bidders.
- Organised training program for locals in both mining operations and production (incl. lapidary).
- AFGEM is very concerned about underground intruders, operating from surrounding block (B and D). It has officially been monitored (Zonal Mines Office) that a number of 21 addits have crossed the license boundary to AFGEM, of which some are more than 300 meters inside the AFGEM license area. The Commissioner was informed about this in February, but as yet without any consequences. AFGEM takes some of the disputes to the Court, though it normally causes a long delay and only poor results.
- Illegal underground operations carry a great safety risk and should be addressed by the authorities. Information between underground operators about blasting operations is – of good reasons - not conveyed amongst the intruders and AFGEM.

Construction Limited

Mechanised plant for road materials. Operates under a PML (building material)

- It was observed that the quarry was situated outside the PML license area; the license area accommodated only the crushing plant, screening and storage facilities.
- The conditions for the quarry situated outside the license was negotiated directly with the village leadership against financial compensation. This informal procedure is illegal for mining.
- The Zonal Mines Office was not aware of this situation.

KONOIKE (Japanese building material producer) situated next to Construction Limited

- KONOIKE used to operate as a road construction contractor – and for such contractors the Consultant was informed that mining license (building material) is not required, since it is regarded as a Government quarry.
- However, the company now operates as a conventional commercial company – but the appropriate license for mining building materials was not applied for.
- The Zonal Mines Office was aware of this situation – but apparently the issue has been on going for too long due to misunderstanding between ZMO and LU.

Local building material producer situated next to KONOIKE

- The company is a commercial mechanised building material producer. However the company holds only a PPL – for which they have reapplied!! The reason for this mistake is claimed to be due to the communication constraints between the Zonal Mines Offices and the Licensing Unit.

Thursday 20th June 2002

Lake Victoria Zone Mines Office, Mwanza

- The Zonal Mines Office in Mwanza is responsible for managing the overall administration of the region and is assisted by four RMO; in addition the ZMO in Mwanza undertake duties like a RMO for the area around Mwanza.
- Application for PML and PPL license is done through the Resident Mines Offices;
- Apparently neither the Mwanza office nor the Licensing Unit in Dar es Salaam possesses a complete copy of licenses and applications of the entire zone.
- Some of the problems raised by the Zonal Mines Officer:
 - a) Some areas are deforested due to uncontrolled mining activities;
 - b) Irrigation problems occurs due to the shared use of water in agriculture and mining
 - c) Safety problems in relation to mining operations are frequently observed (and also the use of mercury);
 - d) Scarcity of financial and human resources does not allow to undertake follow-up inspections;
 - e) Some PML does not submit the mandatory Company Reports. It was assumed that 50% plus are missing;
 - f) Zonal Mines Offices has no authority to cancel a license, in the event it does not comply with the Mining Act or Regulations;
- Communication between the ZMO, RMO, and Licensing Unit is in general by mail. The lack of fax machine or internet facilities for communication is a great constraint in the daily work.
- Dealers are supposed to submit reports to the Commissioner – not to the Zonal Mines Offices, thus preventing the Zonal Mines Offices to undertake any follow up investigation. The Zonal Mines Officers are visiting PML-license areas about once a month.

Mabuki Diamond Mining Area (Diamond Blocks)

The current PML(gemstone) license is issued in 2000. It consists of 2 neighbouring blocks of 200 x 300m (A) and a larger, polygon (A1). Fences were stolen by villagers and partly installed in areas allocated to other licensees.

The mining set-up is for a mechanised alluvial production, though the equipment is old and not well functioning. The current production is based mainly on manual, artisanal techniques. Workings is on a ground which used to be a Williamson Diamonds operation field, and the main focus of Mabuki is reworking of the remaining part of the mining- and waste dumps. In addition the kimberlite pipe is mined.

- The mine exemplifies the case of diamond mining which classifies as both of the gemstones group and as belonging to the group of “all minerals other than building materials and gemstone”, and thus illustrates the conflict between the two groups, caused by in the Mining Act, 1998.
- The licensee submitted to LU on November 27, 2000, a PML application for a new area. To date he has not yet received any response from the Licensing Unit. The Zonal Mines Office confirmed that he has experienced loss of applications send to the Commissioner. The LU representative has observed no trace of these applications.
- The licensee has not been informed about VAT exemption for mining operations, and has not deducted such expenses in the books.
- The two beacons searched for were found; it is not verified if they are in place.

- On some neighbour PML license areas, artisanal miners are working partly as subcontractors for the holders of the licenses and partly operating illegally.

Friday 21st June 2002

Geita Resident Mines Office

Four technicians are working in the office (one Cat. I; three Cat ii), headed by one Mining Engineer.

Gold exploration and exploitation dominate the Geita area. Within the district area several "rush areas" (illegal mining) are currently active (defined by the office as artisanal miners). The Resident Mines Officer estimates that about 2,500 miners are working illegally in the area, though the number varies over the year.

A total of 80 PL – held by approximately 60 companies - are granted in the Geita area; only about 10 of these licenses are deemed being active. It is not clear if the office notifies holders of dormant licenses.

Over the last couple of years the office has resurveyed about 360 PML's by the means of GPS.

The following observations were made in the interview with the Resident Mines Office,

- Communication between the Zonal Mines Office and the Licensing Unit is severely hampered by the lack of appropriate facilities such as fax machine and internet connection in the office (Internet providers are available in Geita). Thus the office does not receive updated information on licenses and changes of license areas.
- The area to oversee is very large, but the resources are inadequate and do not allow comprehensive inspections and fee collections to be undertaken.
- Topographic maps are old and worn out; no copies or back up.
- The large scale mines within the district consume a large part of the resource allocated to the district
- The office does not apply a specific checklist or routine for mine inspections.
- The Inspectors and Mining Technicians avoid in many places to undertake underground inspections due to the very high safety risk. PML inspection is meant to include safety and health facilities for miners.
- A high number of accidents occur in the district – some of them due to lack of regular mine inspections. Ten death casualties during 2001.
- Environmental issues are difficult to control due to inadequate qualified personnel.
- The office does not possess specific instruments for environmental monitoring (noise, dust).
- Only five PML-holders out of about 400 have submitted quarterly reports for the last period; this figure complies very well with average for the previous periods.
- The office does not receive quarterly reports from SML (since they are not obliged to submit reports); this hampers the inspection and control of operation. On the other hand there is a lack of resource to ensure the complete inspection.
- A very low number of PML's are in operation due to cash constraints and water problems; the number could be as low as 5%.
- A substantial number of the PL's contains several PMLs within the PL.

- Within the district only two dealer licenses are issued and no broker licenses. This contradicts the fact that the district produces a substantial amount of gold.

Meremeta – Tembo Gold Mine

The Meremeta- Tembo Gold Mine holds two PML's for the operation; unfortunately the company went bankrupt during the mine construction period. It appears that the feasibility study provided too optimistic figures.

- Despite the mine set-up is for a medium size underground, mechanised operation, a PML is granted to the company.

Miners Associations Office, Ramagasa, close to the Buckreef Mining operations.

From the discussions the following information was disclosed,

- About 25 PML holders are members of the organisation, out of a potential of about 100 PML holders. Only holders of PML can obtain a membership.
- The representative of the organisation presented the following views,
 - a) No vacant land for further operations; occupied by large-scale PL licenses.
 - b) No information regarding when and where land is due for relinquishment
 - c) Rental fees are persistently rising.

Rush area near Ramagase – Illegal Mining and Violation of Mineral Rights

The same representatives of the Miners Association are also involved in illegal mining operations, taking place within a PL-area. The same group thus violates the following parts of the Mining Act and Regulation,

- a) Mining without a license
- b) Mining within a third parties license area
- c) Avoids payment of tax, area fees, royalties etc.

Due to the fact that the operations are illegal no mine inspections can be undertaken; the lack of actions from the authorities jeopardises also mining safety. Hence the authorities are trapped between the Mining Act on the one side and the mining safety situation on the other side. Avoiding illegal mining activities can only solve this.

The *Consultant* has gained the understanding that the Ministry of Energy and Minerals is comprehensively briefed about the existence of these illegal operations and similar illegal operations elsewhere. Adequate measures to stop illegal mining activities have not been implemented. No compensations are paid to the PL licensees on which ground the illegal activities are taking place.

Area close to Nyarugusu – PML Block Area

The standard block size of the individual PML's are 300 feet times 1,500 feet. All activities are underground operations.

- One PML was granted a tiny piece of land emerging after a field survey proving that two existing licenses did not meet; thus the size of this PML is 28 feet by 1,500 feet. No professional operation can be carried out on such a narrow license without violating of third party's right, on surface as well as underground.
- Waste was disposed randomly in the terrain.
- Some beacons were inspected and retrieved in the field; some were solidly installed, though no name or reference was written on it.
- Due to corrections based on a detailed survey, consecutive blocs of the same size are not contiguous, but are clearly indicated by beacons.
- Only one dealer is registered in the area.
- None of the PML holders would disclose information regarding the dealers they are using.

Saturday 22nd June, 2002

Geita Gold Mine

The Geita Gold Mine holds a SML (13 Km.sq granted in 1999) and several PL situated around the mine area.

Based on a briefing by the Resident Mines Officer we understand that,

- Several PML's situated within the SML have been compensated (paid off in the range of 20 million TSh); one case is pending because the holder requests 165 million TSh in compensation; Geita Gold Mine wants that particular land for disposal of waste – not for mining operations.
- Some villagers want compensation due to claimed environmental hazards created by Geita Gold Mine.
- There are illegal mining activities within the Geita Mining SML and PL areas; Geita has accepted some limited operations, provided that the artisanal miners move out when the areas are due for other uses.

Based on information provided in a meeting with representatives of Geita Gold Mine, we understand that,

- The mine is an open cast, large scale and fully mechanised operation (daily plant throughput c. 25,000 tons; mine feed c. 4 ppm Au, equivalent to about 100 kilograms per day, hence the daily turnover is in the range of US 950,000 \$).
- The company holds about 10 different licenses around the mine area.
- The company conveyed the following complaints about,
 - a) a very long processing time in the Licensing Unit (also complicated by combined licenses in different names (Ashanti, Anglo Gold, Cluff Mining etc.), different processes (old and complementary PL, ML in other areas).
 - b) the current uncertainties regarding overlapping land; there are obvious overlapping land within the "mining area"!

- c) problems identifying a licensee for a certain area of land
- d) the requirements regarding relinquishment of PL, in combination with the fact that no SML can be granted unless a sufficient ore reserve is proven, prevents the company from securing access to a potential satellite operation, which could extend the life time of the mine.
- e) The act is not clear on the following: One PL is due for renewed and thus 50 % of the land shall be relinquished; however the company wants at the same time to apply for a SML. Now – should the relinquishment requirement be based on the remaining part?
 - The company is not sure if beacons are in place, but will take immediate actions.
 - Environmental controls are at the level of best international standards – which means even better than the levels provided in the Regulations. But the company claims that they cannot be held responsible for the pollution stemming from the use of mercury by former artisanal miners.

Nyanza Road Works Ltd. (Mwanza)

The company holds a ML (building materials), granted in 1999. Large-scale, fully mechanised operation specialised in production of road construction materials. The land was originally given to the owner of the company by the municipality free of charge, enabling the company to install its production unit; application for a license followed subsequently.

According to information from the site-manager the license area is about 0.5 sq. km.

- Search for beacons did not reveal any.
- The size of land used for the operation appears to exceed the said area size.
- The holder negotiated with a villager the use of the “surface right” of his farm and compensated him. It appears that the area covered by the holder is confusing the area of the surface right and that of the mining right, which are overlapping without evident and clear limits.

**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-T/ANDF-277-2**

DRAFT FINAL REPORT

October 12, 2002

Questionnaire Responses

Zonal Mines Offices and Resident Mines Offices

RESUME

Report 1, Annex D

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Executive Summary

With the aim to undertake an overall assessment of the capacities and constraints of the Zonal and Resident Zonal Mines Offices, a questionnaire was developed and distributed to all offices. Moreover the questionnaire encompassed questions with respect to common disputes observed. A total of twenty-two questionnaires were dispatched; fifteen offices responded to the questionnaires, providing a representative picture of their situation.

Based on the responses received the following conclusions are made,

Licenses:

- The ratio between the numbers of exploration licenses and exploitation licenses is very unusual with a strong overweight of exploitation licenses, indicating that some areas are not comprehensively explored prior to initiating mining operations.
- The numbers of PML is very high, though the percentage of licenses in default is not known; it appears to be a very high workload resting on the shoulders of ZMO/RMO.
- All zones receive a very high number of applications annually, with a relatively low percentage of concluding grants.

Rush Areas:

- Nine of the ZMO/RMO reports about 36 rush areas (illegal mining activities); thus it may be concluded that illegal mining activities are very frequent

Communication constraints:

- The ZMO/RMO is only informed about a very small percentage of the licenses actually issued. ZMO/RMO offices receive only very few of the compulsory company reports, thus the offices cannot undertake the duties they are legally responsible for.

Most common disputes experienced by ZMO/RMO

- Mineral rights holders against other surface right holders like farmers or villagers.
- Mineral right holders against other authorities like Districts claiming fees from miners.
- Two mineral right holders claiming the right to the same area
- Illegal mining activities in reserves or in vacant land.

ZMO/RMO proposals for administrative improvements:

- The ZMO should be empowered to issue PPL licenses
- Miscellaneous amendments to the Mining Act and Regulations
- The roles of ZMO and RMO should be defined
- The Licensing System should be computerised and LU/ZMO/RMO should be linked via the Internet.

Resources allocated to ZMO/RMO:

- Staffing is inadequate to undertake the required duties of the offices
- Equipment for transportation is inadequate
- Equipment for communication and administration is inadequate.

1. Introduction

According to the Task 1 of the Terms of Reference, the capacity of the current licensing system, including administrative procedures and data flow, functionality, coherence and transparency of the system shall be reviewed and described.

To achieving the necessary information for the assessment, four approaches were undertaken:

- (1) Interview of staff in the Licensing Unit and representative Zonal Mines Offices/Resident Mines Offices
- (2) Interview of stakeholders;
- (3) Field visits to Zonal Mines Offices, Resident Mines Offices and exploration and mining license areas, and discussions with the mineral right holders, and
- (4) Dispatches of questionnaires to all the Zonal and Resident Mines Offices. This report provides a resume of all the latter responses.

2. The Questionnaire Response

The Consultant in co-operation with the Core Team developed the questionnaire. The Core Team undertook the distribution of questionnaires, follow-up, and collection of all responses.

The main aim of the questionnaires was to map possible constraints experienced by the Zonal Mines Offices/Resident Mines Offices (ZMO/RMO) for their daily duties administering the Mining Act 1998 and the Regulation 1999. Moreover the questionnaires should provide qualified statistic figures on mineral rights, to achieving an overall assessment of the total number of licenses issued.

The questionnaire is attached in Report 1, Appendix F.

A total of twenty-two questionnaires were dispatched to all ZMO/RMO (on the July 1st, 2002), of which fifteen have responded (c. 68%); all zones are represented (Table 1).

Table Fejll Ukendt argument for parameter.. *Overview of the Questionnaires responses received*

	ZONAL MINES OFFICE/ RESIDENT MINES OFFICE	Signature on questionnaire	Date of prep.
CENTRAL WESTERN ZONE	* Shinyanga	E.S. Muyinza	11.07.02
	* Kahama	A. Samaje	10.07.02
	* Tabora	J.N. Michael	11.07.02
LAKE VICTORIA ZONE	* Mwanza	D.R. Mlabwa	10.07.02
	* Kayanga	A.A. Mugyabuso	05.07.02
	Geita		
	* Musoma	P.K. Kyakulagila	10.07.02
WESTERN ZONE	* Mpanda	G.N.A. Kasege	04.07.02
SOUTH WESTERN ZONE	* Mbeya	A.D. Sambwe	12.07.02
	* Chunya	P. Masanja	12.07.02
NORTHERN ZONE	* Arusha	A. Magayane	08.07.02
CENTRAL ZONE	Singida		
	* Dodoma	M.Z. Mbasha	17.07.02
EASTERN ZONE	* Dar es Salaam	J. Tindyebwa	11.07.02
	Tanga		
	Handeni		
	* Morogoro	F. Nkwanga	14.07.02
	Ulanga		
SOUTHERN ZONE	Mtwara		
	Nachingwea		
	* Tunduru	W.R.T. Machumu	12.07.02

	*	Songea	K. R. Baruti	09.07.02
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The questionnaire responses have been scrutinised and filtered, and conclusions are presented as generalised statements.

It is the impression of the Consultant that the responses in general reflect the current situation and provide a good picture of the constraints experienced locally.

2.1 Licenses – Numbers and Types

The current number and type of licenses granted for each zone or resident area gives an estimation of the workload of each office. In Table 2 this information is given. It should, however, be kept in mind, that the figures are not accurate due to (a) not all ZMO/RMO have responded; and (b) the offices are not updated on a regular basis by LU. Most likely the figures are higher than indicated in the table, though some may also have been cancelled without proper notification of the ZMO/RMO).

It can be seen from Table 2 that,

- All zones receive a very high number of applications annually (dealers and brokers not included in the table).
- The numbers of PML is extremely high; the percentage of licenses in default is unknown,
- The ratio between the numbers of exploration licenses and exploitation licenses is very unusual, with an overwhelming majority of PML, indicating that some areas are not comprehensively explored prior of going into mining.

Table Fejl! Ukendt argument for parameter.. *The number of mineral rights licenses granted and licenses applied for within each zone.*

	ZMO/RMO	PL/RL	ML	SML	GML	PML	PPL	Appl.
CENTRAL WESTERN ZONE	Shinyanga	41	1	3	1	259	118	79
	Kahama	99	1	1	1	122	190	42
	Tabora	-	-	-	-	-	-	18
LAKE VICTORIA ZONE	Mwanza	45	9	0	0	87	29	148
	Kayanga	12	0	0	0	34	-	24
	Musoma	20	2	0	0	155	29	-
WESTERN ZONE	Mpanda	18	2	-	0	82	3	76
SOUTH WESTERN ZONE	Mbeya	66	9	0	0	122	74	55
	Chunya	76	3	0	0	126	161	151
NORTHERN ZONE	Arusha	4	1	1	4	647	388	359
CENTRAL ZONE	Dodoma	2	1	0	0	31	37	50
EASTERN ZONE	Dar es Salaam	-	-	-	-	568	-	59
	Morogoro	9	3	0	1	57	26	513
SOUTHERN ZONE	Tunduro	11	-	-	9	96	85	254
	Songea	1	0	0	0	60	65	173

TOTAL	480	32	5	16	2446	1205	2001
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2.2 Rush Areas

A rush area is here defined as an area where mining activity occurs without a license; frequently such areas are populated by several hundreds of artisanal miners. Such activity may take place inside or outside a third party's license area or inside a forest or wildlife reserve. However, in any case mining activities not covered by a license are illegal operations, and should be reported to MEM by the ZMO/RMO.

Table Fej!! Ukendt argument for parameter.. Rush areas observed by ZMO/RMO

	ZMO/RMO	Area	Minerals	Remarks
CENTRAL WESTERN ZONE	Shinyanga	Mwabomba – Kahama District	Gold Diamond	Reported to MEM Reported to MEM
		Ngwanoni – Shinyanga District		
	Kahama	5 areas	-	
	Tabora	No info		
LAKE VICTORIA ZONE	Mwanza	Kilombero – Geita District	Gold	
		Kalenge – Biharamulo District	Gold	
	Kayanga	No rush areas		
	Musoma	No rush areas		
WESTERN ZONE	Mpanda	Kasakalawe – Mpanda District	Gold	
		Ntumba – Mpanda District	Gold	
		Ugalla – Mpanda District	Gold	
		Kamalala - Mpanda District	Gold	
		Mtisi - Mpanda District	Gold	
		Mtimba - Mpanda District	Gold	
		Nyenge – Kigoma District	Gem	
		Kitema – Kigoma District	Gem	
		Nyakachacha– Kigoma District	Gem	
		Namanyera – Rukwa Region	Gold	
		Chala – Nkansi District	Gem	
Kantawa – Nkansi District	Gem			
SOUTH WEST- ERN ZONE	Mbeya	Armani – Ludewa District	-	
		Chunya	No rush areas	
NORTHERN ZONE	Arusha	Mererani	Gem	Controlled area
		Maycka Haidom	Gem Gem	
CENTRAL ZONE	Dodoma	No rush areas		
EASTERN ZONE	Dar es Salaam	No rush areas		
		Morogoro	8 areas	-
SOUTHERN ZONE	Tunduro	2 areas	-	Reported to MEM
		Songea	Chengena	-

It is seen from Table 3, that rush areas targeting gold and gemstone/diamonds are very common and widespread. More than 36 rush areas are reported from nine of the ZMO/RMO responding on the questionnaires.

From the responses it can be concluded that only a few offices state that such activities are reported to MEM, though it some may have reported to MEM without stating it in the questionnaire. Several offices report that they normally inspect such areas and recommend the miners to apply for a license (the type of license is not clear, but is assumed to be a PML). However, this is only possible if the area is vacant – and this information is in general not available to the ZMO/RMO. It also transpires from the questionnaires that ZMO/RMO do not have the adequate means to assist a mineral license holder, if he wants assistance to clear a rush area occurring on his license.

2.3 Communication Constraints

The questionnaires reveal the overwhelming difficulties in keeping a tight and frequent communication line open between MEM and ZMO/RMO. The consequences of such constraints are observed in Table 4 and Table 5.

Table 4 indicates that the ZMO/RMO receives only a very small percentage of the compulsory company reports. Though a part of this observed discrepancy between the number of licenses issued within a ZMO/RMO and the numbers of reports received may be due to the fact that the vast majority of the licenses are in default.

Table 5 indicates that only a minor fraction of the licenses issued are copied to the respective ZMO/RMO.

Table Fej!! Ukendt argument for parameter.. *Company reports received by ZMO/RMO in the year 2000/2001.*

	ZMO/RMO	PL/RL	ML	SML	GML	PML	PPL	Not identified
CENTRAL WESTERN ZONE	Shinyanga	-	3	-	-	0	-	
	Kahama	11	0	0	0	0	0	
	Tabora	-	-	-	-	-	-	
LAKE VICTORIA ZONE	Mwanza	30	0	0	0	12	0	
	Kayunga	-	-	-	-	-	-	
	Musoma	-	-	-	-	-	-	
WESTERN ZONE	Mpanda	1	2	-	0	8	-	
SOUTH WEST-ERN ZONE	Mbeya	0	5	0	0	0	0	
	Chunya	0	0	-	-	81	3	
NORTHERN ZONE	Arusha	-	-	-	-	169	-	
CENTRAL ZONE	Dodoma							11
EASTERN ZONE	Dar es Salaam	-	-	-	-	c.25%	-	
	Morogoro	2	2	-	-	23	0	

SOUTHERN ZONE	Tunduro	0	-	-	3	40	-	
	Songea	-	-	-	-	-	-	A few

Table Fejll UkenDt argument for parameter.. Information with regards to issued licenses received by the ZMO/RMO

	ZMO/RMO	Comments on communication regarding licenses
CENTRAL WESTERN ZONE	Shinyanga	Copies not received in time
	Kahama	Not all copies received
	Tabora	All copies received
LAKE VICTORIA ZONE	Mwanza	Not all copies received
	Kayanga	Almost none received
	Musoma	All copies received
WESTERN ZONE	Mpanda	Not all copies received
SOUTH WESTERN ZONE	Mbeya	Not all copies received
	Chunya	Not all copies received
NORTHERN ZONE	Arusha	Not all copies received
CENTRAL ZONE	Dodoma	Not all copies received PL, ML, SML, GML are normally not received
EASTERN ZONE	Dar es Salaam	Not all copies received ML, GML, SML not received
	Morogoro	Not all copies received
SOUTHERN ZONE	Tunduro	Not all copies received ("a very big problem")
	Songea	Not all copies received

The consequence of the random and scattered communication between the Licensing Unit and the ZMO/RMO hampers severely all duties supposed to be undertaken by the local offices and causes that the information provided by ZMO/RMO to customers is not accurate and incomplete.

It is the opinion of the Consultant that such constraints are caused by,

- The communication equipment is inadequate, such as telephone, fax machines, e-mails;
- Office equipment is inadequate, such as computers, printers and photocopiers, and as well a general shortage of stationary consumables is clearly to be seen;
- Directions and routines regarding communication and administration is inadequately described;
- Capacity building- and training programs are strongly needed.

2.4 Common Disputes and Conflicts

The questionnaires report the most common disputes experienced by ZMO/RMO in the local areas. The response have been summarised in the Table 6, from which is follows that the most important disputes are between,

- Mineral rights holders against other surface right holders (inclusive farming)
- Two mineral right holders claiming the right to the same area (including underground disputes and disputes with regards to demarcation)

- Mineral right holders against other authorities, and
- Illegal mining activities

Table Fejll Ukendt argument for parameter.. *The most common disputes and conflict observed by the ZMO/RMO*

	ZMO/RMO	Disputes reported
CENTRAL WESTERN ZONE	Shinyanga	Illegal mining on PL areas
	Kahama	Illegal mining on PL areas Exploration and mining operation on farming land
	Tabora	No disputes reported
LAKE VICTORIA ZONE	Mwanza	Minerals rights holders against surface rights holders Disputes with other authorities
	Kayanga	Disputes with other authorities
	Musoma	Exploration and Mining operation on farming land
WESTERN ZONE	Mpanda	Lack of beacons and no demarcations Exploration and Mining operation on farming land
SOUTH WEST-ERN ZONE	Mbeya	Two parties claiming the right over the same area. (Overlap?) Disputes with other authorities
	Chunya	No disputes reported
NORTHERN ZONE	Arusha	Underground disputes between PLM holders Lack of beacons and no demarcations
CENTRAL ZONE	Dodoma	Overlapping licenses Minerals rights holders against surface rights holders
EASTERN ZONE	Dar es Salaam	Overlapping licenses
	Morogoro	Exploration and Mining operation on farming land Disputes with other authorities Minerals rights holders against surface rights holders
SOUTHERN ZONE	Tunduro	Overlapping licenses
	Songea	Minerals rights holders against surface rights holders

The main types of disputes reported, (i) A mineral right holder against other surface right holders (incl. farming), and (ii) A mineral right holder against other authorities, are both in good accordance with the observations made by the Consultant in the interviews with the stakeholders. Moreover, (iii) disputes between two mineral right holders concerning overlapping areas or illegal mining activities, are reported as a frequent type of dispute; the latter stemming from errors and incomplete records in the current mineral rights inventory.

Table 7 reviews the types of disputes observed between license holders and other government authorities. It appears common that other authorities are charging fees from mineral right holders (mainly PML), - and the Local Government authorities are frequently part in such disputes. This observation is in good accordance with the information gathered by the Consultant in the meeting with the representatives from the Ministry of Regional Administration and Local Government.

Table Fejll Ukendt argument for parameter.. Types of conflicts with other government authorities

	ZMO/RMO	Conflict with local governments authorises
CENTRAL WESTERN ZONE	Shinyanga	Village governments charging fees District council imposing service fee
	Kahama	Local government requires to administer mining activities
	Tabora	No conflict reported
LAKE VICTORIA ZONE	Mwanza	Local Government charging fees (various names fees)
	Kayanga	Local Government charging fees
	Musoma	Local Government charging fees
WESTERN ZONE	Mpanda	Local Government charging fees
SOUTH WEST-ERN ZONE	Mbeya	Local Government charging fees
	Chunya	Local Government charging fees (reported to MEM)
NORTHERN ZONE	Arusha	Local Government charging fees
CENTRAL ZONE	Dodoma	Local Government charging fees
EASTERN ZONE	Dar es Salaam	Local Government charging fees They want to issue licences
	Morogoro	Local Government charging fees
SOUTHERN ZONE	Tunduro	Local Government charging fees
	Songea	Local Government charging fees

2.5 Proposals by ZMO/RMO for Administrative Improvements

The ZMO/RMO was requested to come up with proposals aimed at administrative improvements. The responses varies from office to office, though the following headlines appears to be of a general character (Table 8),

- The ZMO should be empowered to issue PPL licenses
- Amendments to the Mining Act and Regulations, such as reducing the duration validity of PML, and provision for cancellation of PML
- The roles of ZMO and RMO should be defined

The Licensing System should be computerised and accessible and LU/ZMO/RMO should be linked to the Internet.

Table Fejll Ukendt argument for parameter.. Suggestions for administrative improvements made by the Zonal/Resident Mines Offices

	ZMO/RMO	SUGGESTIONS AND REMARKS
CENTRAL WESTERN ZONE	Shinyanga	ZMO should be empowered to grants PPL
	Kahama	No suggestions
	Tabora	No suggestions
LAKE VICTORIA ZONE	Mwanza	Several suggestions regarding the Mining Acts
	Kayanga	Mining Act and Regulations difficult for holders to understand
	Musoma	ZMO should be empowered to grants PPL
WESTERN ZONE	Mpanda	Amendments needed with regards to cancellations of licensing

SOUTH WEST-ERN ZONE	Mbeya	Amendments needed on Section 6(3), 15(4), 91(2) of the Mining Act with regards to penalties
	Chunya	ZMO should be empowered to grants PPL
NORTHERN ZONE	Arusha	Several suggestions regarding the Mining Acts
CENTRAL ZONE	Dodoma	ZMO should be empowered to grants PPL
EASTERN ZONE	Dar es Salaam	Provision for cancellation of PML should be introduced Roles of RMD and ZMO have to be defined ZMO should be allowed to decide in disputes
	Morogoro	The role of the Permanent Secretary should be defined ZMO should be empowered to grants PPL Duration of PLM should be two years in stead of five years
SOUTHERN ZONE	Tunduro	Duration of PLM should be three years in stead of five years Renewal of PL should be accompanied with a report
	Songea	Computerised licensing system and computer network to ZMO/RMO

2.6 Resources allocated to the ZMO/RMO

The resources made available to the Zonal and Resident Mines Offices are reported with regards to (1) Staffing of the offices (Table 9); (2) The available equipment for undertaking inspections and communication (Table 11), and (3) The annual budget of the offices (Table 10).

The questionnaire responses indicate that the offices, staffed by a total of 17 professionals (geologists/mining engineers) assisted by c. 60 technicians, shall attend to c. 4,200 licenses and about 2,000 mineral rights applications annually, though the actual figures differ between the offices. Without going into details it is clear that the local offices with respect to the number of employees, are not staffed adequately to undertake the duties given by the Mining Act and the Regulation.

Moreover the offices in general are not equipped with the adequate office equipment. Hence only about fifty percent of the offices are equipped with computers and telephone; fax-machine is available in one office only. None of the offices are equipped with a photocopier! Apparently all offices have a vehicle – though the standard of the vehicles are not disclosed.

Thus it may be concluded, that (i) the staffing and training, (ii) the equipment for transportation, and (iii) the equipment for communication and administration are not adequate to undertake the compulsory tasks of the offices.

Table Fejl! Ukendt argument for parameter.. *Staffing the Zonal/Resident Mines Offices*

	ZMO/RMO	Min. eng./geol.	Technicians/ Gemmologist	Secretaries/	Drivers and
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				Account- ant	others
CENTRAL WESTERN ZONE	Shinyanga	1 min. eng. 0 geologist	3 tech. 1 gemmologist	0 secr. 2 account.	1 driver
	Kahama	1 min. eng.	4 tech.		1 driver
	Tabora	1 min. eng.	1.tech.	1 secr.	
LAKE VICTORIA ZONE	Mwanza	1 min. eng.	3 tech.	2 secr. 1 account.	1 driver
	Kayanga	1 geologist	2 tech.		1 driver
	Musoma	0 min. eng. 0 geologist	3 tech. 1 gemmologist	1 secr.	1 driver
WESTERN ZONE	Mpanda	1 min. eng.	2 tech.	1. secr.	1 driver
SOUTH WESTERN ZONE	Mbeya	1 geologist	4 tech.	2 secr. 1 acco.	1 driver
	Chunya	1 min. eng.	5 tech.	2 secr. 1 account.	1 driver
NORTHERN ZONE	Arusha	1 min. eng. 1 geologist	7 tech.		1 driver 7 support
CENTRAL ZONE	Dodoma	1 geologist	8 tech.	1 secr.	
EASTERN ZONE	Dar es Salaam	2 geologist	5 tech.	2 secr. 1 account.	1 driver
	Morogoro	1 geologist	5 tech 2 gemmologist	4 secr. 1 account.	1 driver
EASTERN ZONE	Tunduro	1 geologist	2 tech.		1 driver
	Songea	1 min. eng. 1 geologist		1 secr.	1 driver
	TOTAL STAFF	8 min. eng. 9 geologist	59 tech.	24	20

Table Fejll Ukendt argument for parameter.. *Financial Resources*

	ZMO/RMO	2001/2002 (Mio.TSH)
CENTRAL WESTERN ZONE	Shinyanga	No info.
	Kahama	No info.
	Tabora	6.1
LAKE VICTORIA ZONE	Mwanza	15.9
	Kayanga	No info.
	Musoma	8.4
WESTERN ZONE	Mpanda	9.2
SOUTH WESTERN ZONE	Mbeya	10.9
	Chunya	8.0
NORTHERN ZONE	Arusha	14.0
CENTRAL ZONE	Dodoma	10.0
EASTERN ZONE	Dar es Salaam	12.4
	Morogoro	No info.
SOUTHERN ZONE	Tunduro	10.8
	Songea	8.3

Table Fejll Ukendt argument for parameter.. *Equipment*

Zone	ZMO/RMO	Vehicle	Computer	Printer	Typewriter	Photo copies	Tele phone	Fax	Internet			
CENTRAL WEST-ERN	Shinyanga	1	NO	NO		1		NO		N	N	C
	Kahama	1	NO	NO		1		NO	1	N	C	
	Tabora	No info										
LAKE VICTORIA	Mwanza	1	1	NO		2		NO	1	N	C	
	Kayanga	1	NO	NO		1		NO		N	N	C
	Musoma	1	NO	NO		NO		NO	1	N	C	
WEST-ERN	Mpanda	1	1	1		NO		NO		N	N	C
SOUTH WEST-ERN	Mbeya	1	1	NO		2		NO		N	N	C
	Chunya	1	1	1		1		NO		N	N	C
NORTH ERN	Arusha	2	1	NO		NO		NO		N	1	C
CEN-TRAL	Dodoma	No info										
EAST-ERN	Dar es Salaam	1	1	1		NO		NO	1	N	C	
	Morogoro	1	1	NO		NO		NO	1	N	C	
SOUTH ERN	Tunduro	1	NO	NO		NO		NO	1	N	C	
	Songea	1	NO	NO		1		NO	1	N	C	

**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

DRAFT FINAL REPORT

October 12, 2002

Resume – Stakeholder Interviews

Report 1, Appendix E

LIST OF MEETINGS HELD

Ministry of Energy and Minerals

- Zonal Mines Office, Lake Victoria Zone, Mwanza
- Zonal Mines Office, Arusha
- Zonal Mines Office, Dar es Salaam
- Resident Mines Office, Geita
- Environmental Management Sub-Section
- Legal and Fiscal Section
- Tanzania Geological Survey

Vice Presidents Office

- National Environment Management Council (NEMC),
Directorate of Environmental Impact Assessment
- Division of Environment

Ministry of Natural Resources and Tourism

- Forestry and Beekeeping Division
- Wildlife Division

Ministry of Land Use and Settlement

- Commission of Land use and
- Registry, Dar es Salaam Zone,
- Mapping and Survey Division

Ministry of Regional Administration and Local Government

- Directorate of Local Government

University of Dar es Salaam,

- Institute of Resource Assessment (IRA)

Private organisations

- Longido Gemstone Mine, Arusha Zone
- Mabuki Diamond Mine, Mwanza Zone
- AFGEM Tanzania
Geita Gold Mining Limited
- Anglo Gold Exploration (Tanzania) Ltd.
- Resolute Tanzania Limited
- Tanzania Chamber of Mines, Dar es Salaam
- Miners Associations Office, Ramagasa Branch
- Miners Associations Office, Nvarugusu Branch

Abbreviations applied

EIA	Environmental Impact Assessment
ELF	Environmental Legal Framework
LU	Licensing Unit, Ministry of Energy and Minerals
MEM	Ministry of Energy and Minerals
NEMC	National Environmental Management Council
NEP	National Environmental Policy, 1997
PML	Preliminary Mining License
RMO	Resident Mines Office
STC	Cross Sectoral Technical Committee
ZMO	Zonal Mines Office

Executive Summary

In accordance with the TOR, Task 4, meetings have been held with various organisations, institutions and individuals, all stakeholders with regard to the design of a Mining Cadastre Information Management System.

The list of stakeholders was developed in co-operation with the Client, and includes in addition to the Ministry of Energy and Minerals (MEM) three ministries, the Vice Presidents Office, University of Dar es Salaam, and private mining organisations, representing a broad spectre of views such as other holders of rights (i.e. farmers, wildlife, forest, villages, municipalities and local authorities), legal aspects, environmental aspects, and commercial aspects.

The interviews held with MEM staff have revealed that a communication gap between the various sections exists and needs to be addressed, enabling Zonal Mines Offices (ZMO), Resident Mines Offices (RMO), the Environmental Management Sub-section to act in accordance with the intentions of these bodies. As stated elsewhere this constraint is caused mainly be the lack of adequate resources and instructions.

The National Environment Management Council (NEMC) is of the opinion that this office shall assess all granted licenses with respect to their potential environmental impact. Clear definitions of the respective roles/authority of NEMC and MEM with regard to mining should be worked out, and an appropriate system for communication should be established. It is the opinion of the Division of Environment, Vice Presidents Office, that MEM is responsible for informing NEMC about all mining projects requiring an EIA; in general PML operations are exempted from environmental assessments. Communication routines between VP Environment and MEM are in the process of being organised.

Disputes between wildlife interests and mining interests have been observed. An appropriate communication routine should be established to the Ministry of Natural Resources and Tourism, governing forestry and wildlife areas, ensuring that all applicants are aware of their obligations with regard to applications for a license to work within a reserved forest or wildlife area.

Ministry of Land Use and Settlements has experienced many disputes between mineral rights holders and villagers or other lawful occupiers. The boundaries between the various acts hereto need clarification and the appropriate communication lines should be established.

The newest 1:50,000 topographical map sheets were produced in 1993, though many sheets are more than forty years old. The maps are based on a UTM projection and a 1992 datum WGS. Ministry of Land Use and Settlements has the copyright for all 1:50,000 scale maps.

The Ministry of Regional Administration and Local Government conveyed the view that revenues from mining activities should benefit the local areas, and found that they should

be in charge of monitoring the environment. There is a strong need for clarification of these two issues.

The private organisations find that the administrative system in the Licensing Unit is inadequate and that processing of applications is delayed beyond any reasonable standard, and moreover claim to have experienced corruption, fraudulent activities and conflicts of interests.

The Consultant is of the opinion that the implementation of a proper MCIMS will eliminate complaints like those expressed by the private organisations. However, in addition hereto the importance of tight communication lines/routines to the institutional stakeholders should not be underestimated.

Resume of Meetings

Ministry of Energy and Minerals

Tanzania Geological Survey, Dodoma

Date: July 22nd, 2002

Participants: Mr. D. Mcharo, Director and about 30 senior officials; Mr. J. Sarota, MEM and Mr. P. Kalvig.

Conclusions:

A meeting was held with the above participants. Mr. Kalvig presented the project in general and provided background information on 'the cadastre system'. It was the opinion of the survey delegates at the meeting, that in the light of the current process of transforming the survey into an agency the Licensing Unit in the future should be based with the survey, enabling also the survey to undertake the necessary promotion of the country's mineral resources. The Consultant did not comment these views. The Survey's current mineral resource database is based on Visual ProFox, and backup routines are undertaken on a weekly basis. All maps are based on MapInfo. Network is not available; one is PC connected to the Internet. An introduction was provided to the consultant to all the labs, library and to the archive.

Zonal Mines Office, Lake Victoria Zone, Mwanza;

Date: June 20th, 2002

Participants: Mr. Mwalabwa, Zonal Mines Officer, Ms L. Mnzava, Mr. A.L. Tesha, Mr. L.B. Nielsen, Mr. A. Hernandez and Mr. P. Kalvig.

Conclusions:

Four Resident Mines Offices (RMO) are under this zonal office. The Zonal Mines Officer visits each RMO about twice a year. Communication between RMO and ZMO is mainly by mail. RMO communicates directly with Licensing Unit. The resources in terms of equipment, vehicle, communication, staffing and finances are inadequate for coping with all responsibilities of the office. Further details are provided in the Questionnaire Resume. Conclusions from field visit are reported separately.

Zonal Mines Office, Arusha;

Date: June 17th, 2002

Participants: Mr. A. Magayane, Zonal Mines Officer, Ms L. Mnzava, Mr. A.L. Tesha, Mr. L.B. Nielsen, Mr. A. Hernandez and Mr. P. Kalvig.

Conclusions:

The Zone has more than 600 PML's. Discrepancies between the granted coordinates and actual field coordinates are commonly observed. If discovered the coordinates are corrected on the licenses – though no official correction procedure is applied, and thus may cause overlap with a third party license. ZMO is responsible for receiving all royalties and annual rents. Net back value is based on the inspections of all gemstone lots – aimed for

export. The financial resources allocated to the ZMO appear inadequate for undertaking all inspections. Further details are provided in the Questionnaire Resume.

Conclusions from field visit are reported separately.

Zonal Mines Office, Eastern Zone, Dar es Salaam

Date: July 8th, 2002

Participants: Mr. John-Bosco F.K. Tindyebwa, Zonal Mines Officer, two mine technicians, Mr. A. Hernandez, and Mr. P. Kalvig.

Conclusions:

The meeting discussed the distributed questionnaire. It was concluded that the resources allocated for the office was inadequate to undertake the responsibilities of the office. The office complained about the lack of communication with the LU, thus they do not receive information on new licenses issued within the zone. In general follow-up actions on fees due for payment and on due reporting are difficult, because licenses are issued on any date in the month and not on a once-a-month basis. Overlapping licenses is a big issue; the GPS equipment is inadequate for checking the localities. Lacking communication facilities is in general hampering the work of the office. Further details are provided in the Questionnaire Resume.

Resident Mines Office, Geita, Lake Victoria Zone

Date: June 21st, 2002

Participants: Mr. J. Nayopa, Resident Mines Officer, Ms L. Mnzava, Mr. A.L. Tesha, Mr. L.B. Nielsen, Mr. A. Hernandez and Mr. P. Kalvig.

Conclusions:

The district of the Geita RMO is characterised by heavy exploration and mining activity, encompassing also the Geita Gold Mining Company. The area that RMO is responsible for is very large giving logistical problems with regards to inspections. The office does not have the resources to undertake thorough checks with respect to ore reserve calculations, mine grade and tonnage, mill grade and tonnage. The focus of the inspections of the large size mines is mainly safety and working environment. Mining safety is a big issue also for PML operations; last year more than ten people died in accidents. However, due to safety risks the RMO staffs do not undertake underground checks. The office receives only very few of the compulsory company reports. It is the opinion of RMO that about 95 percent of the PML's issued in the area are dormant, due to underground water problems and financial constraints.

Findings on the Field Trip in the area are reported in Field Report Resume.

Environmental Management Sub-Section,

Date: July 1st, 2002

Participants: Mr. H. Mmbando, Head of Sub-Section; Mr. J. Sarota, Mr. A. Hernandez and Mr. P. Kalvig

Conclusions:

The sub-section is recently established and is currently staffed by one geologist (Mr. Mbanda) and one mining process engineer. The resources to the sub-section are not yet determined, though it is anticipated that more staff shall be deployed. It is the aim of the office to undertake inspections ensuring that all mining activities are in accordance with the Mining Act and Regulation. Hence the office shall review all company reports; however the Sub-Section has to date only received very few. They are in the process of setting up proper links to LU, ensuring that the Sub-Section is briefed about all activities. No formal co-operation is yet established with the National Environmental Management Council. It is not clear which office shall be responsible for monitoring areas after mine closures.

Legal and Fiscal Section

Date: July 15th, 2002

Participants: Mr. G. Nyelo, Head of Section, Mr. A. Hernandez, and Mr. P. Kalvig

Conclusions:

The discussion focused on disputes between licensees or between MEM and a licensee. It is the opinion of Mr. Nyelo, that the Commissioner is called upon not less than twice a month, to resolve disputes – most of which are caused by overlaps. Only about two cases annually reach the High Court. None of these have been on issues concerning overlap. The existence of illegal mining operations – the so-called rush areas – was not of great concern to the office.

The Vice Presidents Office

National Environment Management Council (NEMC), Directorate of Environmental Impact Assessment

Date: July 3rd, 2002

Participants: Ms. E. J.C. Karario, Director; Mr. J. Sarota, MEM and Mr. P. Kalvig

Conclusions:

It is the opinion of the Directorate, that *all* mining license holders, in advance of any operation shall submit an application including EIA to the directorate and obtain a grant in order to carry out operations (Ms Karario was not very specific with regards to which Act she referred to). Subsequently all applications are assessed by the Cross Sectoral Technical Committee (STC), on ad hoc meetings; *all* application areas will be visited by STC for on-the-site studies; all costs hereto are carried by the applicant. Last year the office undertook seven field inspection visits concerning mining. Communication and hence co-ordination between NEMC and MEM ought to be established.

Division of Environment

Date: September 9th, 2002

Participants: Mr. R. Muyungi, Assistant Director, EIA; Mr. H. Mbanda, Head of Environmental Management Sub-Section, (MEM), Dr. P.D. Kafumu, Head of Promotion and Statistics Sub-Section (MEM); Dr. P. Kalvig

Conclusions:

The Department of Environment provides mainly policy guidance e.g. the National Environmental Policy (NEP) (1997), and strategies for sustainable mining activities are in preparation. According to the NEP all large (not defined) mining projects shall submit EIA for the assessment of STC. Mr. Muyungi expressed the view that it is the responsibility of MEM to inform NEMC about all mining project requiring an EIA survey; it appears that Preliminary Mining Licenses in general are deemed exempted from EIA. Currently the office receives about twenty mining project application per month. Regional Environmental Offices are about to be established, aimed for monitoring mining operations; co-operation with Zonal Mines Offices is considered.

An Environmental Legal Framework (ELF) for all industrial sectors is in preparation, and might require amendments of the Mining Regulations (1999); the ELF is anticipated completed at the end of the year.

The Department of Environment provides information to the mining industry on subjects related to environmental friendly mining techniques. It is the aim to undertake these activities in co-operation with MEM.

Ministry of Natural Resources and Tourism

Forestry and Beekeeping Division,

Date: July 3rd, 2002

Participants: Director, Prof. Said Iddi, Mr. J. Sarota, MEM, Mr. A. Hernandez, and Mr. P. Kalvig.

Conclusions:

The office administrates about 39 Mio. hectares of woodlands and forest. Mining activities are permitted within the reserved areas but granted on a case-to-case basis (i.e. Geita Gold Mine is situated inside the reserved area). Submission of EIA is required for mining operations. Companies are not paying any fees, but shall pay compensation according to the number of trees cut or damaged. The office does receive company reports from the companies granted permission to operate within a forested or reserved area. No communication procedures are established between the Ministry of Natural Resources and Tourism and MEM, and exchange of information takes place only randomly. The Consultant doubts it if MEM possesses updated maps of forested and reserved areas.

Wildlife Division

Date: July 5th, 2002

Participants: Assistant Director, Mr. Felix Lyimo, assisted by Game reserves, Community Development and Training officers, Mr. J. Sarota, MEM and Mr. A. Hernandez.

Conclusions:

The Wildlife Division is very concerned by the overlap interests between areas with a mining potential and Wildlife reserves. Illegal mining at the border of some Reserves is another concern. Some clarification was provided concerning prospecting and mining operations and licensing systems. They propose to create a joint working group with Ministry of Energy

and Minerals and the Ministry of Natural Resources to solve major issues and improve communication.

Ministry of Land Use and Settlements

Commission of Land use and Planning Date: July 3rd, 2002

Participants: Mr. Shillungwahala Mango Director of Physical Planning, Mr. Katehari Land Use Planner, Mr. J. Sarota, MEM, Mr. L.B. Nielsen, Mr. A. Hernandez and Mr. P. Kalvig

Conclusions:

The aim of the office is mainly to undertake model village planning according to the Village Land Act. The office is, however, aware of a huge number of disputes between mining license holders and villagers, and the representatives anticipate that a large number of disputes are not reported to the Ministries of Land and Minerals. According to the representatives of the office the conflict stems from conflicts between the two sets of acts, the Land Act 9/99 and the Mining Act. Thus, it is the opinion of this office that all mining license holders shall compensate for any land (village land or general land), disregarding the type of mining activities. The said procedure being as follows: Application to be submitted to the District Office (c. 140), followed by visits (the licensee and an officer from the district office) to see the village(s), aimed at negotiating compensation to the villages situated within the license area. The office was encouraged to submit their views in writing.

City- and village plans are made in 1:1,000 and kept at the Regional Offices. The plans are redrawn in 1:5,000 by the Ministry, and subsequently drawn on the 1:50,000 topographical maps. Currently it is estimated that about 2,000 out of a total of 10,000 villages have made a plan.

The latest updated maps applied by the Ministry are from 1993, though many are in excess of 40 years old. The measurements of the titles are conducted with 0,3 m accuracy using a UTM projection for the maps and a 1992 datum WGS for the GPS. The ministry has the copyright for the 1:50,000 topographical maps of Tanzania.

Registry, Dar-es-Salaam Zone,

Date: July 4th, 2002

Participants: Ms Subica Sinda, Assistant Registrar, Mr. J. Sarota, MEM, Mr. L.B. Nielsen, Mr. A. Hernandez and Mr. P. Kalvig

Conclusions:

The office applies the Land Registration Ordinance 334, defining the registration procedure. The new Land Law refers to the same regulation to register the rights defined in the Law. About sixty zonal offices are available for registration of titles. Only surveyed land is registered, amounting to about 20% in Dar es Salaam or equivalent to 40,000 titles. There is no central registration of titles. Titles are registered locally at 6 zonal offices or the 3-7 Regional Offices that each Zonal Offices. Mining rights are not registered, and no conflicts are observed between land titles and mining titles; a few cases of compensations have been registered. The applicant provides his application for registering his right to the Regional

Office. After the approval of the Ministry, the appropriate zonal office registers in their books and send the copy to the applicant.

Mapping and Survey Division (Visit to the mapping Archives)

Date: July 4th, 2002

Participants Mr. J. Sarota, MEM, Mr. P. Kalvig , Mr. L.B. Nielsen and Mr. A. Hernandez

Conclusions:

The mapping Division stores 1:50,000 scale topographic maps covering the national territory. These maps are sometimes 40 years old; some has been updated such as Arusha in 1993. A total of 289 map sheets of 9 towns exist at 1:2,500 scales based on Landsat imagery. Difficult co-ordination with other Ministries induces that boundaries of reserves and villages are not up-to-date. In general the maps are short on information about land use. The maps are available at the selling office though some are out of stock.

Ministry of Regional Administration and Local Government

Directorate of Local Government

Date: 22nd July 2002

Participants: Ms M.K. Tarishi, Commissioner; two senior officials, Mr. J. Sarota, MEM and Mr. P. Kalvig.

Conclusions:

The representatives of the Directorate conveyed the view that revenue from mining activities should benefit the local areas. Currently it is based on voluntary financial contributions made by a few companies; rather they would like to see a fixed percentage of the royalties paid by mining licence holders allocated to the Local Governments. Additionally it was the view of the representatives that the Local Governments should administer all environmental issues. The office was encouraged to submit their views in writing.

University of Dar es Salaam

Institute of Resource Assessment (IRA)

Date: July 3rd, 2002

Participants; Prof. Yanda, Mr. J. Sarota, MEM and Mr. L.B. Nielsen

Conclusions:

Prof. Yanda gave an introduction to the use of maps and GIS in Tanzania as well as an overview of former projects involving GIS, many of which he has participated in himself. There are no digital maps or themes covering Tanzania. The institute had two employees working on digitising satellite imagery at scale 1:2,500 (Landsat 1995 and Landsat 7 1999, 64 scenes). Mainly roads, reserves, forests, rivers and some land use are digitised. The digitising of the infrastructure in Tanzania is close to being completed in 1:250,000, whereas the digitalising in 1:2,500 only covers a fraction of Tanzania (nine cities). The consultants acquired a CD with all the digitised data. The institute is aware of the need for digitised data and is interested in co-operation with other organisations. Projections and co-ordinate system were discussed with little gain.

Private Organisations

Longido Gemstone Mine

Date: June 17th, 2002

Participants: Two representatives of the company (one mining engineer and one geologist) Mr. A. Magayane, Zonal Mines Officer, Ms L. Mnzava, Mr. A.L. Tesha, Mr. L.B. Nielsen, Mr. A. Hernandez and Mr. P. Kalvig.

Conclusions:

The representatives briefed the team about the production of ruby. A summary of this and the findings are given in the report, Field Visit Observations. It may be concluded that, (1) beacons are not in place; (2) a part of the shaft is outside the license; (3) LU does not receive annual company reports; and (4) no information about the values produced are conveyed to LU.

Mabuki Diamond Mine

Date: June 20th, 2002

Participants: The licensee (name not recorded), Mr. Mlabwa, Zonal Mines Officer, Ms L. Mnzava, Mr. A.L. Tesha, Mr. L.B. Nielsen, Mr. A. Hernandez and Mr. P. Kalvig.

Conclusions:

The licensee briefed the team about the production of diamonds and the constraints the company is facing on acquiring the necessary equipment for excavation and for mineral dressing. Two beacons were found in place, but the licensee complained about villagers destroying beacons and fences. The licensee also complained about the long delay in processing applications – in his case more than one year. A summary of the findings is given in the report, Field Visit Observations.

AFGEM Tanzania

Date: June 18th, 2002

Participants: Mr. J. Kimble, General Manager, Mr. A. Magayane, Zonal Mines Officer, Ms L. Mnzava, Mr. A.L. Tesha, Mr. L.B. Nielsen, Mr. A. Hernandez and Mr. P. Kalvig.

Conclusions:

The team was introduced to the production set-up of the mine and was briefed about the production figures. More than 95% of the production is being sold on auctions held in Tanzania and organised by the company. Mr. Kimble complained about the large number of underground intruders (in excess of twenty have been identified), some of which are more than 300 metres inside the AFGEM license area. This not only violates the mining rights of the holder, but is also of great concern with respect to safety. This issue has not yet been addressed, despite reported to the MEM several times. The views of the Consultant are given in the report, Field Visit Observations.

Geita Gold Mining Limited

Date: June 22nd - held at the Geita Gold Mine

Participants: Mr. Jon Hill, Exploration Manager, Mr. J. Nayopa, Resident Mines Officer, Ms. L. Mnzava, Mr. A.L. Tesha, Mr. L.B. Nielsen, Mr. A. Hernandez and Mr. P. Kalvig.

Conclusions:

The Company has taken over some of the PLM's situated within their 'area of interest'; outstanding is one PLM where the outstanding issue is the price of the license (the company wants to acquire the license for disposal of the waste dump, not for mining). Additionally the company has compensated villagers for taking over their farming areas. The company has experienced some rush areas inside their licenses; some groups have been chased away and some groups have agreed to surrender when the area is due for mining. The company is undertaking a thorough environmental monitoring program, following international environmental standards.

It was agreed that the company should submit in writing their views on the current licensing system, in which they find that overlapping licenses and very slow processing are key issues to be addressed. A summary of the findings is given in the report, Field Visit Observations.

Geita Gold Mining Limited / Anglo Gold Exploration (Tanzania) Ltd.

Date: June 28th, 2002 – held at the STAMICO Office

Participants: Mr. Jon Hill, Exploration Manager, Geita Gold Mining Company, Ms. K. Clarke, Commercial Manager, AngloGold, Mr. Dan Hamer, Exploration Manager, AngloGold, Mr. J. Sarota, MEM, Mr. A.L. Tesha, MEM, Mr. A. Hernandez and Mr. P. Kalvig.

Conclusions:

The representatives of Geita Gold Mining Ltd. met with the Consultant and representatives from MEM, in order to learn more about the aim of the NDF project and to submit a report on the company's complaints with regard to the administration of the Mining Act. The critics provided in the company report (Geita Gold Mining Limited, AngloGold Exploration Limited, Discussion Document) are very harsh, encompassing (a) the constraints with regards to human resources, infrastructure and facilities at MADINI; (b) Corruption, fraudulent activity and conflicts of interests; (c) Time delays – Issue and renewal of PL's; (d) Interpretation of the Mining Act 1998 – Prospecting Licenses.

Tanzania Chamber of Mines, Dar es Salaam

Date: July 1st, 2002

Participants: Mr. E. W. Jengo, Executive Secretary, Mr. Ron Clarke, MD, Resolute Tanzania Ltd., Mr. J. Sarota, MEM, Mr. A. Hernandez and Mr. P. Kalvig

Conclusions:

The Chamber of Mines has about fifty members of which about half are exploration- and mining companies active in Tanzania and the other half are entrepreneurs and suppliers to the industry. The Chamber of Mines aired the following views: (a) An open and transparent mining cadastre system is a must in order to develop the mining sector; (b) the current system does not provide access to see which areas are vacant and which areas are taken by whom etc.; (c) illegal mining is a big issue, and it is difficult to get the support from ZMO/RMO to get them out; (d) application processes are in general in excess of 6 months – only rarely it goes down to three months.

Miners Associations Office, Ramagasa Branch

Date: June 21st, 2002

Participants: Representatives of the Miners Associations Office; Mr. J. Nayopa, Resident Mines Officer, Ms. L. Mnzava, Mr. A.L. Tesha, Mr. L.B. Nielsen, Mr. A. Hernandez and Mr. P. Kalvig.

Conclusions:

This branch has about 25 members, all PML holders. In general it was the view of the representatives that the organisation has a very good working relationship with the Resident Mines Office, and finds that they are complying with the current act and regulations. Thus they were astonished to learn that only a very few of them are submitting reports, and only very few are paying fees and royalties. They promised to address these matters. The representatives complained about: (a) It is a common procedure that if a PL holder relinquishes fifty percent of a license, the same person instantly applies for the area relinquished, thus the area is not vacant for other applications; (b) the area fee is too high. The Miners Associations was urged to submit their views in writing.

However, it was observed that the representatives of the Miners Association Office also took part in and directed illegal mining activities on third parties PL land. Further details are given in the report, Field Visit Observations.

Miners Associations Office, Nvarugusu Branch

Date: June 21st, 2002

Participants: Representatives of the Miners Associations Office; Mr. J. Nayopa, Resident Mines Officer, Ms. L. Mnzava, Mr. A.L. Tesha, Mr. L.B. Nielsen, Mr. A. Hernandez and Mr. P. Kalvig.

Conclusions:

The representatives of the Miners Associations Office introduced the team to some of the working PML's. Inspections of some beacons revealed only one plot being properly demarcated. The small size of the plots did not allow a proper organisation of the mining operations and safety is a big issue, which is not properly addressed. Further details are given in the report, Field Visit Observations.

**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

**DRAFT FINAL REPORT
October 12, 2002**

Assessment of the Legal and Regulatory framework

Report 2.1

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List of abbreviations

AOBG	All Other Minerals but Building Materials and Gemstone
BM	Building Materials
EIA	Environmental Impact Assessment
GEM	Gemstones
GML	Gemstones Mining License
MAC	Mining Advisory Committee
MCIMS	Mining Cadastre Information Management System
MEM	Ministry of Energy and Minerals
ML	Mining License
PL	Prospecting License (Reconnaissance and Prospecting included)
PML	Primary Mining License
PPL	Primary Prospecting License
RPL	Preliminary Reconnaissance Period for a PL
RL	Retention License
RMO	Resident Mines Office
SML	Special Mining License
ZMO	Zonal Mines Office

Definitions

Act	for Mining Act, 1998 (no 5 of 1998)
Licensing Unit	for "Licensing and Mineral Rights Registry Sub-Section"
Policy	for the Mineral Policy of Tanzania, October 1997
Regulations	for Regulations, 1999 of the Mining Act, 1998, made under Section 110 of the Act

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Executive Summary

General.

1. In general, the Mining Act, 1998 and attached Regulations, 1999 are in accordance with the Mineral Policy, 1997. However, the practical experience during several years has shown some limitations and difficulties of application that may result in opposite consequences comparing with the objectives stated in the Policy when applying the Act and Regulations.
2. The Legal and Regulatory framework was scrutinised according to a list of topics representing the inventory of the major issues: (i) the application processes with the shortcomings and bottlenecks resulting in negative consequences; (ii) the applicant for aspects concerning foreign investor, eligibility and conflicts of interest; (iii) the different types of licenses and specificities; (iv) the definition of different type of minerals and justifications; (v) the conditionality for granting a Licenses; (vi) the reporting obligations; (vii) the different rights and limitations; (viii) the exclusivity and problems of overlapping rights; (ix) different constraints and obligations related to the obligation of activity, cancellation, change of area, safety and insurance; (x) the demarcation and the co-ordinate system; (xi) the institutional arrangements; (xii) the relations with other stakeholders.

Topics.

3. It appears that the "first come, first served" principle is not properly applied, and that the Minister has a discriminatory role in some cases. The duration for processing an application is not regulated except some rare exceptions. The responsibilities of the Licensing Unit and of the Registrar, as well as the administration, are not considered in a customer-oriented approach. Finally the Bidding process for granting Licenses in a vacant area defined by the Minister for this purpose is not following international standards.
4. The limitation of foreign applicants for Mining Licenses is very easily overcome by the application for a SML. Then the definition of the eligibility of the applicant does not take into consideration conflicts of interest.
5. The types of Licenses defined in Divisions A, B, D of the Act creates a complex matrix to take into consideration all cases. Moreover the use of specificities for Gemstones is questionable.
6. Minerals are classified in categories according to lists where several exceptions make the application problematic, like gold, but also with other minerals included or not in the Act like Petroleum, Radioactive Minerals.
7. Conditions of duration of a License, duration of Renewals, maximum area, obligation of relinquishment are defined by type of License and type of Mineral. The complex matrix is not entirely defined in the Act and Regulations and many specific conditionality make the LU management very complex.
8. The reporting obligations are weak, incomplete, with discriminatory power to the Minister to exempt on the obligations. EIA, or similar simplified environmental requirements are not defined for many types of Licenses, with possible exemption in other cases.
9. Rights of transfer are free but operation should be ensured to certify registration in proper time. Compensation rules are not fully detailed and may contradict articles of

the new Land Law. Finally, rights of lawful occupiers should be managed in a simpler way without involving the Minister.

10. Overlaps and exclusivity rules between existing rights and new application must take into consideration all possible cases of License matrix crosses with type of application. It gives a very complex matrix where all cases are not defined in the Law and Regulations.
11. The obligation of activity is not regulated as an incentive for the holder to start activity. The process of surrendering part of whole area covered by a License is not easy to implement and needs useless authorisations. Cancelling a License is a very heavy centralised process that is proved inefficient. Finally safety rules are not similar for all Licensees.
12. Demarcation is possible without doubt if the same co-ordinate system is used. The regulation does not define the projection to use.
13. The role and responsibility of the Minister shows that he is involved in decisions of an operational level, that he has a discriminatory power eliminating many of the requirements of the Act, than he cannot act as a promoter. A better balance of responsibilities between Commissioner and Minister is recommended. Finally the role even the existence of the Mining Advisory Committee should be considered. Resident Mines Offices are not defined in the Act.
14. The new Land Act, enacted after the Mining Act, uses new concepts of land right and land use holders that may contradict some definitions of lawful occupier and vacant land defined in the Act. This should be corrected in co-operation with the Ministry of Lands. There is no provision in the Act and Regulations concerning the exchange of information with other stakeholders.

Conclusions.

15. The detailed analysis shows that some data are missing or incomplete needing amendment of the Mining Act. Some articles are incomplete, sometimes unclear or contradictory – like the application of the principle of “first arrived, first served”. Finally, some articles related to the discriminatory role of the Authorities, special conditions for some licenses - gemstones for example -, specific restrictions or limitations – pre-conditions, minimum expenditures - should be limited or suppressed when not necessary to improve transparency and efficiency.
16. Some sections of the Act are not in line with the statements of the national Policy – harmonising all statutes, small- and large-scale operations, simple and transparent procedures, harmonising with other land statutes, grouping minerals for facilitating targeting of incentives, skill development or administration. These sections should be clearly amended.
17. The proposed amendments are divided into two types: (i) the revision of certain sections in order to clarify, unify and simplify the Law; (ii) the complements and adjustments in some sections in order to complete missing or correct inconsistent information.
18. Some aspects of the Act represent an old concept of mining acts with respect to the prescribed discriminatory procedures. The complex matrix structure of the Mining Act, 1998, does not reflect the concepts in the international mining law reforms, aiming at simplifying the legal framework, transparency, applying non-discriminatory principles, and as a consequence increasing efficiency in processing applications.

19. The strategy proposed, Strategy B: Mining Act Simplification, induces a reformulation of several sections, and in order to achieve the objectives amendments consider the following: (i) reducing the number of titles; (ii) rights granted according to objective criteria; (iii) exclusivity of the mineral rights; (iv) adjustment of the Regulations accordingly.

1. Introduction

1.1 Generalities

This Report is the conclusions of the Consultants related to Task 2, subtasks 2.1 and 2.1 of the TORs.

According to the TORs, the aim of this task is to analyse the legal framework, targeting on issues and items of direct or indirect relevance for the establishment of a Mining Cadastre Information Management System (MCIMS).

The conclusion presents proposals and suggested amendments, which are provided in the Report: "Proposal – Amendment to the 1998 Mining Act and Preparation of Draft Regulations" corresponding to 2.3 of the ToRs.

It is not possible to make a review strictly limited to the impact of a Mining Cadastre Information Management System. A broader and comprehensive approach is necessary to identify indirect impacts of some changes to a MCIMS. However, issues related to the financial system, the dealers and brokers licenses, and Regulations on Safety and Environment, are not regarded as being a part of the MCIMS, and thus are not dealt with.

The proposed amendments are taking into account the conclusions and resolutions made of the Strategy Meeting, in which Model B was selected for forming the basis of amendments to the Act, and where "Simplification of the Law" and "non-discretionary operations", "exclusivity of rights" and "transparency" are the basic principles.

1.2 The Mineral Policy of Tanzania, 1997

It is important to keep in mind that the fundamental principles for any proposals made are the principles spelled out in the Mineral Policy of Tanzania, 1997. The comments made on the Mining Act, 1998 are referring to the Mineral Policy and are never contradictory to this.

The vision for 25-30 years is based on (i) a well-organised private sector; (ii) a large and small-scale mining industry conducted in a safe and environmentally sound manner; (iii) contributing in excess of 10% of the GDP; (iv) a well-developed gemstone cutting and jewellery industry; and (v) providing dependable employment.

The Mineral Policy is based on two goals:

- Establish an internationally competitive legal and regulatory framework to attract investment;
- Deter information on new discoveries, fight freezing of exploration for speculative purpose and tax evasion.

The strategy to reach this goal is based on some statements that are to be reflected in the Act:

- Harmonisation of all statutes with clear, transparent procedures for granting rights and transfers,
- Harmonisation of small- and large scale mining ensuring transparency and fairness practised by applying “first come, first served” principles,
- Ensuring exclusivity of the licensed areas,
- Encouraging active exploration, discouraging hoarding for speculation,
- Grouping minerals in categories for facilitating targeting of incentives, penalties, skill development and administration,
- Harmonising the Mining Act with other statutes administered by other institutions.

This strategy is the basis for the comments to the Act as well as some other essential objectives spelled out in the Mineral Policy:

- The entire mining industry must adhere to the same environmental standards, with requirements to meet established standards varying according to the scale of operations.
- The Government’s role is to be a regulator, promoter, facilitator and service provider.

1.3 General description of the Mining Act, 1998

The exploration and exploitation of mineral resources (excluding hydrocarbons), and dealing in minerals in Tanzania is governed by the Mining Act, 1998 and the Regulations, 1999.

With respect to exploration and mining, the Mining Act, 1998, recognises the following types of licenses, dealt with in three main groups,

Division A:

Prospecting License (PL)

Prospecting License Recognisance (PLR) and

Retention License (RL)

Division B:

Special Mining License (SML),

Mining License (ML) and

Gemstone Mining License (GML)

Division D:

Primary Prospecting License (PPL) and

Primary Mining License (PML).

The above rights – except GML – are specific for one of the following mineral commodity groups:

- i) All mineral except building materials and gemstones (AOBG)
- ii) Building materials (BM)
- iii) Gemstone (GEM).

Thus the structure of the mineral rights forms a matrix structure composed by (a) the type of license and (b) the type of mineral group.

Mineral rights are granted under the authority of the Ministry of Energy and Minerals (MEM), and applications are processed at the Minerals Development Section (MD), the Licensing and Mineral Rights Registry Sub-section (“Licensing Unit” in the text). A comprehensive analysis of the capacity and mandate of MEM is given in Report P1.

The overall aim of the reform of the 1979 Mining Act, leading to the Mining Act, 1998, was to allow the mining sector to operate under the free market economy schemes.

A great number of the elements and intentions considered in modern mining acts - i.e. first come first served; transferable rights, and free access to the registry of mineral rights, are implemented in the Mining Act, 1998. However, the complexity of the Mining Act, 1998, based on a matrix structure, in which the various combinations have various rights and exceptions, hampers the design and implementation of an efficient application process

A general overview of the main structure of the Mining Act, 1998 is outlined below.

Part I, Preliminary provisions:

- The Act governs all land of the United Republic, though the Act does not apply to the search for or exploitation of petroleum.

Part II, The general principles of the Mining Act, 1998:

- No exploration or exploitation can be undertaken except a Mineral Right is granted;
- Division in eight main types of mineral rights: RL, PL, PRL, PPL, PML, ML, GML, SML,;
- Restrictions on grant of mineral rights; (some rights reserved to Tanzanian citizens: PPL, PML, and GML);
- Mineral rights are transferable and mortgage able;
- The Minister may enter into a development agreement;
- First come first served principles;
- The Minister may designate any vacant area for tender for PL, ML, GML;
- The Minister may designate any vacant area as an area reserved for operations under Division D (Primary Licenses).

Part III, Administration:

- The appointment of a Commissioner for Minerals and Deputy Commissioner;
- The geological services to be undertaken;

- The appointment of the Mining Advisory Committee (MAC);
- The establishment of the Zonal Mines Offices (ZMO).

Part IV, Mineral Rights:

- Division A: Prospecting License (PL), Prospecting Recognisance, (PLR) and Retention License (RL);
- Division B: Special Mining License (SML), Mining License (ML); Gemstone Mining License (GML);
- Division C: Supplementary provisions affecting Mineral Rights under A and B;
- Division D: Primary Licenses (PPL, PML).

Part V, Licenses for dealing in raw gold, gemstones and other minerals:

- Dealer's license, including application, grant, duration, renewal, rights, obligations;
- Broker's license, including application, grant, duration, renewal, rights, obligations.

Part VI, Financial Provisions:

- Royalties (fixed percent) and charges.

Part VII, Restriction reports and the right of entry:

- Security of gold and gemstone mining operations;
- Restriction of rights of entry of the license holder;
- Holders of PL and PPL shall not remove minerals;
- Reports and information;
- Authorised officer's power of entry.

Part VIII, Disputes:

- The Commissioner may decide disputes (on overlaps, constructions, payments);
- Enforcement of the Commissioner's orders;
- Appeals.

Part IX, Registration of Mineral Rights:

- The Commissioner shall maintain a central register of all Mineral Rights, and cause similar registers to be maintained in each Zonal Mines Office;
- Evidentiary provision.

Part X, Miscellaneous:

- Restrictions on export and import on radioactive minerals;
- Transfer of control over company (written consent of the licensing authority is requires);
- Insurance and indemnity;
- Regulation – the Minister may make regulations for the better carrying into effect the Mining Act, encompassing i.e. application forms, fees, charge, rent, due, royalty, procedures for tenders, allocations of reserved land for

PML, proper, efficient working and avoidance of wasteful practices, safety standards and practices, inspections.

Part XI, Repeals, savings, transitional and temporary provisions:

Repeal of the Mining Act, 1979.

Schedule 1: Made under Section 20:

Mining Advisory Committee.

Schedule 2: Made under Section 94:

Saving of existing controlled areas and diamond protection areas.

Schedule 3: Made under Section 99

Part I: Reports and records;

Part II: Provisions for obtaining information.

Schedule 4: Made under Section 114

Savings and transitional provisions in respect of the repeal of the Mining Act, 1979.

Schedule 5: Made under Section 115

- Part I: Repeated laws;

- Part II: Transitional and savings provisions.

1.4 General Description of the Regulations

The following general description of the Regulations encompasses only the Mining Regulation, 1999 (Sect. 1 through 18), defined under Section 110 on the Act, which encounters mainly duties and obligations to be followed by an applicant of a mineral right, and thus the list of obligations for the applicant may be regarded as a checklist for the application procedures. The following are provided:

- a) Mode of application
- b) Shapes of areas
- c) Size
- d) Demarcation and pegging
- e) Renewal
- f) Minimum expenditures
- g) Account requirements
- h) Fees and rents
- i) Suspension
- j) Amalgamation (merging of areas of two or more contiguous licenses)
- k) Conversion of PML to other licenses
- l) Surrender of PML
- m) Information and reports
- n) Reserved areas
- o) Assignment of Mineral Right

p) Overlapping applications

The First Schedule of the Regulation provides the fees and rents to be paid by mineral right registration applicants and license holders.

The Second Schedule lists the Application forms and some of the license certificates.

2. Comments by topic

2.1 Introduction

This chapter inventories all comments concerning the Mining Act and Regulations. For clarity reasons, the comments are classified by topics as follows:

- The application process, related to the sections describing the licensing applications procedures
- The applicants, related to the nationality and eligibility;
- The types of license, commenting on the classification of the different Licenses;
- Conditionality for granting a License
- Reporting obligations;
- Rights for Building Material Licenses
- Compensations issues
- Overlaps and exclusivity of the Mineral Rights
- Obligations of the Licensee
- Demarcation and coordinates
- Institutional arrangements and responsibility of different officers and offices in MEM concerning License management
- Relations with other stakeholders

The following description does not intend to be an exhaustive and detailed account of all the topics developed in the Mining Act, 1998 and Regulations, but focuses on the issues which have an impact on the implementation of Strategy B.

The reference to sections is given as "Section x" or "Section x(y)", x being the section and y the sub-section numbers.

2.2 The application processes

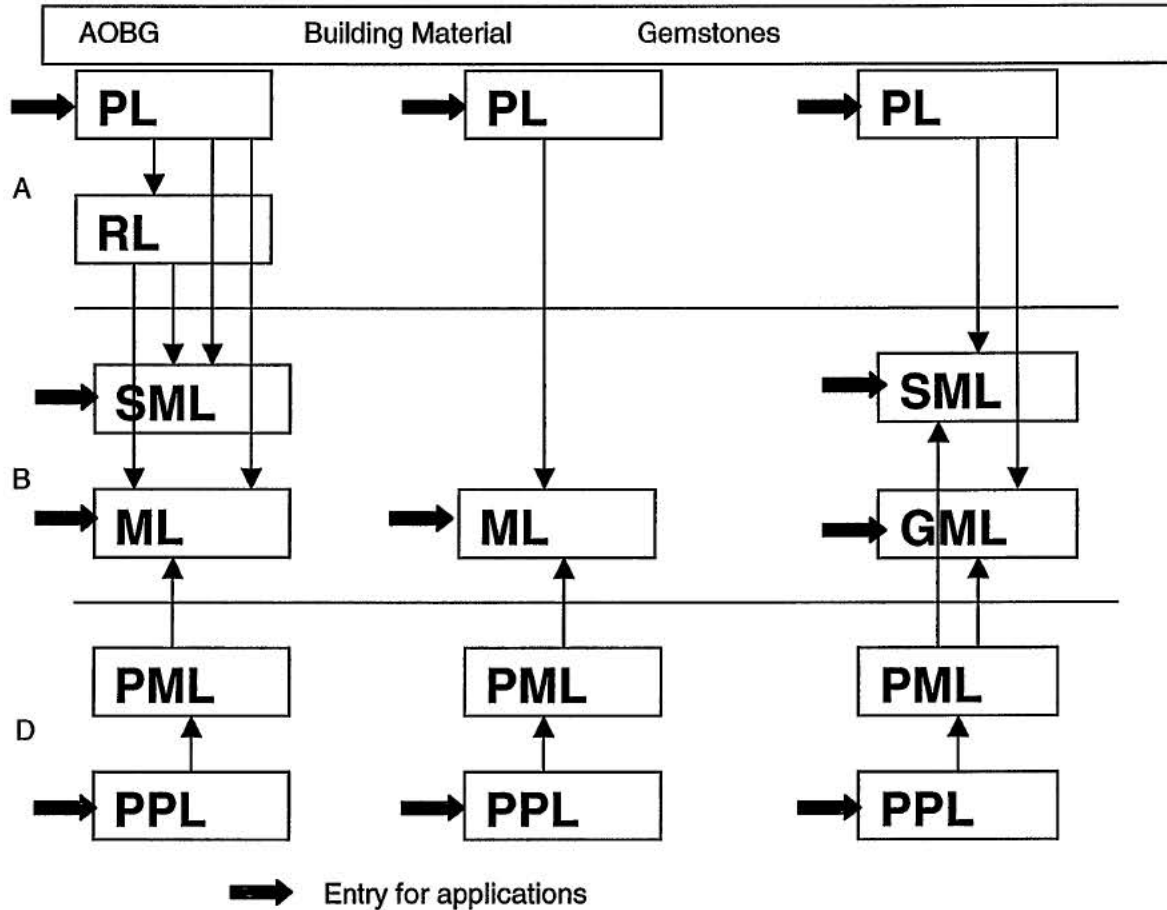
This chapter deals with the general description of the application procedures as defined in the Act. Some essential aspects are specifically studied: (i) "first come, first served" principle, (ii) the constraints and responsibility of the Licensing Unit, and (iii) the bid process in case of tenders.

Some contradictions or incomplete information are identified and amendments suggested.

2.2.1 General procedures

Diagram 1. *General processes for application of a mineral right.*

The relevant sections in the Mining Act, 1998 are given as A, B, and D in the left column.



An Applicant can apply for 8 different types of Licenses. Conversions from Prospecting License to Mining License or from Division D Licenses to Mining Licenses are authorised according to the Diagram (see arrows).

The processes are subdivided into Building Materials (BM), Gemstones (GEM) and All Other Minerals but Building Materials and Gemstone (AOBG) (See definitions chapter 3.4). Each of the eight types of licenses, including GML, is granted with the required additional specification of the type of mineral (see details chapter 3.3).

This diagram does not describe the event that a holder of a Prospecting License applies for a Mining License of a new type of mineral, since this is not considered as conversion of a License, but rather a new application for a new License.

Some details in the application processes are commented in the next chapters. They relate to the "first come, first served" principle, the duration of the application process, the respon-

sibility of the Licensing and Mineral Rights Registry Unit (called "Licensing Unit" in the text), and the Bidding process on area declared vacant by the Minister.

2.2.2 First come, first served

The section 12 (2) states that two applications are deemed to have been received simultaneously if they have been received the same day by an authorised officer or by an officer appointed by the Commissioner. The Minister shall determine the priority. This basic principle of 'first come, first served' as stated in the Policy, is not transpired clearly in Sections 24 and 12 (2).

The justification for such a section may be the effect of communication constraints between LU and the ZMO's, as well as the administrative practice to "register the next day".

Moreover, this section creates several problems:

- The Section 24 requests the registration of the date and time. It is then inappropriate to determine the priority by day. The "first come, first served" is evidently to be applied;
- The decision of the Minister to determine the priority is a discrete power to high-level authorities that does not guarantee the granting of rights on objective criteria. That must be replaced by a clearly defined standard process (date and time);
- Section 24 (4) and (5) defines the process of registration of the application as "registered in the register maintained for such application". There is no clear description of this register neither in the Act nor in the Regulations and the administration uses generally the Entry Register in MEM. There is no indication if a registration in a Zonal Mines Office is valid, and if the registration date/time is the one achieved in the ZMO or Licensing Unit.

2.2.3 Duration of the application process

The Mining Act and Regulations do not provide any indication or obligation of duration in the processing of an application. Curiously, Section 30 is an exception where it is stated that four weeks and six weeks are respectively the maximum duration for the administration to grant a PL and for renewal of a PL:

- Section 30 (1). No later than 4 weeks from the date on which the PL application is registered, the Licensing Unit shall
- Section 30 (2). No later than 6 weeks from the date on which the renewal application is registered, the Licensing Unit shall

Miscellaneous comments:

- This maximum duration should not to be limited to one type of license only. It must be a restriction relevant for all types of licenses;
- There is no legal description of what happens in the event the licensing authority is not granting the License in the prescribed time. Is the License then

automatically granted? Can the applicant commence prospecting without the license?

Inversely, the license holders have in some specific cases to comply with a timetable to present a renewal application:

- Section 42:A holder of a SML may, not later than one year before the expiry, apply for renewal.
- Section 69:Not later than 3 months before expiry, the holder of a PPL may apply for renewal.

Similar comments apply:

- The statement should be defined for all conversion of License identified by vertical arrows in Diagram 1 and in renewals identified in the duration / renewals of Diagram 3.
- It must not contradict the preceding statements. For example, why ask for three months in advance if the Licensing Unit should grant the right in 6 weeks?

2.2.4 Responsibility of the Licensing Unit

The preceding sections relate to the responsibility of the Licensing Unit to act according to the Act and Regulation. In a more general view, an essential statement in Section 22 says that: "No officer of the Ministry shall be liable for anything omitted to be done bona fide".

Some countries have a totally different approach on this; i.e. the Mining Act of Peru defines "administrative silent" (the non-action of the administration), which is not suppressing the responsibility of the civil servant in charge of realising the required functions.

In a traditional Registration System (like the property rights registration system), the security is provided to the customer by extracts certified by the Registrar engaging the responsibility of the Registration Authority. In case of error "bona fide", the applicant is compensated.

For example, concerning the issues of maximum duration to grant a license, Section 22 gives the possibility to the officials to overcome this restriction without any consequence. In other terms, it is of no use to define time limits for the administration without clarifying the limits of the responsibility of this administration.

2.2.5 Bidding process

The Mining Act, 1998 provides the possibility to the Minister to declare a vacant area subject to one or several Tenders for granting prospecting or mining license. The issue of the definition of a vacant area is described in the chapter related to the interface with other stakeholders.

Sections 62 (3) defines a process of evaluating the proposals and granting the right which is fully at the discretion of the Minister. The role of the Mining Advisory Committee (MAC) is only to propose a report to the Minister who shall decide based on three criteria:

- The program of prospecting or mining and the commitments of the bidder;
- The financial resources of the bidder;
- The previous experience of the bidder in this activity.

This process is based on the discretion of the Minister. It is not clearly following international standards and principles of selecting proposals based on tenders like full transparency, avoiding conflicts of interest, fair and open competition, information to all bidders.

The bid process should follow international standards with public opening, nomination of an Evaluation Committee, evaluation report based on pre-defined criteria, proposal of granting license, approval (Minister, Commissioner...) and starting negotiation based on the proposal.

The role of the Mining Advisory Committee is questionable, because the evaluation can be made by members nominated for this purpose in short-term, not permanent members of an Advisory Committee.

2.3 Applicants

This chapter details the conditions of the Act concerning the foreign investors, the eligibility of the applicant, and the conflict of interest.

2.3.1 Foreign investors

Table Fejl! Ukendt argument for parameter.. *Minimum share of Tanzanian citizens (grey field means not applicable)*

License	AOBG	BM	GEM
PL			
RL			
SML			
ML/GML			25%
PPL	100%	100%	100%
PML	100%	100%	100%

Generally, the Mining Act, 1998 allows foreign investors to apply for prospecting and mining licenses except in two cases:

- PPL and PML, considered as small-scale mining or prospecting licenses limited to Tanzanians. It is supposed that this category of licenses was created to define and implement specific supports to local small-scale miners – so-called artisanal miners (Given in Division D)

- Section 8 (3), Division B defines a limitation for foreigners to share a maximum of 75% for Mining License for Gemstones. This restriction on potential foreign investment in gemstone mining using a ML necessitates foreign companies to apply for a SML for Gemstones. A SML is negotiated individually and hence it may be difficult to satisfy the terms offered by the Minister.

The restriction on foreigners with regards to gemstone mining is not justified in statements of the Mineral Policy, but aims at promoting local activity, developing local skills and supporting joint ventures. But it is not clearly in accordance with the Mineral Policy that recommends standardisation.

Moreover the SML process to be followed by foreign investors to overcome this restriction provides non-standards contracts, creating opacity and inducing future difficult monitoring, and thus possible conflicts with the aim of transparency.

2.3.2 Conflicts of Interest

The general conditions of non-eligibility are described in Section 8:

For individuals:

- If under 18 years old;
- In bankrupt or using rights to compensate creditors.

For body corporate:

- In liquidation
- Order of dissolution by a court, and
- Making arrangement with creditors.

Some complements are provided in the appropriate sections concerning limited rights to foreigners.

The non-eligibility of persons or body corporate making arrangement with creditors is certainly justified by the will to grant a right to the person or body having the financial capacity of prospecting or mining and avoiding to use this right for a speculation purpose.

The important issue of Conflict of Interest is not dealt with in the Mining Act, 1998 – as opposed to all modern Mining Acts in the World, prescribing that officials of the issuing authorities and bodies involved are not considered eligible applicants and can not get a license.

The Commissioner is defined as a Land Judge in Section 101 and consequently should not be an eligible applicant. Further both the Commissioner and the Minister (or persons appointed by them) are involved in all parts of processes where it is up to the discretion of either of them, and thus such persons should not be eligible applicants.

It is necessary to add such an article to avoid conflicts of interest with officials who could be judge and party in the licensing process.

2.4 Types of license

2.4.1 Categories of Licenses.

The licenses are divided into three categories:

- Prospecting licenses and Retention Licenses (Division A)
- SML, ML and GML (Division B)
- Primary Licenses (Division D).

Division A defines Prospecting License (Section 24-33), Reconnaissance Prospecting License (Section 25), and Retention License (Section 34-37)

Division B defines Mining License (Section 46-50), Special Mining License (Section 38-45) and Gemstone Mining License (Section 51-55).

Division D defines Primary Prospecting License (Section 65-66) and Primary Mining License (Section 67-72).

Each type of License is defined for one of the three types of minerals: Building Materials (BM), Gemstones (GEM) or All Other Minerals but Building Materials and Gemstones (AOBG), defined in Section 4 and commented in chapter 3.5.

Section 39 states that a Special Mining License is granted for the mining of minerals, excluding gemstones other than gemstones included in the program of mining operations. It means that a License can be granted not only for one of the three types of minerals, but also for one specific mineral. The rules of exclusivity of the rights means that another mineral will not be exploited in an area where a type of mineral (or one specific mineral) is specifically authorised to be mined.

This creates a very complex matrix to take into consideration all possible cases, with the risk – demonstrated in Chapter 3.5 (Conditionality) and Chapter 3.8 (Exclusivity) – of missing information or undefined rules. A simplification is recommended to ensure exclusivity and to ensure that effective monitoring of the exploration and mining activities can be maintained.

2.4.2 Specificities for Gemstones

Special rules apply to the activity of prospecting and mining gemstones.

Sections 51 - 55 define the Gemstone Mining License. It is remarkable that these sections are very similar to Sections 46 - 50 concerning Mining Licenses, with few adjustments and different presentation or sequential order. Hence it appears meaningful to merge the GML with the ML adding just some special conditions to mining gemstone if deemed appropriate.

The GML is the only License, which cannot be renewed, Section 29(3). This appears not justified by neither technical explanation or by the Mineral Policy.

Section 32 (3) provides the holder of a GML a unique right of selling gemstones discovered during the prospecting phase without applying for a Mining License. This specificity for gemstones does provide the possibility to achieve a cheap license (PPL fees are low comparing to SML/GML fees) in order to sell gemstones without getting the more expensive and restrictive GML.

The aim of this section is to support the artisanal (legal) miners to initiate mining activities, but the legal aspect is questionable because it does not clearly comply with the Mineral Policy of harmonising Licensing systems.

2.5 Type of Minerals

2.5.1 Definitions

The types of minerals are defined in Section 4 of the Act.

The definition is based on a list of minerals. The Consultant has no specific comment on the suitability of this list. However, in general, a list is not the best way to define a legal term. In the case of minerals, several problems are identified:

1. The subdivision in multiple cases increases the difficulties of administrating the Act and monitoring the activities by the Licensing Unit staff.
2. A list is always incomplete and changes in the list are decided by notice of the Minister with publication in the Gazette. This process is probably slow compared with the business activity that requires urgent actions;
3. The proposed classification creates inappropriate different classification of “diamond” depending on the geological occurrence of the diamonds (kimberlite versus alluvial);
4. Changes may modify the type of some Licenses already granted (for example a License for “other mineral” is changed to a License for “gemstone”);

The Mineral Policy proposes: “grouping minerals into categories for facilitating targeting of incentives, penalties, skill development and administration”. The subdivision in categories must be justified by one of these four targets, not by technical considerations.

It seems that the final objective of facilitation is not reached when the subdivision imposes that all cases must be legally treated without special target. For example, Section 32 is very complicated, with many administrative constraints (the License applies to specific minerals with some exceptions, the exclusive right not extendable to any minerals, selling authorised for a prospecting license for gemstones). These exceptions make the monitoring of all types of Licenses and their interaction heavy, with the risk of absence of instruction or definition for several cases (see Exclusivity chapter 3.9 for example).

2.5.2 Petroleum

Section 4 defines the term “Petroleum” as referring to the “Petroleum Exploitation and Production Act 1980”. In absence of studying this Act, there is a need of co-ordination to solve issues of overlapping rights of the same nature and defining priorities and exclusivity.

The Mining Act, 1998 excludes areas on which a search or production of Petroleum is taking place (Section 3), despite that Petroleum licenses are not part of the Mineral Rights Inventory, and then this type of information is not available to the Licensing Unit.

It induces that a Petroleum License has a priority against any type of Mineral License. The case of authorisations to prospect /mine at a minimum distance from a petroleum plant confirms this priority. The question – not studied here – is processing this priority when Oil or Gas is discovered in a Prospecting or Mining area (is the License updated and its area reduced by the area allocated in prospecting / exploiting Oil?)

2.5.3 Radioactive Minerals

Section 107 refers to the definition of a “radioactive mineral”. It is defined as a percentage of weight of defined radioactive minerals in a combination of minerals. It is in this case easy to mix the radioactive mineral in with more other minerals in case of reaching the tolerance. It could be useful to co-ordinate with experts to define a maximum tolerance in radioactivity units.

The application defined in Section 107 (2) applies exclusively to import / export License. It is supposed to be identified for safety reasons. In this case the limitations or controls should be extended to mining activity.

If the motivation is strategic, it should be defined in a national text, not in the Mining Act.

No details concerning prospecting or mining are given in the Section 107. It is supposed that these minerals enter the group AOBG.

2.6 Overlaps and exclusivity

The complexity of the type of Licenses and their interactions made necessary the description of many legal cases of possible overlap that have no relation with the objectives of the Mineral Policy. The risk of missing cases is important. As a consequence, it makes the management of these articles opaque, complex and finally it impedes the implementation of clear statements of the Mineral Policy:

- “Clear, simple and transparent procedures”;
- “Harmonising small-scale and large-scale mining operations”
- “Ensure exclusivity of licensed areas” section 3.3.3 of the Policy.

The main example is shown in Table 5, describing the very complicated combinations of exclusive rights, which may occur between various types of applications and various types of existing rights for the same area.

An application can be submitted for an area for which a License has already been granted or for which an application has already been submitted (covering for the whole area or a part of it). The overlap of the new application and existing rights (including another application for the same area where the right “first come, first served” applies) should be solved by the “exclusivity” rules, defining clearly which one of the application or the existing license has the priority (exclusivity), or if overlaps are authorised in certain cases.

In table 2, three scenarios are listed, based on the scattered information given by the Act:

- The application has the priority, and the existing right is cancelled for the area applied by the applicant. (Y)
- The application must be modified and the area reduced according to the boundaries of the existing rights. (N)
- In many cases such information is not provided by the Act.

Table Fejl! Ukendt argument for parameter.. Exclusivity of licenses – applications versus granted licenses. This table is based on information of Sections 13, 14, 28, 37, 48, 58.

Applica- tion	PL Re- con	PL AOBG	PL BM.	PL GEM	RL	SML	ML	GML	PPL	PML AOBG	PML BM	PML GEM	Ten- der
PL recon													
PL AOBG	Y ⁽¹⁾		Y	Y					Y ⁽²⁾	Y ⁽²⁾			N
PL BM.	Y ⁽¹⁾												N
PL GEM	Y ⁽¹⁾												N
RL													
SML		Y	Y	Y	Y	N	N	N	Y	Y	Y	Y	N
ML		Y	Y	Y	Y	N	N	N	Y ^(2,3)	Y ^(2,3)	Y ^(2,3)	Y ^(2,3)	N
GML		Y	Y	Y	Y	N	N	N	Y ^(2,3)	Y ^(2,3)	Y ^(2,3)	Y ^(2,3)	N
PPL													
PML													

(1) – provided it is not demarcated

(2) – provided it is not designated as an area reserved for primary Licenses PPL, PML (Division D)

(3) – not tender shall invite if the area is designated as an area for which applications

Applicant overrules existing license in terms of exclusivity: Y

Applicant does not overrule existing license: N

The column “existing right” called “Tender” means that the area is declared vacant and reserved for tender processes. For example, an applicant may apply for a Mining License on an area declared for Tender process.

An application submitted for a tender process must refer to a declared vacant area. However, it is possible that rights were not identified at the declaration of the vacant area. This case is not studied here because though theoretically possible, it does not legally exist, according to the definition of the vacant area.

The right of exclusivity is guaranteed but overlaps between applications and existing rights are not legally defined in all the cases. In order to define if the new application overrules existing mineral rights, it is necessary to complete the regulation because many cases are not identified in the Act and Regulations, and the conditions of exclusivity not clarified.

Many of the unsolved cases stems from the complexity of the Act. The completion of this table should be done in a different way:

- In the heading of the Act, indicate clear principles of exclusivity (or non-exclusivity);
- For each type of application, clarify the exclusivity rules against all type of Licenses.

The easiest way to solve the issue is to simplify the Act and reduce the number of combinations of Licenses / types of minerals to a minimum.

2.7 Conditionality

2.7.1 Duration of a license

The two following tables detail the maximum duration of each type of License (Table 3) and the possibility of renewal and the maximum duration of renewals of each type of License (Table 4).

The Tables 3 and 4 are based on information from Sections 29, 35, 40, 42, 46, 50, 51, 55, 65, 68, and 69. The tables indicate that certain combinations are not catered for in the Act.

The duration for a License or its renewal is 1, 2, 3, 5, 10 or 25 years, depending on the combination of License and the type of minerals and the process. Renewal is allowed once only, or several time or not allowed at all. Such complexity makes the management of the cadastre system very difficult.

Table Fejl! Ukendt argument for parameter.. *Duration of licenses*

License	AOBG	BM	GEM
PPL	2y	2y	2y
PL	3y	3y	2y
RL	5y		
SML	25y		25y
ML/GML	10y	10y	10y
PPL	1y	1y	1y
PML	5y	5y	5y

Legend: **bold**: maximum duration in years for the type of license

Normal: maximum duration in years for the renewal of the license

Grey colour: Not applicable

Table Fejll Ukendt argument for parameter.. Duration of renewals

License	AOBG	BM	GEM
PL	2y+2y+ny ⁽¹⁾	2y+2y+ ny ⁽¹⁾	NO
RL	5y ⁽⁵⁾		
SML	25y ⁽⁵⁾		25y ⁽⁵⁾
ML/GML	10y ⁽⁵⁾	10y ⁽⁵⁾	10y ⁽⁵⁾
PPL	1y+1y+... ⁽⁴⁾	1y+1y+... ⁽⁴⁾	1y+1y+... ⁽⁴⁾
PML	? ⁽²⁾	? ⁽²⁾	? ⁽²⁾

1. n: no fixed duration in the Act or Regulations
2. ?: duration not defined
3. no renewal
4. unlimited number of renewal
5. One renewal only

It is the view of the Consultant, that such limitations are not justified and makes a constraint rather than a real incentive to develop mining in Tanzania. For example, the Prospecting License for AOBG has a three-years duration and an indefinite number of renewals of two years (each with 50% relinquishment), a Prospecting License for gemstones is granted for two years instead of three years for AOBG; a Primary Prospecting License is granted for one year but can be renewed every year.

In the case of a Prospecting License (Preliminary reconnaissance) this is limited to a period not exceeding two years, and is restricted to AOBG only (Section 25). Another special case is defined in Section 31 (2) with a possible prior "period of preparation" of 6 months. That shows that the durations, even technically well defined, cannot take into consideration all specific problems and that regulating on variable length of durations is an unfeasible and unrealistic exercise.

It is noted that renewal of Primary Mining Licenses may be granted, but that no section or regulation defines the maximum of years.

In summary these technical restrictions are providing administrative constraints, and it appears that nothing is gained in return.

A simplification and standardisation will facilitate the monitoring and control of licenses – even with a small number of skilled staff.

2.7.2 Maximum area and shape of area

The Regulations define maximum area only for some License combinations.

Table Fejll Ukendt argument for parameter.. Maximum area size authorised by type of license

License	AOBG	BM	GEM
PRL		5000km2	
PL	200km2	1km2	10km2
RL	?		
SML	?		?
ML/GML	10km2	0.5km2	1km2
PPL	10ha	2ha	?
PML	10ha	2ha	10ha

The information in Table 5 is an extract from Regulation no 5 Part I Section 5.

There is no indication of a maximum size for a Retention License, for a Special Mining License in any case and for a Prospecting License concerning Gemstones.

The maximum area varies from one type of License to another, based on administrative estimation based on operational assumptions. This bureaucratic definition cannot take into consideration practical and specific cases and is not a tool to promote activity.

It is not proved by international experience that the way of avoiding large-size dormant licenses is to fix a maximum size of the license. A market economy uses financial incentives (increasing fees with the area) and / or activity obligations.

The Act prescribes that any license should be a regular rectangle (Regulations Sect. 4). However, applying this rule means that certain irregular shapes of land situated in between several licenses may not be utilised. Besides, modern GPS technique and computer facilities are developed to a stage where such limitation is no longer a problem. For convenience it is suggested to delete this rule.

2.7.3 Relinquishment

The relinquishment obligation applies at the renewal of a Prospecting License.

Table Fejll Ukendt argument for parameter.. Relinquishment at the renewal

License	AOBG	BM	GEM
PL	50%		No renewal
RL			
SML			
ML/GML			
PPL			
PML			

The information of Table 6 is defined in Section 29 (3-b ii).

The relinquishment applies exclusively to the renewal of Prospecting Licenses, except PL for building material. This is due to the fact that it is the only license that can be indefinitely renewed and that exclusivity rules closes the possibility to other potential investors to prospect or mine in the same area. The relinquishment rule is used to avoid freezing area for potential mining activity, and may and may not be included in modern mining acts.

In the event a license holder wants to proceed from exploration to mining, the relinquishing rule may create a problem, because he in such case certainly will like to keep a prospecting area around his ML area to cover potential mineralised areas. But due to the relinquishing rule he cannot keep this 'buffer' area for sufficient time.

This estimation of the profitability uses different criteria, including the fees per km². Increasing fees can be used as an incentive or disincentive as well as relinquishment obligations or in addition to it.

It is also not clear if the 50% relinquishments apply to the whole initial prospecting area or the remaining prospecting area after deducting the area applied for mining.

2.8 Reporting obligations

2.8.1 Legal requirements

Section 99 refers to Part I of the 3d schedule to define the legal reporting requirements.

The information in Table 7 is extracted from Schedule 3 part I (section 1,2,3), and sections 49 and 54 of the Mining Act.

Table Fejl! Ukendt argument for parameter.. Reporting requirements (except Environmental Reports)

License	AOBG	BM	GEM
PL	3months	3months	3months
RL	?		
SML	Year (*)		3months
ML/GML	No frequency	?	After 21 months
PPL	?	?	?
PML	10ha	?	?

* financial report

It is obvious from Table 7 that the conditions are inconsistent and ambiguous, making the administration and control of this reporting activity unmanageable. The different periodicity or requirements makes the control of delivered reports in time extremely complex.

Moreover the required content of these company reports (Schedule 3) are different. The reports are meant to be used for inspection purposes. It is noticed that the Mining Act insists more on the need of permanent availability of the documentation at the request of the Commissioner or any authorised person than to the reporting constraints.

It is said (Schedule 3, part I, 1b) that reports are submitted to the Commissioner only, and that the Minister can dispense on these requirements at the demand of the applicant (1b). This makes the reporting management very difficult.

Reporting should be dispatched to a selected group of stakeholders in accordance with the "harmonisation" statement in the Mineral Policy. The requirements – detailed content of the report, periodicity – should be adapted to the phase of exploration and mining but the basic requirements should be the same – general content, recipient institution.

Table 5 shows that many data are missing: no requirements for Retention License, Mining Licenses, Primary Prospecting Licenses and Primary Mining License of Building Materials, Primary Prospecting Licenses and Primary Mining License for Gemstones, Primary Prospecting Licenses for AOBG. No frequency is indicated for Mining License for AOBG and no periodicity for Mining License for Gemstones.

The amendment should be concerned with completion as well as standardisation of Reporting activity and requirements.

2.8.2 Environmental Impact Assessment Reporting

This Chapter is not studying the Environmental Regulations, considered out of the scope of the TOR, but focuses exclusively on the legal requirements of providing reports.

Table Fejl! Ukendt argument for parameter.. *Environmental Impact Assessment Reporting*

License	AOBG	BM	GEM
PL	No	No	No
RL	No		
SML	Yes (*)		Yes (*)
ML/GML	Yes (*)	No	Yes (*)
PPL	No	No	No
PML	No	No	No

(*) exemption possible by the Minister (Sect. 64(2))

This information is provided in Section 38.

It is clear that the scarce requirement of EIA contradicts the Mineral Policy that states: "The entire mining industry must adhere to the same environmental standards". It is clear, as said in the Mineral Policy, that: "the requirements for meeting established standards vary according to the scale of operation", which is not the same as saying that companies involved in exploration and mining are exempted with respect to delivering Environmental Report.

A detailed regulation of environmental requirements exists, but report control processes are not defined. Moreover, many articles of this regulation should refer to an "Environment Act" or if not existing, to regulations edited by the Ministry in charge of Environment. It is understandable that in absence of complete Environmental regulations, the Ministry of Minerals was preparing standards appropriate to Mining activity. Co-operation with the Ministry or other body responsible for the Environment could ensure a broader and more comprehensive approach at the national level.

Another example of a discriminatory power of the Minister, which is studied in chapter 3.12.1, is found in Section 64(2), in which the Minister can decide whether or not a Prospecting License, Mining License, Special Mining License and Gemstone Mining License should be exempted to submit EIA reports. It is not clear under which criteria such decision is made, but the Environment is a major issue and such a self-directed ministerial decision induces that other important Ministries (Environment, Natural Resources...) are not involved and then will not be informed of the impact on the Environment.

Naturally the environmental impact varies according to type of activity, and e.g. mining makes at stronger impact than does prospecting activities. Hence EIA should be adapted not only to the scale but also to the type of activity. Thus reports concerning exploration need not be very comprehensive as to EIA, whereas at a later stage the content should be more comprehensive focusing all relevant topics. Clarifications hereto should be part of the Act and Regulation.

2.9 Rights

2.9.1 Transfer of Prospecting, Mining Rights

Section 9 states the right to transfer mineral License from a holder to another person, provided a written consent of the Licensing Authority (section 9(2)) for a transfer of a Mining License related to Division B (ML, SML, GML).

The limitation and controls (the "consent") seems to be the only ones stated in Section 8, related to the eligibility of the applicant. These conditions were discussed in Chapter 3.2.

Section 9(4) states that the consent shall not be “unreasonably withheld or delayed”. This condition relates to the responsibility of the MEM that is discussed in Chapter 3.2.4. In summary, if no timing is given, if the administration is not liable for any missing information, and if no action or decision is defined in the case of “unreasonable delay”, this article has no impact.

2.9.2 Compensation

Section 96 states that the rights under a Mineral Right be exercised reasonably. In details, some compensation rules are defined:

- Disturbance of the right of the “lawful occupier” or damages caused should be financially compensated “in respect to the disturbance or damage”
- If the value of the land is enhanced by the mining operation, compensation is payable based on the value without enhancement.
- The Commissioner may be referred to decide in case of dispute. But, according to section 101 (2), he can “refuse to decide”.

The Mining Act, 1998 gives basic rules to evaluate compensations but is not providing a methodology to evaluate the amount, subject of the majority of disputes. This is partly due to the fact that before the new Land Law, 1999, the land had no value, was owned by the State and that consequently no official land market was operating in the country. The new Land Law sets up the principles of valuable Land, but still does not accept permanent property (only long-term leases). The Land Law is very recent and the land market is not yet fully in operation. In absence of an operating land market, evaluation skill is not developed (there is no Land Valuation Board or equivalent) and no valuation methodology has been developed and tested.

In absence of clear regulation, the Mining Act should be as clear as possible on the methods of evaluation, compensation, the procedures and the solving of disputes.

Another compensation issue relates to the responsibility of the administration in case of errors in the registration (co-ordinates for example) that causes financial damage to the holder of the right when discovered. That should be clearly regulated.

2.9.3 Erecting buildings by the occupier

Section 96(2) states that lawful occupiers are not authorised to erect any building or structure in an area covered by a Division A and B licenses without the consent of the holder of the Prospecting or Mining Right, except if the Minister decides. This decision is coming from an “unreasonably withheld” consent.

It is an important statement that construction by the lawful occupier is not authorised in an area covered by any Minerals Right. However, it is said that: (i) the Minister may decide. It seems not necessary to involve the Minister in such a decision and such a decision should be decentralised with possibility of appeal; (ii) coming from an “unreasonable withheld”

consent of the holder. The definition of “unreasonable” is not clearly identified; (iii) all Minerals Licenses are concerned. Special cases could be defined for Reconnaissance Prospecting Licenses, which cover large area with little activity. The difference between prospecting and mining could be taken into consideration, with a simplified process in case of prospecting, for example.

2.10 Constraints

This study is limited to the constraints related to the obligation (or non-obligation) of activity, the possibility of reducing or enlarging the area covered by a License, the rules for cancelling a License and the application for controlling security and providing insurances for the miners.

2.10.1 Activity

Activity is not an obligation as such, but the Mineral Policy clearly states that the Mining Act must be an incitation to prospect or mine, not using rights for a speculation purpose.

It is important that the Act reflects this need of activity, but the best way is not to implement bureaucratic controls or administrative requests, being difficult and expensive to manage. Alternatively the introduction of financial penalties or targeted incentives may be considered. Another key penalty is to define an easy-to-implement and well-defined cancellation process of the License. This issue is discussed in 3.10.2.

Section 63 supposes that there is an obligation to mine in accordance with the plan submitted - but this is requested only for Mining Licenses for minerals other than gemstones. This very special case should be extended to all other types of mining licenses, or be deleted to ensure consistency.

It is at the initiative of the Mining Advisory Committee (MAC), with the signature of the Minister, that a License can be terminated. The ZMO/RMO usually makes the controls. There is no indication of the co-ordination process and what is the condition and flow chart of such a decision. It appears that a well-defined involvement of ZMO / RMO in the decision-process is requested by the ZMO/RMO being involved in the inspection activity.

Section 60 defines the procedure for a holder of a Special Mining License to suspend or stop mining activities. It is noted that the Licensing Unit must approve this cessation of activity and may direct to continue mining operations in compliance with the program. This statement is difficult to apply, as holders of SMLs are mainly large companies working in a free market environment that minimises interventions and orders from the administration. It is suggested to impose financial compensations, compliance with a minimum of requirements before leaving (as Environmental conditionality stipulated in the contract) and declare the area vacant open to Tenders or free of Rights open to new applications.

2.10.2 Surrendering part or whole of / enlarging area covered by the License

Changing the area of the License at the request of the holder is described in two sections:

- Section 56 describes the possible changes or cancellation by the holder of the License, surrendering part or whole of an area covered by the License;
- Section 59 describes the possibility of enlargement of a License area at the request of the holder.

Concerning the process of cancellation at the request of a holder, the process should be as simple as possible, in order to discourage holders to freeze a License instead of asking for cancellation. The same comments as for 3.10.1 apply, concerning financial compensations, minimum requirements and declaration of vacant or free area.

Some comments apply to section 59:

- The enlargement of an area cannot be granted if the prospecting area exceeds the maximum area prescribed (section 59(2)). There is no indication for SML for which this section applies, but according to 3.6.2 (Maximum area) there is no indication in the Act concerning a maximum area for a SML.
- This enlargement applies exclusively to SML and PL. There is no possibility for other mining licenses.

2.10.3 Cancellation of a License

Section 57 defines the possibility for the Minister to cancel a License. The section applies to Divisions A and B, excluding PPL and PML. Cancellation of PPL and PPL defined in Division D is described in section 72

Concerning Licenses under Division A and B, the section involves the Mining Advisory Committee in advising the Minister. This option is questionable as they are not official beneficiary of any Report or information from the Zonal Mines Offices or from the Licensing Unit. Inversely, the Zonal Mines Offices may face cases of non-compliance with the Act as defined in section 57(1). But there is no description of the action that can be taken by the ZMO before involving directly the Minister and no co-ordination is defined.

A redefinition of the roles and an institutional arrangement made accordingly improves the efficiency of the Licensing System. Basic rules are to separate administration, assessment and decision. LU is a Registration office, issuing and monitoring licenses. ZMO is a control office, used for inspections, not for decisions. Independent bodies should be used for assessment of Reports and Technical matters (such as the Geological Survey).

Concerning licenses under Division D, there is no description of cases of non-compliance with the provision of the Act that justifies a cancellation, except in the event that the holder is ineligible. There is no description of a process of written notice to the holder, in the con-

trary to Division A/B Licenses where the holder has 60 days to comply with the request (Section 57 (2b)).

Again, the ZMOs are not involved in the process, though they are in charge of the inspections and can easily identify the defaults of the holders.

In summary, the cancellation of a License should follow a clear and easy process provided that: (i) ZMOs have a possibility of initiating legal actions when identifying the non-compliances; (ii) involving inspection offices (ZMO); and (iii) same process extended to PML, PPL.

2.10.4 Safety and insurance

The regulation on safety is not commented in this report because it is not related directly or indirectly to the Mining cadastre.

It is just noted that Section 109 states that insurance is mandatory to cover all risks inventoried in 109.2. But this insurance applies exclusively to Prospecting Licenses (PL) and Division A/B Licenses (ML, GML, and SML), not to Division D Licenses (PPL and SML). This insurance requirement applies to PPL and PML exclusively at the discretion of the Commissioner.

It is assumed that the Security regulation applies for everyone and that in case of accident section 109 (4) applies, where the holder of the right is responsible for any accident resulting from any act or omission in the conduct of mining operation. It is clear that the limited financial asset of small-scale and artisanal miners (PPL and mainly PML) caused poorly ensured activity against accidents, even the most risky. It is doubtful if they can afford to pay fees or compensations in case of misconduct of mining operations without insurance. The Policy statement defining one of the functions of the Government as "supporting small-scale miners to adopt safe and environmental-sound processes" should be applied and solution founded to better ensure security of miners in providing for example financial support and insurances as an incentive for providing safe processes.

2.11 Demarcation and co-ordinates

A fundamental of any mining cadastral system is application of a unique co-ordinate system defining without ambiguity the field boundaries and the possibility to retrieve limits even if beacons do not exist.

The Mining Act and the Regulations do not specify the technical requirements necessary for an unambiguous co-ordinate system. For example Section 24 (3) c defines the documents going with an application for a Prospecting License. The article requests only that the applicant "shall state the area and be accompanied by a plan of the area". A better description of the "plan" (scale, type of co-ordinate system and specifications, accuracy etc.)

is necessary. Some countries have special regulations on mapping, co-ordinate system, map datum, and GPS measurements.

Co-ordination with the Survey and Mapping Division of the Ministry of Lands and Settlements is necessary in order to use national standards defined by specialists with the aim to adapt the required accuracy and technical constraints to the minimum required for the purpose of granting licenses without overlap.

Latitudes and Longitudes are indicated in the forms defined in the Regulation, but the co-ordinate system and the projection are not defined.

Beacons and marks for identifying the limits on the field are defined in the Regulation: Section 6(1) for Licenses granted under Division A and B, Section 6(2) for Primary Mining Licenses. The demarcation for Primary Prospecting License is defined in Section 65 (7) but is optional in case of a very general prospecting activity over a larger area.

2.12 Institutional arrangements

2.12.1 Role and obligations of the Minister

The Mining Act defines an essential role to the Minister. In summary, he is involved in major decisions, but also in minor issues. He has a discriminatory power to amend many requirements defined in the Mining Act and Regulations.

The decision-making activity is the following:

- Section 10. Enter into a development agreement for granting, conducting mining operations, financing, advised by MAC
- Section 13. Designate vacant area for PL, ML, GML, for PML after advice from the Mining Advisory Committee (MAC).
- Section 16. Appoint Zonal Mines Officers (advised by Commissioner)
- Section 20. Prepare Annual Ministry activity report to MAC.
- Section 34. Accept Retention License applications after advice from MAC.
- Section 35. Require assessment study from the holder of a RL for accepting renewal (advised by MAC)
- Section 48. Grant ML, renewal (not gemstones)
- Section 51. Grant GML
- Section 57. Cancel PL, RL, SML, ML, GML licenses after 60 days notice and consulting MAC.
- Section 78. Publish turnover requirements after consulting MAC.
- Section 94. Establish controlled area for gemstone mining. Amend existing diamond protection area (Diamond Industry Protection Ordinance)
- Section 95g. Authorise license < 100m from a point or within a development and production license area identified under the Petroleum Act, 1980

- Section 97 Accept appeal from holder concerning Commissioner notice on wasteful mining
- Section 107. Deliver import / export permit for radioactive mineral.

A more questionable activity relates to the involvement of the Minister in discriminatory decisions, sometimes annihilating or modifying general conditions defined in the Mining Act or in minor decisions that could be easily made by appointed officers using standard processes, such as:

- Section 12. Decide on priority between two applications received the same day.
- Section 15. Extend provision for disposal, export mineral (except raw gold and gemstones).
- Section 26. Select the winner Bid after receiving report from MAC and inform the winner.
- Section 35. Grant Retention Licenses after consultation with the applicant.
- Section 36. After receiving applications for ML, SML, GML, decide whom to send copies to.
- Section 38. Decide on special requirements to applicant of SML
- Section 39. Grant SML and decide which mineral, duration or justify reject to the applicant.
- Section 42. Decide on renewal, changing conditions, after consultation with the applicant.
- Section 57(4). Decide on cancellation of License and inform the holder Section 64(2). Exempt ML or GML of Environmental Impact Assessment reporting
- Section 73. Grant Dealer's license (raw gold or gemstone, or another mineral if Minister Order)
- Section 86. After notice to a license holder that value is under-estimated, revise the value based on an agreement with the license holder
- Section 87 Defer royalties due or section 89. Determine provisional payment in place of royalties
- Section 91. Prohibit disposal of mineral of a dealer, unless payment or individual arrangement
- Section 95. Give written consent for exercise rights in area of public purpose, 100m from buildings or reserved area.
- Section 95b. Can dispense of written consent of lawful occupier for granting a right.
- Section 96. Consent building authorisation to lawful occupier in a license area if consent from holder of license withheld
- Schedule 3.1. Dispense holder of PL of production operation reports to the Commissioner
- Schedule 3.2. As he requires, demand for Operation, Technical or Financial Reports to ML, GML, ML

It is evident that the responsibility of the Minister is excessive in many aspects:

- Discriminatory decisions changing the terms of a contract should be avoided;
- A transparent arrangement should replace individual agreements between the Minister and the License holder.

In modern mining acts the role of the Minister is limited to support the action of the Government as promoter, facilitator, regulator and service provider, delegating current procedural decision to the Commissioner or nominated and appointed officers.

2.12.2 Role and obligations of the Commissioner

The role of the Commissioner is defined in Section 16 (2):

- Exercise the functions defined in the Act
- Supervise and regulate the proper and effectual carrying out of the provision of the Act.

In other terms, he is the responsible person in charge of supervising the effective implementation of the Mining Act.

The Mining Act defines some functions to the Commissioner:

- Section 17: May delegate some functions except disputes resolution defined in Part VIII
- Section 18 a: Advise the Minister on geological matters
- Section 18 b: Undertake geological mapping
- Section 18 c: Provide data concerning geological resources to the Public
- Section 32(3): Receive gemstone sale reports from holders of PL for Gemstones
- Section 54: Receive GML report, not later than 21 months after granting the license
- Section 55: Receive application for Renewal of GML
- Sections 65, 68: Receive Applications for PPL, PML
- Section 80: Grant Broker's license
- Section 97: Authorise removal of any mineral from the prospecting area
- Section 98: Notice to holder for wasteful mining practices
- Section 101 (1): may inquire and decide disputes between miners or with a third party except Government concerning boundaries, disputed claim to erect mining construction, assessment and payment of compensation
- Section 101(2): May refuse to decide
- Section 105: Maintain Register of applications, grants and changes (assignments, transfers, suspension, cancellation)
- Section 106: Sign certificates (date of effect)

The Commissioners role and responsibilities are:

- Authorising the grants of Division D types of licenses;
- Very important concerning disputes, acting as a land judge, though he can refuse to decide;
- Acting as the Registrar for the Mining rights registration, he is directly involved in the Mining Cadastre.

A better balance of responsibilities between Minister and Commissioner is recommended.

2.12.3 Mining Advisory Committee

The role of this Committee is to (Section 20) advise the Minister on the matters that under the provision of the Act are required to be referred to.

The matters are not numerous:

Section 26: Receive proposal for PL by Tender, report to Minister

Section 34 (3): Study applications for RL and submit Report to the Minister

MAC is also an adviser to the Minister in some cases, which are not detailed.

The role of the Mining Advisory Committee is questionable. A Committee may be used for co-ordinating activities with other Ministries. Within the Ministry of Energy and Minerals, the participation of appointed officers to undertake certain activities appears to rule out the necessity of a Committee.

2.12.4 Resident Mines Office

Section 23 describes the establishment of Zonal Mines Offices (ZMO) by the Minister. The administration has afterwards established so-called "Resident Mines Offices" (RMO) which are under the responsibility of the Zonal Mines Offices; they are provided a set of responsibilities to undertake the responsibilities of ZMO within an allocated area. However RMO's are not defined in the Mining Act, and neither is their authority to undertake any activity.

The importance of the Resident Mines Offices, closer to the exploration and mining operations is evident. Their role and responsibilities though must be defined in the Mining Act.

2.12.5 Co-ordination

The roles and responsibilities of the Minister, the Commissioner, the Mining Advisory Committee, the Zonal Mines Offices are not guided by any clear principles. Many examples of the involvement of one of the authority are questionable.

For example, Section 20 gives MAC a role of general advisor at the request of the Minister but in the same time controller of the annual Report of the. The MAC cannot give an independent opinion of the Annual Report.

Another example described in 3.10.3 is the non-involvement of ZMO in the cancelling final process.

Another issue is the necessity to define rules of co-ordination between all involved officers and institutions. Dispatching information to the relevant officer / office should be clarified case by case.

2.13 Relations with other stakeholders

2.13.1 Land Law

A new Land Law was promulgated in 1999, coming after the promulgation of the Mining Act. This new Land Law defines the status of all the land of the country, including the use, the holder of rights.

These definitions have a direct interference with the Mining Act, where definitions were provided because of lack of clear definition at the time of the preparation of this Act, with some reference to the old Act.

It is not the objective of this report to enter into a detailed study of the Lands Act, but we have identified some basic principles having a direct impact on the Mining Act, concerning essentially rules for compensation and solutions of disputes. Final solutions should be founded in co-operation with the Ministry of Lands and Settlements.

According to the Lands Act, 1999, "land" includes the surface of the earth and the earth below the surface and all substances other than minerals and petroleum, things naturally growing on the land, buildings and other permanent structures. The Mining Act grants rights on using and exploiting Minerals, not on land use rights or "surface rights".

The Land Law defines three types of Land:

- Village Land: Demarcated, where the Village Committee is in charge of managing land use;
- Reserved Land: List of land with limited private rights like forest, national park, wildlife, marine park, town and country planning, highway, recreation, subject to Land acquisition Act, 1967, drained parcel, reserve for public utilities, hazardous land;
- General Land: Owned and managed by the State, or public land, which is not reserved land or village land.

The definition of "vacant land" and "lawful occupier" should take into account these definitions.

2.13.2 Lawful Occupier

Section 4 defines the "lawful occupier" as the actual user or possessor of a piece of land where damages are payable. In other terms, a lawful occupier can be compensated for the damages resulting of a Mining or Prospecting activity.

It seems that it is not exactly the rule used (see 3.7.2) where a lawful occupier is compensated for an estimated value of the land and construction he claims the "ownership" as farmer or villager.

Moreover, this definition is different from the one coming from the list of section 95 b that includes many other categories:

- Inhabited, occupied or temporarily unoccupied house
- Land prepared for crop, or reaped last year
- Right of occupancy according to Land Law
- Title to the use and occupy land
- Occupying land in accordance with customary law

Consistency must be checked with the Ministry of Lands because it is a matter of many disputes between parties, some being regularly reported in newspapers.

2.13.3 Vacant Area

Section 12 of the Mining Act defines the “vacant area” as an area free of pending or existing Mineral Right. The definition is not taken into account other rights related to the Land Law, reserves or Lawful occupiers.

A “vacant area” should be limited to General Land according to the Land Law. If extended to reserves or village areas, a re-classification process by the Ministry of Lands is necessary, in accordance with the Land Law. A full integration of the two registration systems is not a solution because of the complexity. It is recommended, in accordance with international trends, to separate the two systems and develop co-ordination tools when appropriate.

It is clear that the Ministry of Minerals is invested of the power to decide which area is “vacant” for Mining Rights exclusively.

2.13.4 Information to Other Stakeholders

There is no provision in the Act or Regulations concerning the information to other stakeholders concerning the License granted. In other terms, other stakeholders are not informed that a right of prospecting or mining has been granted in some areas.

The Act should indicate a list of stakeholders where to send common information concerning the granted Licenses, like co-ordinates (using a unique co-ordinate system), date of issue, date of expiry to the Mapping and Survey Division of the Ministry of Lands, so that they are able to inform the public and the Registrar on existing rights located on the maps

It is also possible to envisage the registration of the right in the Registry office as a right on a piece of Land. However, the current situation of the Registry does not allow such a registration in a short time, without defining a process in accordance with the Land Registration Ordinance 334.

3. Conclusions

3.1 Major issues

Amendments or completions of the Act and Regulations should focus on three topics: (i) simplify and harmonise the requirements and the date; (ii) complete missing information; (iii) standardise the content and describe easy and efficient controls to do.

Also the following questions should be addressed,

- Is the grouping in mineral group used an incentives?
- Do the different types of Licenses attract investors or is it of benefit to the country?
- Are the different conditions and processes for each type of License justified?
- Is the advantage of discrete decisions by the Minister/Commissioner as opposed to a non-discriminatory process justified?
- Is the current legal framework, as well as current processes, appropriate for “up-grading” artisanal mining into organised and modernised mining?
- Are other rights taken into account in the Mining Act?

At the meeting held on July 18th, 2002, focusing the possible strategies for improvement of the “mining environment” the attendants from MEM were in favour of amending the Act following Strategy “B”: simplification of the Act. Details are provided in the Report: “Strategy Meeting - Presentations of Three Strategies – Resume”.

The starting point for such amendments of the Act is the proposed simplifications, then adding and complementing missing information. Further details are provided in the Report P22: “Proposed amendment of the Act, 1998 and Regulations, 1999”, and also outlined in brief below.

3.2 Simplification and clarifications

The simplifications relate to the following aspects:

- Minimise the number of combinations of various types of License and standardise the application procedures

The clarifications relate to:

- Clarify “first come, first served”
- Clarify rights of exclusivity
- Clarify compensation rules
- Better ensure co-ordination with other stakeholders
- Refer to the Lands Act without re-defining occupation
- Suppress the discriminatory processes
- Distribute role and responsibility of Minister, Commissioner, Zonal and Resident Mines Offices;

- Revise advice requirements by MAC;
- Ensure prospecting and mining activity by incentives or penalties;
- Specify non-eligibility of applicants in case of conflict of interest

These simplifications and clarifications induce changes in several sections without changing the structure of the Act.

3.3 Adjustments and completion

In addition to the simplifications and clarifications, some adjustments or completions are necessary:

- Definitions provided at the beginning of the Act
- Ensure that all cases are taken into account for limitations and conditions of Licenses (duration, area)
- Role of Resident Mines Office
- Clarify obligations of holders (Environment, safety, reporting)
- Dispatching information with other stakeholders;
- Defining co-ordinate system
- Adjust the process of cancellation of licenses
- Complete Environment reporting requirements;
- Complete reporting requirements
- Clarify Bid processes

The proposed amendments are detailed in Report 2.2: "Amendment of the Mining Act, 1998 and Regulations, 1999".

**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

**DRAFT FINAL REPORT
October 12, 2002**

**Proposed amendments of Mining Act, 1998 and Regulations,
1999**

Report 2.2

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Executive Summary

1. The Strategy Meeting held on 18th July 2002 approved the selection of Strategy “B”, named “Simplification of the Act” based on the following principles: (i) Simplification and reducing the number of type of rights; (ii) Objective criteria (non discriminatory decisions); (iii) Exclusivity of all mineral rights; (iv) Adjustments of the regulation according to the amended act.
2. This selection induced that the amendments proposed relate to some major issues: (i) reduce the number of licenses to a minimum; (ii) re-define the role and responsibility of all decision-makers (Minister, Commissioner, Licensing Unit, Zonal Offices, Mining Advisory Committee); confirm the role of the State as defined in the National Mining Policy; (iii) standardise the process of application for License, renewals, cancelling; standardise the rights and obligations; (iv) ensure the compatibility of the definitions in the Act and with other stakeholders; (v) improve the efficiency of the administration by clear, unambiguous and comprehensive rules; (vi) clearly define large-scale and small-scale operations, rights and charge in order to promote prospecting and mining activity by locals; (vii) complete the Act with missing information, clarify some uncertainties, add necessary requirements.
3. General changes include: (i) reducing the type of minerals in “building material” and “minerals”; (ii) reducing the type of License by “prospecting license, mining license and small-scale (or primary) license; (iii) replacing “Minister”, “Commissioner” or “licensing Authority” by simply “Licensing authority” with an extended and clear definition; (iv) adding in Part II general principles of application, applicants, granting, cancelling License and completing the definitions; (iv) ensuring co-ordination with other stakeholders, especially the Ministry of natural Resource and the Ministry of Lands, to clarify overlapping rights issues and compensation rules; (v) clarify reporting requirements.
4. More specifically, the structure of the Act is still the same: 11 Parts, 5 Schedule, Part IV divided into 4 divisions with a revised title: (A) Prospecting License; (B) Mining License; (C) Supplementary provisions affecting Mineral Rights under Division A and B; (D) Primary Licenses.
5. The reduction of type of License to building materials and Minerals aims at simplifying and standardise the processes, clarifying interaction issues, avoid inconsistencies and contradictions in the current Act (gold mines). It is proposed that there is no Prospecting License granted for Building Material or for any search activity without operation (equivalent to a primary prospecting license without demarcation).
6. Conditions of granting Licenses, rights and obligations are the same for each type of License with a minimum of exceptions, and limited requirements for small-scale miners. The control of the financial capacity, the deposits of minerals, the profitability of a mining activity by the State is replaced by agreed contractual requirements that the holder of license must fulfil. The granting by Tender process is revised to fit with international standards.
7. The “Licensing Authority” is initially defined clearly, and the tasks of the Minister, Commissioner, Zonal Offices clarified. It is proposed that the Mining Advisory Committee is cancelled, but that Evaluation Committees are created to evaluate proposals of Tenders, or large-scale applications. The Zonal and Resident mines

Offices are defined and their involvement in the approval processes consolidated in order to better co-ordinate.

8. Principles are clarified and completed. Definitions of section 4 are completed when appropriate and basic principles applicable to all the Licenses grouped in Part II, in order to ensure a maximum of standardisation and simplification in the management of the applications and Licenses by the Licensing Authority.
9. The support of artisanal and small-scale miners is supported by a simplified application process of granting unique Primary Licence, including right of prospecting or mining, automatic renewal when paying fees. Inversely, cancelling licenses is not justified by the ineligibility of the applicant only, but by freezing activity or non-payment of fees, with clear rules.
10. An improved involvement of other stakeholders is ensured by the compatibility of the definitions on land rights and lawful occupiers, compensation rules, report dispatching, maps and co-ordinates common regulation.
11. Reporting processes and requirements are the same for all applicants and holders of Mineral Rights, with simplified requirements for small-scale operations. Environmental issues are especially more detailed and consistent. Other report requirements are also standardised in order to simplify the tasks of the administration and make them controllable. The result should be a better management of the Mining sector and an increased efficiency of the administration.

1. Introduction

The Report P2.1: "Assessment of the Legal and Regulatory Framework" deals with major issues and proposed sections to adjust, delete, modify or statements to add. The detailed justifications are not repeated in this Report.

The Report: "Strategy meeting Résumé" is defining the options for amending the Act. It was decided in the Strategy meeting to select Strategy B: simplification, without changing the structure of the Act. Details of this option are detailed in the "Strategy" Report and not repeated in this Report.

The objective of this Report is section by section to inventory the proposed changes in three columns:

- Current section;
- Proposed change;
- Justification.

The justification includes notes when necessary. The amendments cannot be studied separately as several may relate to the same issue. To clarify the understanding, the proposed amendments are classified in several packages:

- Simplification: reducing the number of licenses, or avoiding unmanageable complexity
- Processes: simplification and clarification of the application processes
- Missing information: to complete
- Consistency: to ensure the equivalence between all License applications
- Co-ordination: with other stakeholders, Laws or Regulations
- Clarification: to complete the description for ensuring a more efficient process.
- Role: adjusting role and responsibility of offices and officers involved in the Licensing process, avoid discriminatory decisions.

Concerning the regulations, the Mining (mineral Rights) Regulation, 1999 is the basis for the suggestions. The Regulations on Security and Environment are out of the scope of the TOR and are not studied. The proposed changes relate, as stated in the TOR, to "prepare regulations in agreement with suggested amendments".

Tanzanian lawyers should refine the wording, as for the Act, in accordance with the use in the country.

2. Amendments of the Mining Act, 1998

Overall changes are suggested in the whole Act, except when especially specified:

Mining Act 1998	Amendment	Justification
Everywhere Special Mining License Gemstone Mining License	Replace by: Mining License Mining License	
Section 4(1) "gemstone mining license"	Delete	Simplification No specific License
"lawful occupier"	Holder of rights on the land in accordance with the Lands Law, 1999	
"licensing authority" when an application for a license is to be made to the Minister... when an application for a license is to be made to the Commissioner...	Clarify and simplify: The Mining Cadastre Registrar is the LA in charge of decisions and signatures required for registration, except for special conditions stated in the Act where the Minister, Commissioner or any other officer is the responsible authority.	Clarification <i>Note: it is suggested that a new section is opened in the general principles to define who is the licensing authority.</i>
"Mining Advisory Committee"	Delete	Processes Institutional reorganization
"Special Mining License"	Delete	Simplification Standard Mining Licenses
	Add: "Resident Mines office": such an office established for any sub-area of a zonal office in accordance with section 23.	Missing information
	Add: "Resident Mines Officer": same with subsection (5)	Missing information

<p>Section 7 The following Mineral rights may be granted...</p>	<p>Under Division A: Prospecting License Under division B: Mining License Under Division D: Small-scale prospecting and Mining License.</p>	<p>Simplification</p>
<p>Section 8(1) No mineral Rights shall be granted to an individual who: ...</p>	<p>Add: (iii) officers working in the Ministry of Minerals in the Central level for large-scale prospecting and mining Licenses; (iv) personnel working in ZMO or RMO for prospecting or mining Licenses operating in the area covered by the office.</p>	<p>Missing Information Conflicts of interest.</p>
<p>Section 8(3) No gemstone mining License shall be granted to a non-citizen...</p>	<p>Delete</p>	<p>Simplification Consistency</p>
<p>Section 9(2) No special mining license, no mining license or gemstone mining license or....</p>	<p>Replace by No Mining License</p>	<p>Simplification Consistency</p>
<p>Section 9(4) The consent of the licensing authority ... shall not be unreasonably withheld or delayed</p>	<p>Replace by: If the Licensing authority is not informing the holder of his decision within 30 days from the receipt of the request, the transfer is considered accepted and shall be registered as such, on the condition that: (a) the applicant confirms by registered letter the copy of the receipt indicating the date and time of reception; (b) the Licensing Authority confirms or does not reply within the next 30 days.</p>	<p>Clarification Responsibility of the administration and efficiency</p>

<p>Section 10 The Minister may, on behalf of the United Republic, enter into a developing agreement, not inconsistent with this Act, with the holder of, or an applicant for, a Minerals Right for which he is the licensing authority, the conduct of mining operations under a special mining License, or the financing of any mining operations under a special mining License.</p>	<p>Modify: The Licensing authority may, on behalf..., enter into a developing agreement, not..., with an applicant for or the holder of a Mining License, which he is the appointed officer in accordance with the Act section..., the conduct or financing of mining operations under a Mining License.</p>	<p>Clarification</p>
<p>Section 10(4) The Minister shall refer any proposal to enter into a developing agreement to the Mining Advisory Committee.</p>	<p>Replace by: The Licensing authority shall prepare this agreement with the officers and stakeholders concerned by the content of the agreement.</p>	<p>Role Changing the role of the MAC</p>
<p>Section 12(2) Where two or more specified applications are received the same day by..., those applications shall be deemed to have been received simultaneously and priority shall be determined by the Minister.</p>	<p>Delete Add: (2) An application received in the authorised reception office (<i>definition to add in section 8</i>) in the prescribed form by an applicant who justifies the payment of prescribed fees shall be registered immediately with a number, the date and time at which it was received. These shall be indicated on an official receipt handed to the applicant or his authorized agent or sent to the applicant by registered mail (<i>copy of 24(4) and (5)</i>)</p>	<p>Clarification First come, first served Clarify the registration of an application (principle valid for all Licenses)</p>
<p>Section 13(1) The Minister (can) designate any vacant area other than an area already forming part of a reserved area as an area for which he invites application by Tender for a) a prospecting license(s), b) a mining License(s); c) a gemstone mining license(s)</p>	<p>Replace by: The Minister (can) designate any vacant area other than an area already forming part of a reserved area, hazardous area or village area as an area... for large-scale mining or prospecting License(s). (2) The Minister (can) designate vacant area a part of a village area after determining with the</p>	<p>Coordination Accordance with Lands Law Pre-definition of vacant area and compensation rules <i>Note: these compensation rules should be added in a single and complete section to be added in the Part II, General Principles.</i></p>

	ministry of Lands compensation rules in accordance with the provision of the Act section...	
Section 13(2) The area of a gemstone mining license...	Delete	Simplification No specificity by Minerals
Section 14 When the Minister, after consultation with the Mining Advisory Committee, determines it would be ... he may ... designate any vacant area as an area exclusively reserved for prospecting and mining operations by persons holding primary mining licenses issued under Division D..	Replace by: When the Minister, after consultation with the Commissioner based on information from the ZMO determines... any vacant area designated under the conditions 13(1) and 13 (2) for applications to small-scale prospecting or mining Licenses.	Clarification
Section 15(1) No person other than ... shall buy... or sell any raw gold or gemstones.	Modify: No person other than sell any mineral.	Simplification Missing Information
Section 15(3) No person shall export from Tanzania any raw gold or gemstones unless he is an authorised miner or a licensed dealer...	Modify: No person shall export from Tanzania any mineral unless he is a licensed dealer. Delete (a) (case of authorised miner)	Consistency Another option could be to authorise miners to export.
Section 15(5) The Minister may... extend the provision of this section so that they apply to minerals other than raw gold and gemstones.	Delete	Simplification Already extended to all minerals

<p>Section 20: There is established a Mining Advisory Committee... the provisions of the First Schedule apply to the composition of this Committee It shall submit its advice... the Minister shall publish...</p>	Delete	Role Change the operation of the Minerals Advisory Committee.
<p>Section 22: No officer of the Ministry or other public officer shall be liable for anything done or omitted bona fide in the performance... under this Act.</p>	Delete or replace: The officer of the Ministry in charge of delivering information to the public is responsible of the conformity of the information provided with the existing legal information stored in the Ministry.	Clarification Better definition of the responsibility of the Ministry in delivering information Should be move in the introduction, as principles.
<p>Section 23 (1): The Minister, in consultation with the Mining Advisory Committee shall establish ZMO and appoint the area of Tanzania for which such ZMO shall be responsible.</p>	Replace by: The Minister, in consultation with the Commissioner, shall establish ZMO and appoint... (2) The Minister, in consultation with the Commissioner, shall establish Resident Mines Offices (RMO) supervised by a ZMO and appoint the area deducted from the zonal office responsibility to the RMO	Role Existence of Resident Mines Offices.

<p>Section 24 (1): An application... for a prospecting license for a) all minerals other than building materials and gemstones; b) building materials; c) gemstones.</p>	<p>Modify An application... for a prospecting license for minerals.</p>	<p>Simplification No prospecting license for building materials</p>
<p>Section 24(3): An application for the grant of a prospecting license (a) shall contain... person; (b) shall state whether the application is for...; (c) shall state the size of the area of land which shall not exceed the maximum area prescribed as provided under section 27, and be accompanied by a plan of the area; (d) shall contain a statement giving particulars of the financial and technical resources available to the applicant; (e) shall contain details of any Mineral Rights previously granted to the applicant.</p>	<p>Modify An application for the grant of a prospecting license (a) shall contain... person; (b) <i>delete</i>; (c) shall state the size of the area of land which shall not exceed the maximum area prescribed as provided under section 27 and be accompanied by coordinates of the limits in accordance with the Technical Specifications provided in relevant regulations; (d) <i>delete (compensated by facilitating cancelling licenses)</i>; (e) <i>delete (the MCIMS is a tool for searching information when necessary)</i></p>	<p>Clarification Reference to a unique coordinate system</p>
<p>Section 24(4) and (5) Every application ... shall be registered immediately Each application shall be assigned...</p>	<p>Delete Replaced by complement of article 12(2) in the general principles</p>	<p>Consistency</p>
<p>Section 25: An applicant for a grant of a prospecting license for all minerals other than building materials or gemstones may apply for the grant of a prospecting license covering a preliminary reconnaissance period not exceeding two years.</p>	<p>Delete Can be replaced by: Preliminary Reconnaissance before prospecting without any visible activity is authorized to any Tanzanian citizen without License.</p>	<p>Processes the process to attract artisanal prospectors and give the possibility to investors to use the knowledge of Tanzanian without financial or administrative constraints for the Tanzanians.</p>
<p>Section 26: (tenders) (2) applications shall be submitted to the MAC for its advice. (3) on receipt of a report from MAC, the Minister shall consider the competing bids and select the bid which is most likely to promote ... the development ... (a) programme of prospecting</p>	<p>Replace by: And move to Section 12 (39 or new 13 as a general principle applicable to PL as well as Mining Licenses (2) applications shall be submitted to an Evaluation Committee whose members are nominated by the Minister of minerals for</p>	<p>Clarification International standards of bidding process. Note that the evaluation criteria are subject to discussion. For example, the evaluation of the financial capability could be deleted.</p>

<p>operation...and commitment of expenditures; (b) financial and technical resources; (c) previous experience and successful application.</p>	<p>evaluation of the bids after a public opening in accordance with international standards and using the following criteria: <i>(repeat criteria a-b-c of subsection (3))</i> (3) The Minister, on receipt of the Evaluation Report, shall approved the proposed selection of the winner of the Bid or request complementary information to the Evaluation Committee. (4) Contract negotiations resulting in a Development Agreement, based on the proposal and comments of the Evaluation Committee, are initiated by the Minister after his approval of the Evaluation report and the notification to the successful applicant.</p>	<p>It is useful to give a percentage to each criteria (for example (20-40) to be decided before initiating tender process and informing the bidders.</p>
<p>Section 27: (1) maximum area, (2) maximum area for different type of prospecting license; (3) amount per square km to spend annually; (4)different expenditure for different period.</p>	<p>Delete</p>	<p>Simplification Useless and unmanageable complexity. One type of Prospecting License only, no control of expected expenditure, compensated by control of activity and easy cancelling process.</p>

<p>Section 28 An applicant for a prospecting license whose application has been declared to be a successful application shall be entitled to the grant ... unless (a) he is disqualified; (b) he is in default of another Mineral right; (c) the area is subject to another Mineral Right other than...; (d) the area is designated by the Minister as an area reserved for persons holding primary licenses; (e) application made by another person who has priority (section 12); (f) area designated as area where applicant are invited by Tender.</p>	<p>Delete Sub sections (a) and (b) are defined in the principles. (c) and (e) concern "first come, first served" principle and exclusivity rights. Are defined in the principles (article 12). Sub section (f) relates to priority to tender area. Can be added in the principles section: Add 13(3) An area designated as an area for which applications are invited by Tender cannot be applied by an applicant to a prospecting or mining license from the effective date of the decision of the Minister.</p>	<p>Processes An application cannot be "successful" if non fitting all requirements</p>
<p>Section 29: Where an applicant is entitled to Prospecting License,... the license shall subsist for the following period: ...preliminary period not exceeding 2 years ... initial prospecting period not exceeding three years... ... two renewals not exceeding two years each... .. at the end of the second period, complete a feasibility study for a further period required...</p>	<p>Modify Where an applicant...shall subsist for a period of three years renewable.</p>	<p>Simplification and clarification. Administrative control to minimize. <i>Note: this section could be deleted if the option was to manage not by fixed duration but by increasing annual fees.</i> <i>Not necessary to limit the number of periods, compensated by increased fees and possibility to cancel.</i></p>
<p>Section 29(2) The Licensing authority shall... renew the prospecting license: at the end of the preliminary reconnaissance period... at the end of the initial period or... and the end of the renewal period; at the end of the second renewal period</p>	<p>Delete No impact of this article</p>	<p>Simplification No licence for reconnaissance Fixed (or absence of) period</p>
<p>Section 29(3) The ... renewal of a Prospecting License is subject to the condi-</p>	<p>Modify The ... renewal is.... That: (a) the holder... (idem)</p>	<p>Simplification No preliminary reconnaissance period</p>

<p>tion that: the holder is not in default, (<i>justified of a written notice</i>) (i) (<i>area after preliminary reconnaissance not exceeding maximum authorized for Prospecting Licenses</i>) (b) (ii) (<i>50% relinquishment at each renewal</i>)</p>	<p>(b) cancelled (c) idem</p>	<p><i>Note: the 50% relinquishment is subject to discussion.</i></p>
<p>Section 30 not later than 4 weeks... not later than 6 weeks...</p>	<p>Add Sub section (3) if the Licensing Authority is not granting the License in the delay prescribed in (1) and (2), the applicant is authorized to start activity under the condition that: (a) he confirms in the Register of the Licensing Unit if the Licensing authority is not informing the holder of his decision within 30 days from the receipt of the request, the transfer is considered accepted and must be registered in the Registry as such, on the condition that: - the applicant confirms by registered letter the copy of the receipt indicating the date and time of reception; - the Licensing Authority confirms or does not reply within the next 30 days.</p>	<p>Role Defining the responsibility of the administration</p>
<p>Section 31(1) A prospecting License shall state the date of the grant of the License and the period for which it is granted; include a description and plan of the area of land... state whether the License applies to: all minerals..., building material or gemstones, both containing an explanatory note (section 37)</p>	<p>Modify A PL shall: (a) (<i>no change</i>) (b) include a map and coordinates of the limits in accordance with the Technical Specifications provided in relevant regulations; (c) <i>delete the type of Licence and replace by:</i> Include description of legal requirements concerning rights, obligations and exclusivity and priority regulations.</p>	<p>Missing information Unique coordinate system Information of the rights and obligations</p>

<p>Section 31 (2) In determining the date for the commencement.... The Licensing authority may take account of any period not exceeding six months To make any necessary preparation for prospecting operations</p>	Delete	Role Not in accordance with the role of the State defined in the National Policy
<p>Section 32(1) ... A prospecting Licence confers the exclusive right on prospecting operations ... for minerals to which the License applies providing that: ... the holder of a PL for OMBG may investigate and assess deposits of gemstone found... (for Preliminary Reconnaissance period of more than 1000km²), exclusive right not extended to any mineral not designated in the prospecting License</p>	Modify A PL confers the exclusive right on prospecting operations for all minerals. Delete a and b (a) <i>all minerals</i> (b) <i>no reconnaissance, valid for all minerals</i>	Simplification to promote prospecting and mining Unique type of Licence for any mineral. No PL for Building Material.
<p>Section 32 (2) ... the holder may ... erect camps and temporary buildings, and may erect installations in any water forming part of the prospecting area.</p>	Add If the holder is using village land, he shall apply compensation rules defined in section 96(3), the case may be.	Clarification Free access for prospectors, but taking into account possible compensation.

<p>Section 32 A holder of a Prospecting License for gemstones (who recovers gemstones) may dispose of the gemstones by sale to a licensed dealer and shall promptly submit... to the Commissioner, showing name, weight, receipt... (Pursuant to subsection 3) be deemed to be an authorized miner.</p>	<p>Delete Or Holders of prospecting Licenses are authorized to sell recovered minerals if they do not mine. (see definition in section 4)</p>	<p>Consistency Eliminate a risky and complex specificity that cannot provide any efficient result. <i>Note: deleting this section, prospectors cannot sell gemstones officially.</i> <i>But a Mining License should confer the right to prospect and mine (see section 38).</i></p>
<p>Section 33 A holder of a PL shall commence operation within 3 months... give notice to the Licensing Authority of the discovery of any mineral.. of potential commercial value. Expand on prospecting operation no less than the amount prescribed.</p>	<p>Simplify A holder of a PL shall give notice... Cancel a and c</p>	<p>Role Redefine the role of the State in accordance with the National Policy Avoid uncontrollable requirements.</p>
<p>Section 34 (Retention License) (1) The holder of a PL other than PL for building material or gemstones may apply to the Minister for the grant of a Retention License: he has identified a deposit of commercial significance, which cannot be developed for technical constraints, adverse market conditions or other economic factors of a temporary character</p>	<p>Modify The holder of a PL may apply to the Licensing authority for the grant of a Retention License: (a) and (b) similar</p>	<p>Simplification No PL for building material Condition (b) applies to Gemstones. Role of Minister</p>
<p>Section 34(2) An application for RL shall be accompanied by studies on assessment by appropriate experts or consultants acceptable by the Minister on: (extend of recovery, market conditions, economic factors) (impact of mining operations on the environment)</p>	<p>Modify An application for RL shall be accompanied by a report from the holder of the PL describing topics defined in 34 (1) a and b.</p>	<p>Processes Doubtful that PL holders require "appropriate experts acceptable by the Minister" Complexity of the application <i>(note: instead of requesting expert's advice, it would be better to ask the ZMO to make enquiry on site with the holder and provide a recommendation report).</i></p>

(such other information as the Minister may require...		
Section 34(3) Application... shall be submitted to the MAC for its advice	Modify The holder's justification report will be sent to the appropriate ZMO or RMO for survey, confirmation and recommendation.	Role Not the role of the MAC
Section 35 (4)... before renewing, the Minister may require the holder to provide him with such updated studies and assessment... and shall refer to the MAC for its advice. (conditions of surrender RL) b. where the holder... fails to show cause within a reasonable time c. Before serving a notice ... refer the matter to MAC	Replace Minister by Licensing authority Modify (4)... before renewing, the holder shall provide an updated justification report... and the Licensing authority shall refer to the appropriate ZMO or RMO for survey, confirmation and recommendation. (1) (b) where the holder.... within 30 days. c) ... refer the matter to the appropriate ZMO or RMO.	Role of Minister, MAC, ZMO

Division B: special Mining License, Mining License, Gemstone Mining License	Replace in all the division these 3 types by "Mining License"	Simplification
Section 36 (1) ... the holder of a PL or RL is entitled on application to the Minister, pursuant to section 38, to the grant of a SML, on application to the Minister pursuant to section 47 or 51 to the grant of a ML or a GML for the mining within the PL or RL area of minerals to which the PL or the RL applies.	Simplify The holder of a PL or RL is entitled on application to the Licensing authority to the grant of a ML for the same area.	Simplification and clarification
Section 36(2) Any person may apply to the minister for the grant of: a SML for the mining of minerals other than Building materials, a ML for the mining of minerals other than gemstones a GML in any vacant area, not part of a reserved area or in any area subject only to a PL for building material or gemstones.	Modify Any person may apply to the Licensing authority for the grant of a Mining License in any vacant area not part of a reserved area.	Processes Exclusivity.
Section 37 When an application is made for a SML, ML or GML for an area which include an area subject to: PL for building material PL for gemstones PPL demarcated The licensing authority... (<i>follow condition of notice to the holder of PL to surrender the area</i>)	Modify When an application for ML is made for an area which include a PL, the Licensing authority shall inform the holder than he has to surrender the area after 30 days, provided he does not justify in existing reports discovery of minerals before the applicant application date for the applied area and he is not applying for a mining license.	Missing Information Guarantee security of investments by PL Simplification Or simply guarantee exclusivity without restriction.
Sections 38-45 (SML) Sections 46-50 (ML) Sections 51-55 (GML)	Unify and clarify rights and obligations of a unique Mining License application. All sections are replaced by the following sections	Simplification Inconsistence of the three Mining Licenses Simplification of the Licensing application system Reduce discriminatory decisions Revise the role of Minister, Mac,

		and other officers.
New 38	A Mining License shall confer on the holder the right to prospect for and mine minerals or building material, according to the type of License	Simplification See section 51. <i>Note: Prospect and mine. Eliminate the justification for PL for building material, and the authorization of PL for gemstone to sell production.</i>
New 39	A Mining License may be granted: (a) for building materials (b) for minerals	Simplification <i>Note: The two types are used for specifying some special conditions.</i>
New 40 (1)	An application for a Mining License shall be made to the Licensing authority and shall be in the form prescribed by the Regulations and accompanied by the prescribed fees and prescribed documents described in sub-section 40(2).	Consistency and missing information. <i>Note : combination of sections 38(1), 47(1) and 51(2)</i>
New 40 (2)	(2) All applications for Mining License shall be accompanied by: (a) in case of an entitled applicant, the reference to the relevant Prospecting License (b) a statement for the period for which the license is sought, which cannot exceed the maximum duration not exceeding 25 years for large-scale mines and 10 years for small-scale Mines; (c) a measurement of the size of the area of land which shall not exceed the maximum area prescribed as provided by Regulations and be accompanied by coordinates of the limits in accordance with the Technical Specifications provided in relevant regulations;	Processes <i>Note: combination of 38 (2), (3) and (4), 47, and 51(3). Delete all financial information (capital investment, recovery rate)</i>

	<ul style="list-style-type: none"> (d) to the best of the applicant's knowledge and belief a statement of the deposits of minerals for Mining License of minerals; (e) the proposed program for prospecting, the case may be, and mining, which the applicant proposes to undertake during the duration of the License; (f) the measures that the applicant proposes to take in relation to adverse impact to the environment; 	
<p>New 40 (2)</p>	<p>(2) All applications for Mining License shall be accompanied by:</p> <ul style="list-style-type: none"> (g) in case of an entitled applicant, the reference to the relevant Prospecting License (h) a statement for the period for which the license is sought, which cannot exceed the maximum duration not exceeding 25 years for large-scale mines and 10 years for small-scale Mines; (i) a measurement of the size of the area of land which shall not exceed the maximum area prescribed as provided by Regulations and be accompanied by coordinates of the limits in accordance with the Technical Specifications provided in relevant regulations; (j) to the best of the applicant's knowledge and 	<p>Processes <i>Note: combination of 38 (2), (3) and (4), 47, and 51(3). Delete all financial information (capital investment, recovery rate)</i></p>

	<p>belief a statement of the deposits of minerals for Mining License of minerals;</p> <p>(k) the proposed program for prospecting, the case may be, and mining, which the applicant proposes to undertake during the duration of the License;</p> <p>(l) the measures that the applicant proposes to take in relation to adverse impact to the environment;</p>	
New 40(3)	<p>(3) where the Mining operation intended to be carried out fall within a scale of Mining operation set out in the Regulation, the applicant of a License shall produce</p> <p>(a) an Environmental Impact Assessment Report as set out in the Regulations.</p> <p>(b) The applicant's proposals with respect to the employment and training of citizens of Tanzania.</p>	<p>Consistency</p> <p><i>Note: Large-scale Mining, adaptation of section 64 (1) of specific conditions stated in the SML in the current Act.</i></p>
New 40 (4)	<p>All applications for a large-scale Mining License shall be submitted to an Evaluation Committee for recommendations and comments to the Licensing Authority within 30 days from the date of their submission to the Committee.</p>	<p>Role</p>
New 41	<p>(1) The LA shall grant a Mining License taking into account the recommendations of the Evaluation Committee, the case may be, and shall decide whether or not to grant the License;</p> <p>(2) The LA shall not reject an application except for condi-</p>	<p>Role and processes</p> <p><i>Note: Combination of sections 39, 48, 52.</i></p> <p><i>Do not involve the State in decisions which are not in accordance with its role defined in the National Policy</i></p> <p><i>Limit possibility of negotiations to the statements and indica-</i></p>

	<p>tions specified in the Law and Regulations. If the application is rejected, the LA shall give notice to the applicant justifying the reason of the reject, which must be in accordance with the terms of the Act.</p> <p>(3) The LA can negotiate with the applicant special requirements with the applicant concerning section 40 (3) sub-sections b), d) and f) based on recommendation of the Evaluation Committee.</p> <p>(4) The LA shall give notice to the applicant of the acceptance of the application and of special conditions resulting from (3). If within 60 days of the service of such notice, the applicant fails to inform the LA of his willingness to accept the proposed mining License, his application shall be deemed to have lapsed.</p>	<p><i>tions of the applicant</i></p>
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<p>New 42</p>	<p>A mining License shall include:</p> <ul style="list-style-type: none"> (a) the date of the grant and the period, not exceeding 25 years for large-scale mines; (b) a map and co-ordinates of the limits in accordance with the Technical Specifications provided in relevant regulations; (c) the type, if granted for building material or minerals; (d) the programme of mining operations; (e) the applicant's environmental management plan; (f) the applicant's proposals for the employment and training of citizens of Tanzania. <p>As accepted by the LA, which shall form part of the License.</p>	<p>Processes and simplification Similar to section 41, but extended to any type of Mining license</p>
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<p>Section 44 ... the holder of a SML (44), ML (49), SML (53) shall, as a condition of the License (44 only): develop mining area and carry on mining operations in... compliance with the program , “environmental management plan and commence production in accordance with the program...”(SML), “with due diligence” (ML, GML) Employ and train citizen... (SML)) Demarcate and keep demarcated in the prescribed manner the mining area (all) Take all appropriate measure for the protection of the environment (ML, GML) ... bond...(SML, ML)</p>	<p>The holder of a Mining License shall, as a condition of the License</p> <ul style="list-style-type: none"> (a) develop... (idem) (b) employ (idem) (c) demarcate and keep demarcated the mining area in accordance with the prescription of the appropriate regulations. (d) Take all appropriate measures for the protection of the environment in accordance with the applicant’s environmental management plan (e) Whenever required by the LA, provide for posting of a rehabilitation bond, as provided in the Regulation, to finance the costs of rehabilitating and making safe the mining area on termination of mining operations where the holder has failed... 	<p>Processes and simplification From section 44, 49(2), 53(2) Consistency Focus on contractual conditions, complete and better specify</p> <p>Standard for all Licenses, simplification and efficiency</p>
<p>Section 45 (1) The holder of a SML may make amendment to the programme of mining operations; the environmental, management plan... the program of employment...</p>	<p>Replace SML by Mining License ...propose amendment</p>	

<p>Section 45 particulars to the amendments, ...including impact to the environment..., shall be served on the Minister, and the amendment shall have effect when so served. (if altering substantially) any provision of the license, should not take effect without express approval of the Minister... refer the amendment to the MAC for advice. On receiving the advice of MAC, the Minister shall ... determine whether or not to approve the amendment, and ... if approves... (define conditionality) .</p>	<p>Modify (2) proposed amendments shall be submitted to the approval of the LA, who can decide in case of important alteration of the conditions of the License or environmental issues, request the recommendations of the Evaluation Committee; (3) The LA should inform the holder of the final decision, not later than 30 days after the proposal, based on the provision of the Act and especially section 41.</p>	<p>Clarification</p>
<p>New 46(1) (copy 42(1)): The holder of a SML may, at any time not later than one year before the expiry of that license, apply to the Minister for the renewal... shall be in the prescribed form and shall be accompanied by the prescribed fees section 55(1) and, in case of ...falling within section 64 (<i>large-scale</i>) an Environmental management plan ...to be conducted during the renewal period.</p>	<p>Modify: The holder of a Mining License may, at any time not later than 6 months before the expiry of that License, apply to the LA for the renewal... shall be in the prescribed form and shall be accompanied by the prescribed fees. Delete And , in case of (<i>Defined in 46(2)</i>)</p>	<p>Consistency and missing information ensured by one unique section See sections 42, 50, 55 Delay reduced to fit with all Mining Licenses</p>
<p>New 46(2) Sections 42(1), 50(1), 55(1) ... shall be accompanied by ... an environmental management plan (50), an environment management plan (42(2d), an environment management plan (55(2)) Sections 42(2) An application under this section shall include: a statement of the period not</p>	<p>All applications for renewal of a Mining License shall be accompanied by: (a) a statement for the period for which the license is sought, which cannot exceed the 25 years for large-scale mines and 10 years for small-scale mines. (b) if the area of the renewed License is re-</p>	<p>Consistency and simplification Combination of 42(2) (3), 50(1), 55(2) Simplify and focus on contractual issues, not on mining management (not the role of the State)</p>

<p>exceeding 25 years (42) (10years section 50) details of ...reserves capital investment to be made, production costs and revenue forecasts any expected changes in meth- ods of mining and treatment expected increase or reduction and estimated life of the mine proposed program of mining operations environmental management plan if.. only a part...a plan identifying this part</p>	<p>duced, a map accompa- nied by coordinates of the limits in accordance with the Technical Speci- fications provided in relevant regulations; (c) to the best of the appli- cant's knowledge and belief a statement of the deposits of minerals for Mining License of miner- als; (d) the proposed program for mining, which the ap- plicant proposes to un- dertake during the dura- tion of the License; (e) the measures that the applicant proposes to take in relation to ad- verse impact to the envi- ronment;</p>	
<p>New 46(3)</p>	<p>Add All applications for a large-scale Mining License shall be submit- ted to an Evaluation Committee for recommendations and com- ments to the Licensing Authority within 30 days from the date of their submission to the Commit- tee.</p>	<p>Missing information</p>

<p>New 47 Section 42(4) ... a SML/ML/GML shall be renewed by the Minister for a period... and the Minister may, subject to any relevant development agreement and after consultation with the applicant, renew... Section 42(5), 50(2), 55(3) The Minister may reject... if: applicant is in default... development of the mining area has not proceed with reasonable diligence minerals in workable quantity do not remain... the program of mining operation... not in accordance with good mining practice environment plan does not satisfy the requirements Section 42(6) On the renewal.. it shall be amended...</p>	<p>Replace (1) The LA shall grant a Mining License taking into account the recommendations of the Evaluation Committee, and shall decide whether or not to grant the License; (2) The LA shall not reject an application except for conditions specified in the Law and Regulations. If the application is rejected, the LA shall give notice to the applicant justifying the reason of the reject, which must be in accordance with the terms of the Act. (3) The LA shall give notice to the applicant of the acceptance of the application and of updated special conditions resulting from (4) If within 60 days of the service of such notice, the applicant fails to inform the LA of his willingness to accept the proposed mining License renewal, his application shall be deemed to have lapsed.</p>	<p>Consistency <i>Note: combination of sections 42 (4),(5),(6), 50(2), 55(3).</i> Ensure standard, transparent processes, non-discriminatory decisions, and objective criteria. Eliminate economic criteria, not the role of the State.</p>
<p>Section 54 (only GML) not later than 21 months from the date the license was granted, the holder shall submit to the Commissioner a report ...: (a) prospecting and mining operations carried on...and results (b) program of mining to carry out... (i) estimated recovery rate, treatment and disposal; (ii) holder's estimate of the ...annual production if the Minister after considering the report... and taking into account advice from the Commissioner decides .. not ensuring the efficient and beneficial use of</p>	<p>Delete</p>	<p>Consistency Very specific section for SML only. Not standard process, including for reporting, possible cancellation, tender, advice, evaluation process. Should be deleted to ensure consistency and clarity, and compensation determined by rules for cancelling License, standard tender processes,</p>

<p>the mineral resources, may, by notice, determine the license</p> <p>The Minister shall not determine a GML without giving and opportunity... to amend the plan without referring to the MAC if ...determined... the mining area will be put up for a GML by Tender...</p> <p>An application for the Grant of GML by tender shall be made in the prescribed form and estimates ...</p> <p>On receipt of a Report from MAC the Minister shall consider ... the most likely to promote efficient and beneficial development of gemstone resources, having regard to:</p> <ul style="list-style-type: none"> the program... the financial the technical resources of the applicant previous experience of the applicant <p>and shall notify the successful applicant</p>		
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<p>Division C: supplementary provisions affecting Mineral Rights under Division A and B Section 56 (surrendering)</p>	<p>Idem</p>	
<p>Section 57(1) (cancellation) When a holder fails ... <i>(conditions a,b,c,d,e)</i> The Minister may ... by notice to the holder suspend or cancel the license</p>	<p>Idem, change the end ... the LA may cancel the License subject to subsection</p>	<p>Processes Prepare efficient cancellation rules Suspension not clearly defined</p>
<p>Section 57(2) The Minister shall not suspend or cancel ... unless ... notice to the holder the holder has failed within a period of 60 days... the matter has been referred to the MAC</p>	<p>Idem except (c) refer the matter to the appropriate ZMO or RMO.</p>	<p>Processes Efficiency and communication</p>
<p>Section 59 The holder of a PL or a SML may apply to the LA for the enlargement of the area... <i>(conditions follow)</i></p>	<p>Modify The holder of a PI or ML may apply...</p>	<p>Consistency <i>(There is no risk for other licenses as they are limited in maximum area, and demand limited by expected increasing fees)</i></p>
<p>Section 60 (1) The holder of a SML, ML or GML shall notify the LA if he intends to cease or suspend production. (2) ...shall be accompanied by a report giving details ... and reasons. (3) ... the LA shall cause the matter to be investigated : if caused by an event beyond control, shall give his approval; in any other case, refer to MAC, subject to the development agreement, shall (i) give approval if fair and reasonable, (ii) direct the holder to continue.</p>	<p>Modify The holder of a PL or ML shall notify the LA if he intends to cease or suspend the License (3) the LA shall (i) give his approval and amend the production plan annexed to the License; (ii) notice the holder to continue according to the plan or to accept cancelling the License. (4). the LA cannot cancel or amend a License without informing the holder by written notice. The holder has 30 days to accept the decision, or to provide additional information to request a new decision. (5) The LA will consult the Committee before informing the holder on an irrevocable decision within 30 days. In case of non-reaction by the LA, the pro-</p>	<p>Role and missing information <i>Note: not realistic to order a holder to continue mining if he has any reason to stop activities – bankruptcy for example.</i> Clarify the role of the State. Better to declare the area vacant than forcing an activity. Conditions of closing a License must not be forgotten. Complete missing information</p>

	posal is accepted and shall be registered.	
<p>Section 61 The maximum area for which a ML or GML may be granted shall be prescribed... (with) different maximum areas for different minerals and in respect of different Mineral rights.</p>	Delete	Simplification Already said in new section 40(3)
<p>Section 62 An application for a ML or GML in an area designated as an area ... by Tender shall be: in the prescribed form accompanied by tender fees subject to the terms and conditions of the invitation to tender, shall include the matters required to be included All applications shall be referred to the MAC <i>(follow evaluation and decision, priorities, similar to section 26)</i></p>	Delete	Consistency and clarification Already stated in section ex-26, moved to section 12(2) or 13
<p>Section 63 (termination of ML or GML for under-production)</p>	Delete	Simplification, processes <i>(Note: this case enters into the legal justification for cancelling a Licence by the LA. However, this section is not consistent with the regular process – 50% of the production, no notice to the holder, specificity of ML and GML...)</i>
<p>Section 64 (1) Where the mining operation ... falls within a scale set out in Regulations (<i>Large scale</i>), the applicant produces a EIA Report... (2) The Minister may where an applicant requires and is subject on subsection (1) of environmental regulations after consultation of MAC direct that applicant is exempted...</p>	Delete	Role No discriminatory decision, standardization (1) Already said in new 40(3) (2) Ministerial decision inappropriate. Adjust regulation

<p>Division D: Primary Licenses Section 65</p> <p>(1). Any person... may apply to the Commissioner for the grant of a PPL (2). An application... shall be in the prescribed form and be accompanied by prescribed fees</p> <p>(4). An applicant who has fulfilled the requirements of subsections (1) (2) and (3) shall be granted a License. (5) A PPL authorises the holder to prospect for minerals... (7)A PPL shall be granted for one year and , on payment of the prescribed fees, may be renewed for a like period or periods (8)Except the case of an area which has been demarcated, a PPL does not confer the holder an exclusive right to search... or establish any priority of the grant of PML.</p>	<p>No change except some terms to be consistent with other amendments:</p> <p>(1). Any person... may apply the LA for the grant of a Primary License. (2). ... (add) (b) shall state the size of the area of land which shall not exceed the maximum area prescribed as provided under section 27 and be accompanied by co-ordinates of the limits in accordance with the Technical Specifications provided in relevant regulations; (4). <i>Idem, but add conditions of exclusivity from section 68:</i> ... subject to: (a) the area for which application has been made or part of it is covers or includes an area which is (i), (i),(ii) <i>same as 68 (1) b (i), (ii), (iii)</i> (5) A Primary License authorises the holder to prospect for and mine minerals... (7) A Primary License shall be granted for one year and, on payment of the prescribed fees, automatically renewed for one additional year. If the holder has not paid the prescribed fees after a 30-day period after receiving notice from the ZMO, the License is automatically cancelled and the area subject to this License declared vacant. (8) delete</p>	<p>Simplification <i>(This Division stays in place in order to define clear and simplified rules for artisanal miners.)</i> <i>The prospecting and Mining Licenses are merged into one single "Primary License" in order to simplify the process and promote activity by the locals. Delete the non-demarcated prospecting licenses and refer to section 24(1). Prospecting is free in order to promote this activity if no evident activity (works, non-temporary buildings, mines, plants...).</i> <i>Automatic renewal if payment of fees.</i> Exclusivity Support to artisanal miners</p>
<p>Section 66: <i>(application for PML)</i></p>	<p>Delete</p>	<p>Processes Useless, unique License, automatic renewal. <i>(Note: The miner should know if the mining is profitable. Better to ensure cancellation in case of unjustified freezing of activities)</i></p>
<p>Section 68 (1):</p>		<p>Simplification</p>

<p>(1). <i>The Commissioner shall grant...</i></p> <p>(2) <i>a PML ...be valid for ... 5 years and may be renewed</i></p> <p>(3) An application for renewal (of PML) may be refused if:</p> <p>(c) minerals in workable quantities do not remain to be produced.</p>	<p>(1). delete (<i>defined in 65</i>)</p> <p>(2) delete</p> <p>(3). Delete. conditions are in 65(4) except deleted (3) (c)</p>	<p>Unique License</p> <p>Automatic renewal if payment of fees.</p>
<p>Section 69.</p> <p>renewal</p>	<p>Delete</p>	<p>Renewal rules defined in 65</p>
<p>Section 70</p>	<p>Delete</p>	<p>Simplification</p> <p>'Useless</p>
<p>Section 71:</p> <p>(<i>conversion PPL into PML</i>)</p>	<p>Delete</p>	<p>Simplification</p> <p>(<i>Note: another option is to grant Primary Prospecting and Primary Mining Licenses including right of prospecting and mining with different requirements and conditions</i>)</p>
<p>Section 67:</p> <p><i>... the minimum and maximum area for a PML shall be prescribed</i></p>	<p>Modify</p> <p>The maximum area for a Primary License shall be prescribed</p>	<p>Consistency</p>

<p>Section 72 The Commissioner may, by notice in writing to the holder of a PPL or PML cancel the relevant Licence (if) ... an event would render the person ineligible...</p>	<p>Modify: (1). The LA may, by a 30-day notice in writing to the holder of a Primary License, cancel the License if: (a) an event... (b) the ZMO reports to the LA non-evidence of any activity for a License during the last 2 years (2). A License is automatically cancelled if the holder does not pay annual fees after a 30-day delay. (3) Cancellation cannot be effective before a delay of 30 days after receiving written notice from LA for the holder to comply the requirements</p>	<p>Missing information Ensure activity</p>
<p>Sections 73-85 Dealer / Broker licenses</p>	<p>Not in the study</p>	<p>No link with a Mining cadastre</p>
<p>Sections 86-93 Financial provisions</p>	<p>Not in the study</p>	<p><i>Another Project in the Ministry is involved in financial issues</i></p>
<p>Section 95(1) (a) except with the written consent of the responsible Minister, in respect of (i) any land dedicated or set apart for any purpose other than mining</p>	<p>May be modified according to the definitions of the Lands Act.</p>	<p>Co-ordination <i>Note: the public utility is defined in the Lands Act. It is necessary to check with this Ministry of the definition of the Mining Act is in conformity with it.</i></p>
<p>Section 95(1) (b) except with the written consent of the lawful occupier, in respect of (i) any land which is the site of, or within 200m of any inhabited, occupied or temporarily unoccupied house or building. (ii) any land within 50m... prepared in good faith for the growing of agricultural crops... (iii) any land, ... during the year preceding, agricultural crops have been raped.</p>	<p>Modify: ... (i) any land which is defined as subject of right of occupancy or any right defined in the Lands Act, within 200m of a building or 50m from an area dedicated to agriculture. Delete (ii), (iii), just refer to the Lands Act.</p>	<p>Co-ordination Conformity with Lands Act Based on the updated definition of the lawful occupier, it is necessary to refer to the legal definition of the occupancy or other defined rights (customary, village...)</p>
<p>Section 95(1) (b) (end)... in the opinion of the</p>	<p>Replace: If the consent is delayed by</p>	<p>Role Discriminatory decision</p>

Minister and on advice of the MAC,... the Minister may... direct that the need for the consent shall be dispensed...	more than 30 days, the Licensing authority can direct that the consent shall be dispensed. If the consent is refused, the Commissioner may, at the request of the holder, authorise the operation under adequate compensation to the lawful occupier.	Simplification and clarification
Section 95(1) (i) (<i>the holder shall not exercise...in...</i>) any land occupied by any installation or works used in the course of prospecting operations by the holder of PL in the same area.	Delete	Clarification Exclusivity
Section 96(2) Lawful occupier ... shall not erect any building or structure in the area (<i>covered by the License</i>) without the consent... of the holder... But if the Minister considers that the consent is being unreasonably withheld, he may give his consent to the lawful occupier to do so.	If the consent is delayed by more than 30 days, the Licensing authority can direct that the consent shall be dispensed. If the consent is refused, the Commissioner may, at the request of the lawful occupier, authorise the building to lawful occupier.	Clarification Clarify the rule
Section 101(2) The Commissioner may refuse to decide any dispute referred to him under this Part.	Delete The Commissioner may decide to refer to the Civil Court... to solve the dispute.	Role Role and responsibility of the Commissioner
Section 107 (4) "radioactive mineral" means...	Revise the definition with experts	Clarification
Section 108 (4) The consent of the LA ... shall not be unreasonably withheld	The LA shall give his decision within 30 days. In case of non reaction by the LA, the proposal is accepted and shall be registered	Missing information
Part XI: Temporary Provisions	Not included in the study	

SCHEDULE 1 Mining Advisory Committee	Delete	Role Redefinition of the institutional organization, roles and responsibilities
SCHEDULE 2 Existing Controlled areas and Diamond Protection Areas	Not in the study	
SCHEDULE 3 Reports and records Paragraph 1. subject to sub-paragraph (2), the holder of a PL shall: keep ... records : submit, at least once in every three months... copies to the Commissioner	Delete reference to SP 2. <i>Note: the list (i) to (xi) should be carefully checked if useful and usable.</i> The holder shall: (b) submit once per year...	Role <i>(Note: it is doubtful that the Commissioner can efficiently use and study such reports. On the other hand, control of the provision of these reports by all holders needs important manpower that is not available)</i>
Paragraph 1(2). The Minister may ... dispense or modify... (1)	Delete	Consistency
Paragraph 2 The holder of a SML shall...	Replace The holder of a Mining License shall...	Simplification
Paragraph 2(2) b Submit to the Minister such reports, records or other information as the Minister may require...	Complete: submit once per year such reports to the Commissioner; submit to the Minister (<i>same text</i>)...	Role <i>Note: a list similar to the one of the Prospecting License should be carefully identified, based on useful and usable information</i>
Paragraph 3. The holder of a ML or a PML...	Delete	Consistency and simplification
Paragraph 4. In addition..., the holder of a GML...	Delete	Consistency and simplification
SCHEDULE 4 Savings and transitional provisions	Not in the study	

3 Heading of Section of the proposed Amendments of the Act

S.	Title	Changes	New Title
1	short title and commencement	No change	Short title and commencement
2	application	No change	Application
3	Act does not apply to Petroleum	No change	Act does not apply to Petroleum
4	Interpretation	Modified some definitions Other new definitions	Interpretation
5	Control of Minerals	No change	Control of Minerals
6	Authority required for prospecting or mining	No change	Authority required for prospecting or mining
7	Mineral Rights	Simplification	Mineral Rights
8	Restriction of grant of Mineral Rights	Addition in (1) Deletion (3)	Restriction of grant of Mineral Rights
9	Mineral Rights transferable	Replaced	Mineral Rights transferable
10	Development agreement	Modified	Development agreement
11	Joint and several obligations	No change	Joint and several obligations
12	Priority between competing applications	Deleted (2) Add new sub-section	Priority between competing applications
13	Application for Mineral Rights by tender	Replaced (1) by 2 sub-section Deleted (2) Add 13(3)	Application for Mineral Rights by tender
14	Exclusive areas for Primary Licensees	Replaced	Exclusive areas for Primary Licensees
15	Offences relating to unauthorized trading of Minerals	Modified (1) (3) Deleted (5)	Offences relating to unauthorised trading of Minerals
16	Appointment of Commissioner for Minerals	No change	Appointment of Commissioner for Minerals
17	Execution and Delegation of functions of Commissioner	No change	Execution and Delegation of functions of Commissioner
18	Geological service	No change	Geological service
19	Geological survey, mapping and prospecting on behalf of the Republic	No change	Geological survey, mapping and prospecting on behalf of the Republic
20	Mining Advisory Committee	Deleted	<i>cancelled</i>
21	Prohibition against the disclosure of information	No change	Prohibition against the disclosure of information

22	Indemnity	Replaced	Responsibility of MEM's officers
23	Zonal Mines Office	Add (2)	Zonal and Resident Mines Office
24	Application for Prospecting License	Modified (1) (3) Deleted (4) (5)	Application for Prospecting License
25	Preliminary Reconnaissance Period	Deleted (or Replaced)	Reconnaissance rights
26	Prospecting License by tender	Replaced	Prospecting License by tender
27	Maximum areas, minimum expenditures	Deleted	<i>Cancelled</i>
28	Conditions for grant of prospecting license	Deleted (Replaced by other sections)	<i>Cancelled</i>
29	Grant, duration and renewal of prospecting license	Modified (1) Deleted (2) Modified (3)	Grant, duration and renewal of prospecting license
30	Notification of grants	Add (3)	Notification of grants
31	Content of Prospecting License	Modified (1) Deleted (2)	Content of Prospecting License
32	Rights of holder of Prospecting License	Modified (1) Complete (2) Deleted (or Replaced) (3) Deleted (4)	Rights of holder of Prospecting License
33	Obligation of holder of Prospecting License	Simplify	Obligation of holder of Prospecting License
34	Application for Retention License	Modified	Application for Retention License
35	Grant of Retention License	Modified (4) (5)	Grant of Retention License
36	Applicants	Modified	Applicants
37	Effect of application under this head of PL for building materials	Modified	Effect of application under this head of PL for building materials
38	Application for Special Mining License	Replaced by news 38-46	<i>Cancelled</i>
39	Grant of Special Mining License	Replaced by news 38-46	<i>Cancelled</i>
40	Duration of Special mining License	Replaced by news 38-46	<i>Cancelled</i>
41	Content of Special Mining License	Replaced by news 38-46	<i>Cancelled</i>
42	Renewal of Special Mining License	Replaced by news 38-46	<i>Cancelled</i>
43	Rights of holder of SML	Replaced by news 38-46	<i>Cancelled</i>

44	Obligations of holders of SML	Replaced by news 38-46	<i>Cancelled</i>
45	Amendments of SML by holder	Replaced by news 38-46	<i>Cancelled</i>
46	Mining Licenses	Replaced by news 38-46	<i>Cancelled</i>
47	Application for ML for minerals other than gemstones	Replaced by news 38-46	<i>Cancelled</i>
48	Grant og ML for minerals other than gemstone	Replaced by news 38-46	<i>Cancelled</i>
49	Rights and obligations of holders of ML for minerals other than gemstones	Replaced by news 38-46	<i>Cancelled</i>
50	Renewal of ML for minerals other than gemstones	Replaced by news 38-46	<i>Cancelled</i>
51	Application for GML	Replaced by news 38-46	<i>Cancelled</i>
52	Grant of GML	Replaced by news 38-46	<i>Cancelled</i>
53	Rights and obligations of holders of GML	Replaced by news 38-46	<i>Cancelled</i>
54	Report of prospecting and mining under GML	Replaced by news 38-46	<i>Cancelled</i>
55	Renewal of GML	Replaced by news 38-46	<i>Cancelled</i>
N38		Based on 51	Mining Licenses
N39			Types of Mining License
N40		Based on 38, 47, 51, 64	Application for granting Mining License
N41		Based on 39, 48, 52	Special Development agreements
N42		Based on 41, extended	Content of Mining License
N43		Based on 43, 44, 49, 53	Rights of holder of Mining Licenses
N44		Based on 44, 49, 53	Obligations of holders of ML
N45		Based on 45	Amendments of Mining Licenses by holder
N46		Based on 42, 50, 55	Renewal of Mining License
N47		Based on 42, 50, 55	Grant of Mining License
56	Surrender of land subject to Mineral Right	No change	Surrender of land subject to Mineral Right
57	Suspension and cancellation of Mineral right	Slight changes	Suspension and cancellation of Mineral right
58	Extension of Mineral Right during applications	No change	Extension of Mineral Right during applications

59	Enlargement of certain Mineral Rights	Modified	Enlargement of Mineral Rights
60	Holders of certain Mineral Rights ceasing or suspending mining operations	Modified	Holders of Mineral Rights ceasing or suspending mining operations
61	Maximum area for which licence may be granted	Deleted	<i>Cancelled</i>
62	Allocation of mining License or GML by Tender	Deleted	<i>Cancelled</i>
63	Termination of mining license or GML where production is insufficient	Deleted	<i>Cancelled</i>
64	Additional requirements for certain ML and GML	Deleted	<i>Cancelled</i>
65	Application for and grant of PPL	Modified (1) to (7) Deleted (8)	Application for and grant of Primary License
66	Application for PML	Deleted	<i>Cancelled</i>
67	Minimum and maximum area	Modified	Maximum area
68	Grant of PML	Replaced by 65	<i>Cancelled</i>
69	Renewal of PML	Deleted	<i>Cancelled</i>
70	Allocation of PML to mine exclusive primary area	Deleted	<i>Cancelled</i>
71	Conversion of PML to certain mineral rights under Division B	Deleted	<i>Cancelled</i>
72	Cancellation of PML	Modify (1) (2) (3)	Cancellation of PML
73-85	Licenses for dealing in raw gold, gemstones and other minerals	Not in the study	
86-93	Financial provisions	Not in the study	
94	Security of gold and gemstones mining operations	No change	Security of gold and gemstones mining operations
95	Restriction of rights of entry of holders of a Mineral Right	Modified (1)b replaced (1)i deleted	Restriction of rights of entry of holders of a Mineral Right
96	Right under a Mineral Right to be exercised reasonably	(2) Modified	Right under a Mineral Right to be exercised reasonably
97	Renewal of minerals	No change	Renewal of minerals
98	Wasteful practices	No change	Wasteful practices
99	Reports, records and information.	No change	Reports, records and information.
100	Authorized officers, power of entry	No change	Authorized officers, power of entry
101	Commissioner may decide	(2) Deleted or modified	Commissioner decides

	disputes		disputes
102	Enforcement of the Commissioner's orders	No change	Enforcement of the Commissioner's orders
103	Appeal to High Court	No change	Appeal to High Court
104	Rules	No change	Rules
105	Register of Mineral Rights	No change	Register of Mineral Rights
106	Evidentiary provision	No change	Evidentiary provision
107	Radioactive minerals	Proposed modification of (4)	Radioactive minerals
108	Transfer of control over company	(4) Modified	Transfer of control over company
109	Insurance and indemnity	No change	Insurance and indemnity
110	Regulations	No change	Regulations
111	Obstruction of holder of Mineral Rights	No change	Obstruction of holder of Mineral Rights
112	Miscellaneous offences	No change	Miscellaneous offences
113	Offence committed by body corporate	No change	Offence committed by body corporate
114-117	Repeals, savings transitional and temporary provisions	Not in the study	

4. Resulting changes in the Regulations, 1999

4.1 The Mining Regulation, 1999

General	Suppress specific references to GML Replace Commissioner by LA	Simplification
Part II Section 3(1) An application for a mineral right under Division A or B... (uses) form MRF 1 or 3 or 5....	Change, MRF 1 (prospecting), 3 (Mining). Cancel 5 (GML) The forms are modified accordingly	Simplification
Section 3(2) An application... shall be accompanied by a plan... drawn on a topographic map to a scale of 1:50,000 giving dimensions.	shall state the size of the area of land be accompanied by a topographic plan recognised by the LA to a minimum scale of 1:50,000 co-ordinates and the definition of the limits in accordance with the Technical Specifications provided in relevant regulations	Missing information The map should be the "official" map described in other sections, means the topographic map provided by the Survey division of the ministry of Lands.
Section 3(3) (c) forward to the Commissioner	... forward to the LA	Role
Section 4 (b) In the case of PML be accompanied by a sketch map of the mining area applied for giving dimensions in ha and precise particulars of direction and measurements as much as possible to enable PML applied for to be correctly plotted on the Official Mines sheet or official map	Be accompanied by a sketch map with co-ordinates and area, to be applied on the topographic maps in the relevant ZMO/RMO	Missing information and clarification
Section 5 (1) Maximum area:: (a) PL with preliminary reconnaissance pe-	Delete There is no limit, the financial aspects should compen-	Simplification

<p>riod, 5000 sq.km.</p> <p>(b) PL for AOBG 200 sq.km.</p> <p>(c) PL Gem 1000 ha</p> <p>(d) PL BM 100 ha</p> <p>(e) ML AOBG 1000 ha</p> <p>(f) GML 100 ha</p> <p>(g) ML BM 100 ha</p> <p>(h) PPL AOGG 10 ha</p> <p>(i) PPL BM 2 ha</p> <p>(j) PML AOBG 10 ha</p> <p>(k) PML BM 2 ha</p>	<p>sate the absence of maximum (the fees increase with the area).</p> <p>This is justified by the absence of maximum for SML, and the possibility of merging PML (see section 5(2))</p>	
<p>Section 5 (2) Sub-regulation (1) (j) and (k) shall not apply to PML amalgamated...</p>	Delete	Simplification
<p>Section 7 (1) An application for renewal of Mineral Right under A or B ... (uses) Form MRF 2, 4 or 6...</p>	Cancel	Simplification
<p>Section 8-10: fees</p>	Not studied but essential to ensure that Licenses are granted for an appropriate area.	Out of the scope of the ToRs.
<p>Section 18(1) Where two ... applications over the same area .. are received the same day,... those applications shall be deemed to have been received simultaneously...</p>	Cancel. Subsection (4) applies in all the case	Consistency Apply first come, first serve using date and time.
<p>Section 18(2)(3) (2) at the time of opening the bids... (3) priority where there are more than opne highest bid...</p>	Delete. Process clearly specified in the Act	Processes
<p>First schedule</p>	Not studied	Out of the scope of the TOR
<p>Second schedule</p>		See next chapter

4.2 Second Schedule: Forms

The objective is to minimise the modifications of the forms.

The list of forms is modified as follows

form	Use	New form	change
MRF1	Application for Mining Rights under Division A	MRF1	Minor changes
MRF2	Application for renewal of Mining Rights under Division A	Delete	
MRF3	Application for Mining Rights under Division A	MRF3	New title Changes
MRF4	Application for renewal of SML or ML under Division B	Delete	
MRF5	Application for GML under Division B	Delete	
MRF6	Application for renewal of GML under Division B	Delete	
MRF7	Application for PPL	MRF7	Minor changes
MRF8	Application for PML	MRF8	Minor changes
MRF9	Registration of a demarcated area	MRF9	No change
MRF10	PPL	MRF10	No change
MRF11	PML	MRF11	No change
MRF12	Application for renewal of a PPL	Delete	
MRF13	Application for renewal of a PML	Delete	
MRF14	Application for suspension of work	MRF14	No change
MRF15	Certification of suspension of work	MRF15	
MRF16	Application for amalgamation of PML	MRF16	Extended to all types of License
MRF17	Certification of amalgamation of PML	MRF17	Extended to all types of License
MRF18	Surrender of a PML	MRF18	Extended to all types of License

There are no major changes in the forms, so they are not detailed in this Report.

The minor changes include reference to deleted sections of the Act, references to categories simplified in the amended Act or to suppressed limitations (maximum area, period) or extension of the use of the form to all types of Licenses

The associated information to fill can be deleted from the form or simply kept for information only, even though not formally used in the application process.

**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

DRAFT FINAL REPORT
October 12, 2002

Inventory of Mineral Rights

Report 3

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List of Abbreviations

GML	Gemstone Mining License
LU	Licensing Unit
ML	Mining License
MRD	Mineral Rights Database
MRI	Mineral Rights Inventory
SML	Special Mining License
PML	Primary Mining License
PL	Prospecting License
PLR	Prospecting License, reconnaissance
PPL	Primary Prospecting License
RL	Retention License
RMO	Resident Mines Office
ZMO	Zonal Mines Office

Executive Summary

Assessment of the Existing Mineral Rights Inventory

1. The current system –‘database’ – for administration of mineral rights – is based on Microsoft Excel and MapInfo files, and stored on several PC’s none of which are linked. The system consists of about 160 data files.
2. The data entry procedures are inadequately described, and applications and granted licenses are not systematically entered. Moreover back-up procedures are undertaken randomly and no safe storage is available.
3. The ‘database’ is does not contain all licenses/records, and key data are frequently not entered or contain errors.
4. The ‘database’ and set-up can not guarantee that the granted licenses are not overlapping.
5. A clean database has to established.
6. Implementation of a new database and Mineral Rights Inventory is urgently needed.

Development of a New Mineral Rights Database

7. A new database for use as a Mineral Rights Inventory is developed. The structure of the database is developed in close co-operation with the Client to ensure that the database is tailor-made to suit the Clients needs, and considering also the requirements when a new MCIMS is implemented.
8. The database is programmed in MS Access, part of the MS Office Professional suite of programs and communicates easily with the all GIS programs, i.e. MapInfo. In addition the use of Access allows migration of data to other platforms in the future, i.e. SQL Server technology.
9. The database is constructed as a relational database, ensuring that modification and additions of the database structure are possible when the needs are changing over time.
10. The documentation of the database is provided as a schematic presentation of the data relationships – the data structure, and as descriptions of database table applications.
11. The user interface is by database forms, which automatically pops up when the program opens. “Enter License Data” opens the main data entry form. “Add new license holder” displays a form for entering all relevant data on the applicant and data related to transfer of license. The database provides sub-forms for entering detailed information (such as fees, addresses, co-ordinates etc.) drop down menus.
12. The sub-form “Co-ordinates” allows entering an unlimited number of co-ordinates. For new application the co-ordinate is set to “Applied for”, and later when the license is granted the status us changed to “Granted and Verified”, and further changes is then disabled.
13. Queried information can be printed through standard Access Report Generator. Moreover some search and reports menus are developed to support the used search and report criteria.

14. The database is provided to the Client as a CD, and is installed on the Project Compac Desk Top PC.
15. Three different types of Data Entry Forms are developed ensuring that all relevant information for each license is systematically recorded and systematically validated before being entered to the Mineral Rights Inventory; moreover it allows keeping track of any amendments made to each license.
16. Three different types of Data Entry Forms are developed ensuring that all relevant information for each license is systematically recorded and systematically validated before being entered to the Mineral Rights Inventory; moreover is allows keeping a track of any amendments made on each license.

Plan of Verification

17. Due to the fact that both the confidential files and the Mineral Rights 'database' are characterised by data errors, missing records and missing key information, alternative sources have to be established for the development of a clean database/clean Mineral Rights Inventory (MRI).
18. To establish the clean MRI it is deemed unavoidable to notify – zone by zone - all license holders via the Gazette and the press requesting them to submit license documents and receipts of fees paid.
19. Based on the information submitted, co-ordinates and other relevant data must be updated and entered by special registration forms, for later assessment and registration in the new Mineral Rights Inventory.
20. All overlapping co-ordinates must be identified and corrected considering the types of licenses involved in the overlap, and if they have the same strength priorities must be made based on date and time of application.
21. It is recommended that for a pre-defined period during the establishment of the clean inventory no applications should be accepted and no applications should be granted. The appropriate legal measures for such a graze period should be ensured by MEM.
22. Subsequently the licensee shall submit a Surveyors certificate of beacon positions proving that the actual beacon position in the field is in accordance with the new license certificate.
23. It is assumed that up to about 4,000 license holders will comply with the notice, thus about five parallel offices is required, each staffed with not less than three professionals, two technicians and secretaries. Moreover each office should be equipped with e.g. PC, photocopier, printer, telephone and filing cabinets.
24. It is estimated that the duration for undertaking all phases of the Verification Plan for all zones is about 14 months. The first zonal area could be ready after about five months, and the other zonal areas the following successively.

1. Introductory Notes

According to the TOR the Consultant shall 'undertake an inventory of all mineral rights'.

During the fact-finding mission (July 2001), it was then observed that the mineral rights data were not organised adequately and that it would consequently be difficult for anyone to guarantee the availability of a complete set of such data from which it follows that the Consultant would not be able to guarantee that all mineral rights and all relevant data were included - for it to be a complete inventory of all mineral rights. Consequently, in our offer we proposed for this task a model based on a pilot study; and this was also included in the Contract between MEM and GEUS subsequent to further discussions in January 2002. Therefore all discussions on the Inventory with the Client up till and during the Inception Phase were based on the pilot study approach, and this became the approach described in the Inception Report.

However, on May 20th, 2002 the Client informed us that the pilot study concept was not acceptable and requested the service to be provided strictly according to the TOR. This new request was accepted and it was agreed that the Client not later than June 21st, 2002, should provide all data for the Inventory in a standard digitised format.

The Client experienced severe difficulties in providing adequate data for the mineral rights Inventory. Several meetings have been held addressing this subject, and the Client has been appropriately informed in writing about the difficulties this created. At a concluding meeting with the Commissioner for Mineral Development, the Project Manager and the Core Team, held July 19th, 2002, the following resolutions were made and became the basis for all further work in this task:

- The Client failed to provide adequate digitised data for the Inventory, and therefore
- The Consultant is not obliged to undertake an inventory of all existing mineral rights.
- The Licensing Unit shall select not less than ten and not more than forty "hard copy" files encompassing all relevant key data.
- The Consultant shall enter these sample records to a Mineral Rights Database to be constructed.
- The Consultant shall design and undertake the programming work of an Access database for a Mineral Rights Inventory to replace the existing non-operational Excel/MapInfo based 'database'.

As a consequence of the data delivery problems a reformulation of parts of Task 3 was inevitable. The reformulated part Task 3.1 and 3.2 addresses the strong need for an operational database for the administration of Mineral Rights and applications. The Task 3 is therefore reformulated as follows,

- 3.1 Assessment of the existing Mineral Rights Inventory
- 3.2 Development of a new Mineral Rights Database
- 3.3 Propose a plan to verify the status of all mineral rights issued to date.

2. Assessment of the Existing Mineral Rights Inventory

The existing mineral rights 'database' has been scrutinised with great care and tenacity with the objective to undertake an update of the database and based on the types of errors encountered to provide the plan of verification. At the same time, the assessment was expected to provide ideas to be included in the to be suggested structure of the new MCIMS.

2.1 The Current Mineral Rights Database – An Overview

The System

The current mineral rights data are not kept in a proper database. The data are kept in various files of different formats, such as Microsoft Excel, Word and MapInfo and the files are not properly linked. The data files are kept on three PC's, none of which are linked together by any form of net installations; the Excel files are mainly stored on one PC, and the MapInfo files mainly stored on two other PC's in a different room. Transfers of data files between the PCs are by diskette or by keyboard typing.

The present MapInfo set-up for checking overlap between licenses is documented, but the facilities have not always been used correctly and to their full extent. Therefore it must be concluded that the current Mineral Rights database system is not documented.

An overview of the hardware and software of the existing system is given in Report 4, Table 1.

The data entry procedures:

- The stage in the application process at which the data shall be entered in the system is not well described; thus, data on applications and granted licenses are not systematically entered and are not always linked to the appropriate maps
- All data are entered manually to Excel; for checking possible overlaps in the MapInfo system, the same data are re-entered manually on the next PC, thus making the system very vulnerable to data errors
- The processes and procedures for entering data into the programs used are not adequately described in manuals
- Procedures for data verification and validation are not adequately described, and apparently no procedures are defined for correcting identified errors, nor for keeping track of modifications
- Back-up are undertaken randomly and no safe storage is available for the back-up
- The system is developed/modified by the officers in charge according to individual needs and skills, without any written approval in advance of changes, and without any consideration of possible unwanted effects on the system or the contents of the files

The files:

- The 'database' consists of about 160 Excel spreadsheet files.
- Duplicate filenames are observed both in the same or different computers, with no indication of the file version, updated or not
- The data structure varies from file to file, and the files have different fields (columns) for the same category of dataset
- The files do not allow a comprehensive search of specific data.

The data:

- Several licences kept in the database are no longer valid, i.e. they have expired but this fact is not recorded in the database about each of them
- The data are not consistent, e.g. some data which supposedly should be entered both in Excel and MapInfo, are only found in files related to one of the programs
- There are no consistent licenses numbering system. In some cases, numbers used in Excel are not the same as used in MapInfo or on the hard copy, for the same license.
- Some key entries on records are missing
- Geographical data are not handled consistently
- There are ambiguities with respect to numbering, e.g. no unique numbers for registration and license numbers, respectively.
- Data in the MapInfo environment are marred by a series of errors, e.g. (a) the Master sheet file consists of both points, polygons, polylines, lines, text objects and records with no attached objects; (b) widespread overlap of licenses can be observed; (c) there are duplicate objects and records

Missing records and data:

According to the information provided by LU (see Project Seminar Report) the total number of applications and granted licenses (excluding dealers and brokers licenses) covering the period from January 2000 to May 2002 is respectively 8,689 and 6,761.

Due to the lack of consistency and structure of the existing files (more than 160 files), it is not possible to calculate the numbers of records actually present in the current 'database'. However, based on the assessment carried out, the Consultant finds it justified to conclude that the database contains only a minor fraction of all the granted licenses in the above period, and similarly only a minor fractions of mineral rights applications.

In order to verify records and to update the Mineral Rights Inventory, a Verification Plan is given in Chapter 4.

2.2 Conclusions

Based on the assessment it is the view of the Consultant that (a) the current system is inadequate for being the operational system for a Mineral Rights Inventory, (b) the organisation of data, and (c) the applied procedures. The urgent need for the implementation of a new database and Inventory is clearly demonstrated. A summary of just the most important

observations made by the Consultant indicating the weaknesses in the system are listed below,

- The system is not documented
- The current 'database' structure is inadequate, and is not suited for large numbers of records
- The system set-up, based on several PC's is vulnerable to many types of errors
- Information and accurate data for a vast majority of the recorded licenses are incomplete
- Overview of the content of the 'database' – and thus of what is not entered – is not available
- The 'database' contains a small percentage of granted and valid licenses
- The 'database' and set-up cannot guarantee that granted licenses are not overlapping.

The Consultant finds that it is not possible to overhaul the current database, and thus recommends a new database to be developed, to replace the existing system and for use in the immediate future for the verification process. A functional database structure for this purpose is described in Chapter 3. A clean database is the hub of any administration, and is inevitably required; Chapter 4 provides the project for achieving a clean database.

3. Development of a new Mineral Rights Database

When the state of affairs of the existing system was finally confirmed by the joint efforts of all participants in the project, the Consultants suggestion of building a new simple but very functional database was really the only possible way forward. This must be used for the subsequent verification process, and properly applied it will provide the data basis for the next step, construction of a Mining Cadastre Information Management System.

The database constructed for this purpose by the Consultants is described in some detail in this chapter of the report. To ensure the maximum exploitation of pre-existing knowledge of MapInfo in LU and wishing to stick to fairly standard techniques for databasing, it was decided to use Microsoft Access and MapInfo. Access is a robust and simple to use relational database system well suited for single users on fairly simple systems, though it can be extended to a multi-user system if and when net installations become available. Access is part of the MS Office Professional suite of programs and will integrate easily with e.g. Excel, and it will run well on any modern PC.

Most modern databases are relational database systems, having a number of advantages. The data modelling necessary for the building of this database, will be directly applicable in the future MCIMS, and the order brought to the data and information while inputting to the database, is a pre-requisite for a successful implementation of such a much more complex future system.

The Consultants felt that a word of advice is warranted here. The Mineral Rights Database described in the following and being suggested for use in LU, is a necessary component for an improvement of the license situation, but it is not sufficient. The database will only be as good as the data entered, and all involved staff will need to be very careful and conscientious in their work. A perfect agreement between the digital data in the database and the paper trail (i.e. paper copies in archives and files) must exist at all times to ensure that the total system is legally and administratively sound. To assist with this, sections on work procedures etc. have been included in this report.

3.1 The Database – some considerations

It must be emphasised that a Mineral Rights Database, forming the basis of the Mineral Rights Inventory, is one of the corner stones of any mineral rights cadastre system. It is the key tool for any administrative organisation responsible for the granting of mineral rights. However, it is at the same time important to ensure that the database is designed to fit any specific legislation and existing national mining cadastre practise. This has also been the basis for the development of the new mineral right database for Tanzania, which has been developed in close co-operation with the Client.

It will be critical for the successful use of the new Mineral Rights Database that a number of considerations are observed as has been discussed at various times in the project group during the development. This includes but is not limited to

- There must be a defined date for the transfer of control from the existing system to the new Mineral Rights Database; after this agreed date only the new database must be used for the recording of information.
- From this date and onward all security routines must be in place and operational, such as back-up procedures, control of access, separation of digital and analogue records etc.
- Before this date the personnel must be adequately educated and trained in daily use of Access and MapInfo, and specifically in the facilities for entering of new data
- Before this date, the work routines related to various work situations must be familiar to all involved and from that date and onwards they must be followed explicitly and without exceptions or errors.
- The full paper trail of all operations, such as application for a license, reduction of area, etc, must be kept in safe archives; there must be perfect agreement between the information, data and dates given in the papers and the similar digital information in the database.
- All printed output produced from the database must be clearly marked with date, time, license numbers and anything else needed to ensure the unique definition of the printed output and its relation to the information in the system.

If these guidelines are not followed to the letter, the most likely outcome will be a new database suffering from similar catastrophic deficiencies.

3.2 Design of the Database

The general aim of the new Mineral Rights Inventory is to be the vessel that will hold all the verified data and information about licenses in Tanzania until the future MCIMS can be implemented and the information can be transferred to this. The new Mineral Rights Inventory should also be the tool to use to carry out the verification of existing licenses. This has been a determining factor for the design of the database.

Thus, the focus is on licenses, from application to cancellation and the routines and operations related to the monitoring of licenses in their different variations. The database is fitted to the presently valid laws and regulations, not to a possible future law. The database alone is not sufficient to guarantee a successful updating of the information related to licenses. The proper and skilled use of the database and associated facilities must be supplemented with the proper administrative procedures. The database does not replace the papers (applications, documents, and letters) in the physical files in the archives, but it provides a digital image of the information that is suited to digital handling of a number of operations.

The fact that a relational database system is used for the construction of the new Mineral Rights Database ensures that modification of and additions to the database structure are not an insurmountable problem. Any reasonably skilled person will be able to add new fields, new reports and new forms to the system, though care must be taken to also handle the consequences for the data already in the database, i.e. it should only be done by someone with an intimate knowledge of the database. As a matter of fact the Consultants

must strongly advise the future users of the system to refrain from making changes in the structure of the database; it will be far better to spend the resources working on the content of the database and make sure that is as perfect as possible.

The new Mineral Rights Database (MRD) and - Inventory is not a MCIMS, but a more limited tool to be used in the interim period between now and when the final MCIMS is implemented. It is a database with helpful administrative tools attached not an administrative master system. The users must fully understand this and know with certainty what is expected from them in terms of accuracy, care and good governance.

In the following sections of this report, a brief description of the new Mineral Rights Database is provided for a good understanding of its use. Some of the terms are technical and sometimes a few words of explanations are included, but a general explanation of their meaning is beyond the scope of this report. Readers are referred to most textbooks on Object Oriented Relational Databases and Data Modelling Theory.

3.2.1 Entity Relationships

Figure 1 shows the major entities and relationships in the database and shows the general data entities provided for in the Mineral Rights Database.

An entity can be defined as a name, place, thing, event, or concept about which information is kept. An instance is a single occurrence of a given entity. Each instance must have an identity distinct from all other instances. In an entity relationship diagram, a box or rectangle represents an entity.

Relationships between entities are a vital component of a relational database. The use of shared keys will capture these relationships: facts in one entity refer to, or are associated with, facts in another entity. The line drawn between the entities in the model represents a relationship. A relationship between two entities also implies that facts in one entity refer to, or are associated with, facts in another entity.

The basis for the structure is the existence of a one to one relationship between most parts of a license/Application for licenses; the large "Application" – table that stores all these elements.

In order to understand the reasoning behind the structure, please observe the following examples of relations between entities.

- Between licensee and license it is quite likely that there will be a one to many relations i.e. a licensee may hold several licenses.
- The relation between license and fee is a one to many relations, because a license can have several attached fees during its lifespan.
- Between licenses and basic geography (Zone, District, Topo sheet number) there should be a one to one relation (in the event of a license area overlapping zone or district borders, a simple rule of major coverage can be applied).

- Between license and beacon co-ordinates a one to many relations should exist.
- Between the licensee and LU-officers and their function in relation to the licence there exist a one to many relation, i.e. many staff members can have several roles in connection with one license. In order to handle this, a transition table with a many to many relationship with license, roles and LU officers involved has been established.

For any database it is very important to maintain the integrity and consistency of the content of the database. To ensure the integrity between related data in separate tables the relations between "Application", "Co-ordinates"; "Fee" and "Staff_Control" is set to *cascade update* and *cascade deletion* of related records. In practical terms this means that whenever a new record is entered in "Application" its ID (Application ID) is automatically added to these tables. In the same way once a record is deleted from table "Application" this deletion will cascade through the other tables ensuring that there is no stranded (superfluous) records in the tables. Between "Company" and "Application" a cascade update of "Application.Company" takes place. However, no rule of *cascade deletion* is applied here, as it is quite likely that a company should continue to exist in the database for further use.

The actual name of a table or a data field is of no consequence to the data stored in the table or field. The tables could be named any other way, if so desired. What is of importance is the naming on the screen-forms, see the chapter on "User Interface", which guide the user in registration. All Entries marked in bold on the Data Entry Forms are compulsory data fields (Table 1). That is data absolutely needed for registration of Licenses. The MRD allows the user to partly enter information on a license. This is not recommended but implemented so as to allow the users to return to the registration when data becomes accessible. The situation with partly accessible data is expected to exist for a period. When MRD needs data entered in order to correctly link data together actions, is not possible until the data is applied or corrected. That way the integrity of the MRD is assured.

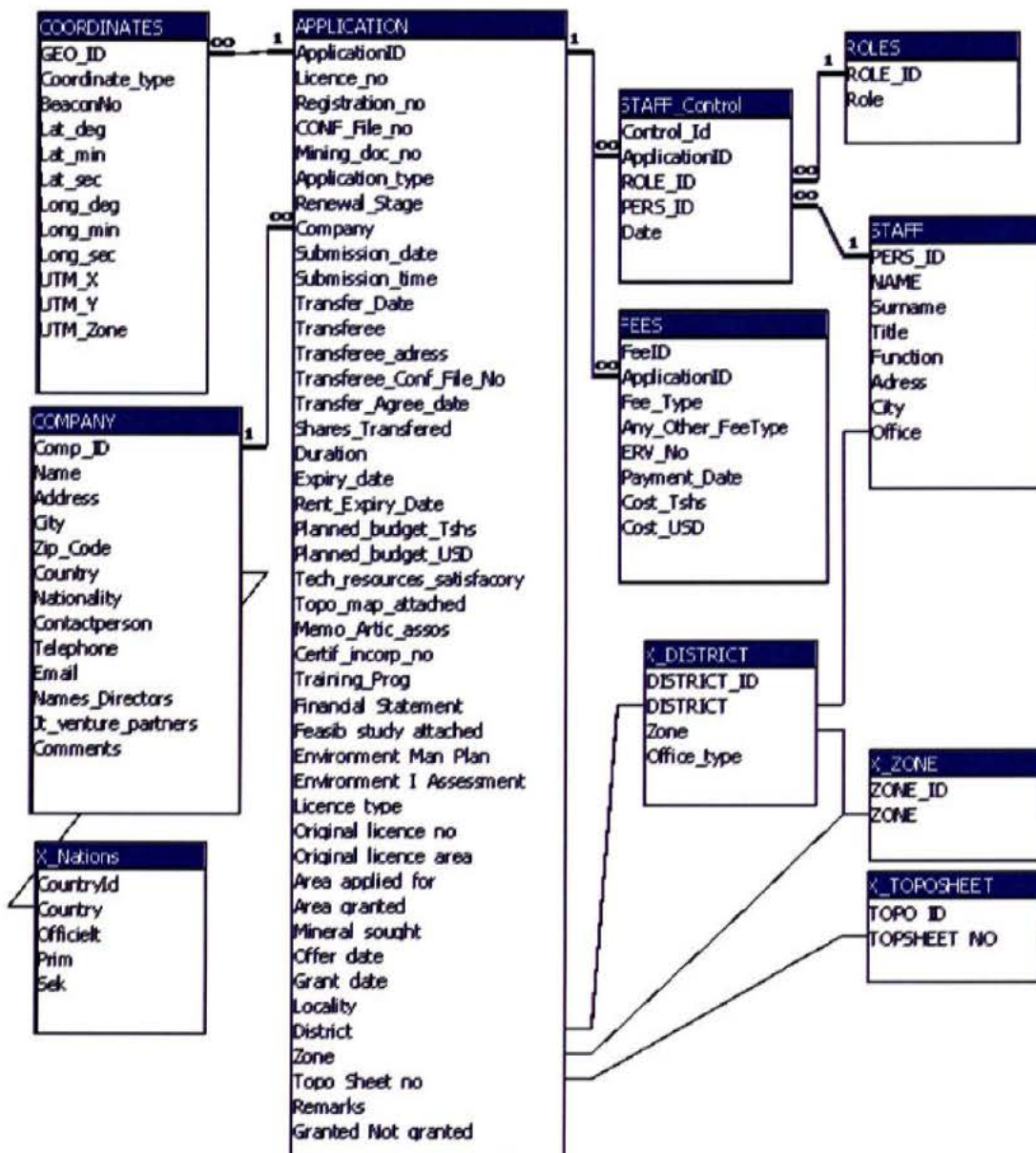


Figure 1: The Schematic representation of data relationships – the data model. Each of the rectangles is an entity or table. Each of the names in the list is the name of a field or attribute used to hold the information.

3.2.2 List of Database Tables

Table Fejll Ukendt argument for parameter.. Database Table Application. Entity for storing general information about new applications and already existing licenses.

Field	Data type	Description
ApplicationID	Auto numbering	Auto generated id number.

Licence_no	Character	Licence number issued by Mineral Rights Registry
Registration_no	Number	Registration number issued by Mineral rights Registry
Conf_File_no	Number	Confidential file number for the applicant, opened by Ministry of Energy and Minerals
Mining_doc_no	Character	Mining Document number.
Application_type	Character	Whether it is for a new application, for renewal, for licence transfer, for demarcation, for amalgamation or for surrender
Renewal_Stage	Character	Whether it's the 1st, 2nd, 3rd or retention
Company	Number	Number identifying the licensee registered in another table. Rule: <i>Lookup to Table Company</i>
Submission_date	Date	Date when the license application was submitted to Ministry of Energy and Minerals
Submission_time	Date	Time when the license application was submitted to Ministry of Energy and Minerals
Transfer_Date	Date	Date the transfer has been made. Rule: Only accessible when Application type = Transfer.
Transferee	Number	ID of company. This field is a lookup to the Company table. Rule: Only accessible when Application type = Transfer. Lookup to table Company
Transferee_Conf_File_No	Character	File Number of Transferee. Rule: Only accessible when Application type = Transfer.
Transfer_Agree_date	Character	Date of agreement. Rule: Only accessible when Application type = Transfer.
Shares_Transferred	Character	Shares Transferred. Rule: Only accessible when Application type = Transfer.
Duration	Number	Duration of validity of licence
Expiry_date	Date	Date when Licence expires. Rule: Data automatically entered as a function of updating either Grant date or duration (Expiry defined as Grant Date + Duration).
Rent_Expiry_Date	Date	Date up to when the rent will expire
Planned_budget_Tshs	Number	Budgeted expenditures (in Tanzania Shillings) to be spent on the licence.
Planned_budget_USD	Number	Budgeted expenditures (in US Dollars) to be spent on the licence.
Tech_resources_satisfactory	Character	(Yes/No) whether technical resources are satisfactory or not. Rule: <i>Controlled List</i> .
Topo_map_attached	Character	(Yes/No) whether a 1:50,000 scale Topo map is attached to the application or not.

		Rule: <i>Controlled List</i> .
Memo_Artic_assos	Character	(Yes/No) whether Memorandum and Articles of Assist. Attached or not. Rule: <i>Controlled List</i>
Certif_incorp_no	Character	Certificate Number
Training_prog	Character	(Yes/No) whether Training program is attached or not. Rule: <i>Controlled List</i>
Finacial_Statement	Character	(Yes/No) whether a financial statement is attached or not. Rule: <i>Controlled List</i>
Feasib_study_attached	Character	(Yes/No) whether feasibility study attached or nor not. Rule: <i>Controlled List</i>
Environment_Man_Plan	Character	(Yes/No) whether Environmental Management Plan (EMP) is attached or not. Rule: <i>Controlled List</i>
Environment_I_Assessment	Character	(Yes/Not) whether Environmental Impact Assessment (EIA) Report is attached or not. Rule: <i>Controlled List</i> .
Licence_type	Character	Whether licence is PPL (primary prospecting licence), PLR (Reconnaissance licence), PL (Prospecting licence), PML (Primary mining licence), ML (Mining licence), SML (Special mining licence), GML (Gemstone mining licence), RL (Retention licence). Rule: <i>Controlled List</i>
Original_licence_no	Character	Type of licence previously held in case of transformation from one licence type to another e.g from PL to ML.
Original_licence_area	Character	Original licence area held in case of renewal or transformation from one licence type to another. <i>Application</i> ".
Area_applied_for	Number	Size of licence area requested (Sq Km)
Area_granted	Number	Size of licence area granted (Sq Km)
Mineral_sought	Character	Mineral being sought under the licence
Offer_date	Date	Date when offer for the licence is given
Grant_date	Date	Date when licence is granted
Agents	Note	Names and addresses of the agents who manage the licence on behalf of the holder
Locality	Character	Local name of the area in which licence is located
District_ID	Number	Name of the administrative district accommodating the biggest part of the licence area Name of the administrative district accommodating the biggest part of the licence area. Rule: <i>Lookup to table X_District</i>
Zone	Character	Mineral administrative zonal office. Rule: <i>Lookup to table X_District</i> . Automatically updated when choosing District.

Topo_Sheet_no	Character	Topographic Sheet number of the map on which the licence falls. Rule: <i>Lookup to table X_Toposheet</i>
Remarks	Note	Any comment made by issuing authority. For instance comments on refusal or granting.
Granted_Not_Granted	Number	Values set as either 1 for application approved or 0 for application rejected.

Table Fejll Ukendt argument for parameter.. *Fees. Entity for storing of all types of fees related to a license.*

Field	Data type	Description
Fee_ID	Autonumber	Identity of Fee
ApplicationID	Number	Automatically entered ID linking a Fee with an Application/license.
Fee_Type	Character	Whether it is Application, Preparation, Transfer, Rent, Royalties, Demarcation, Amalgamation, Surrender fees or Other Fees
Any_Other_FeeType	Character	Any other fee not covered in Fee_Type. Rule: Only accessible for data entry when fee type is set to "Other"
ERV_No	Character	Receipt Number
Rent_expiry_date	Date	Date rent expires.
Payment_Date	Date	Date the fee was paid
Cost_Tshs	Number	Payment made in Tanzanian Shillings
Cost_USD	Number	Payment made in US Dollars

Table Fejll Ukendt argument for parameter.. *Company. Entity for storing of information's about License Holder, individual or companies and owners related to a license.*

Field	Data type	Description
Comp_ID	Auto numbering	Company identification number – automatically generated.
Name	Character	Full Names of license applicant/holder
Address	Character	Street and House Number of licence applicant/holder
City	Character	City
Zip_Code	Character	Postal code. Character since foreign License Holders addresses could have text within the Zip Code.

Country	Character	The Country of licence applicant/holder. Rule: Lookup to table X_Nation. Only activated if "Nationality" is set to Foreign. Otherwise the Value is set to Tanzania.
Nationality	Character	Whether Licence applicant/holder is Local or Foreign - Is a controlled List.
Contactperson	Character	(Optional) Person not identical with License applicant/holder
Telephone	Character	(Optional) Telephone number
Email	Character	(Optional) Email address
Names_Directors	Note	Names and addresses of Directors of licence applicant/holder in case its a company
Jt_venture_partners	Note	Names and addresses of Joint Venture Partners. In principle the JV Partners could be Companies already in the same table.
Comments	Note	(Optional) Any comment of interest about the company/person in question. Are they reliable or not. Previous problems, reason for rejecting the application, etc.

Table Fejl! Ukendt argument for parameter.. *Co-ordinates. Entity for co-ordinates related to a license.*

Field	Data type	Description
GEO_ID	Number	Same as applicationID, but different naming useful for coding. Cascade updated when new coordinate is added.
Coordinate_type	Character	Coordinates applied, Granted or Granted and verified. Rule: <i>Controlled List</i>
BeaconNo	Auto numbering	Beacon number. Automatically added. Used by the system, MapInfo.

Beacon		Beacon number. Information added by user, beacon 1, 2, 3 and 4, ect.
Lat_deg	Number	Latitude degrees coordinate for licence corner beacon. Rule: Not accessible if Coordinate_type is set to "granted and Verified"
Lat_min	Number	Latitude minute coordinate for licence corner beacon. Rule: Not accessible if Coordinate_type is set to "granted and Verified"
Lat_sec	Number	Latitude second coordinate for licence corner beacon. Rule: Not accessible if Coordinate_type is set to "granted and Verified"
Long_deg	Number	Longitude degrees coordinate for licence corner beacon
Long_min	Number	Longitude minute coordinate for licence corner beacon. Rule: Not accessible if Coordinate_type is set to "granted and Verified"
Long_sec	Number	Longitude second coordinate for licence corner beacon. Rule: Not accessible if Coordinate_type is set to "granted and Verified"
UTM_X	Number	UTM_EASTING coordinate for licence corner beacon. Rule: Not accessible if Coordinate_type is set to "granted and Verified"
UTM_Y	Number	UTM_NORTHING coordinate for licence corner beacon. Rule: Not accessible if Coordinate_type is set to "granted and Verified"
UTM_Zone	Character	UTM ZONE in which the licence falls. Rule: Controlled List. Not accessible if Coordinate_type is set to "granted and Verified".

Table Fejl! Ukendt argument for parameter.. *Roles. Entity for defining activities occurring in connection with licenses. The table is the basis for managing access to the database and tracking changes to the database by users. Functions as lookup to table Staff_control.*

Field	Data type	Description
ROLE_ID	Auto numbering	Role identification number - automatically generated.
Role	Character	Any role that staff might have in a connection with a license.

Table Fejll Ukendt argument for parameter.. *Officer. Entity for storing information's about the staff at LU; this is required in order to record the audit trail of who has done what in the database. The information's about address and city is not of great importance at present but in the instants that other officers from ZMO or RMO are granted access or are given a copy of the database it becomes relevant in order to track responsibilities and changes.*

Field	Data type	Description
PERS_ID	Auto numbering	Unique identifier
NAME	Character	First Name
Surname	Character	Surname
Title	Character	Title to put in letters etc. - Dr -Mr - Mrs. -Ms. Rule: <i>Controlled List</i>
Function	Character	Employee Title or function - Head of LU, Technicians, secretary, etc.
Address	Character	Address of Employee
City	Character	Place of living
Office	Character	Office. Rule: Look up to Table District

Table Fejll Ukendt argument for parameter.. *Staff_Control. Entity for storing information's about the actions of individual staff members in relation to each license. If used together with access control from a network, the system becomes very powerful in controlling who does what and why to the database.*

Field	Data type	Description
Control_Id	Auto numbering	Unique identifier
ApplicationID	Number	Record identifying Application/License. Rule: <i>All data is entered automatically.</i>
ROLE_ID	Number	Record identifying the employee role. Rule: <i>All data is entered automatically.</i>
PERS_ID	Number	Record identifying Employee. Rule: <i>All data is entered automatically.</i>
Date	Date	Automatically timestamp. Rule: All data is entered automatically.

Table Fejll Ukendt argument for parameter.. *District .The various Districts and Zonal Offices in Tanzania.*

Field	Data type	Description
DISTRICT_ID	Auto numbering	Unique identifier
DISTRICT	Character	Name of district
Zone	Character	Name of Zone
Office_type	Character	Type of Office - District or Zone

Table Fejl! Ukendt argument for parameter.. *Topo-Sheet. Entity for information about the topographical sheets covering Tanzania. The information about toposheet needs verification and this should be done as soon as possible.*

Field	Data type	Description
TOPO_ID	Auto numbering	Unique identifier
TOPSHEET_NO	Character	Toposheet number

Table Fejl! Ukendt argument for parameter.. *_ZONE. Entity for Zones.*

Field	Data type	Description
ZONE_ID	Auto numbering	Unique identifier
ZONE	Character	Name of Zone

Table Fejl! Ukendt argument for parameter.. *Nations. Entity for nations.*

Field	Data type	Description
Country_ID	Auto numbering	Unique identifier
Country	Character	Name of Country
Officiel	Character	Official Name if different from name
Prim	Character	Primary abbreviation
Sec	Character	Secondary abbreviation

3.2.3 User Interface

To facilitate easy navigation through the different parts of the database a form automatically appears on database opening. This form gives access to data entry forms for license data, license holder data, administrative data and Geography. Further the same form can later be adopted to include access to a number of aggregation queries and reports, yet to be implemented.

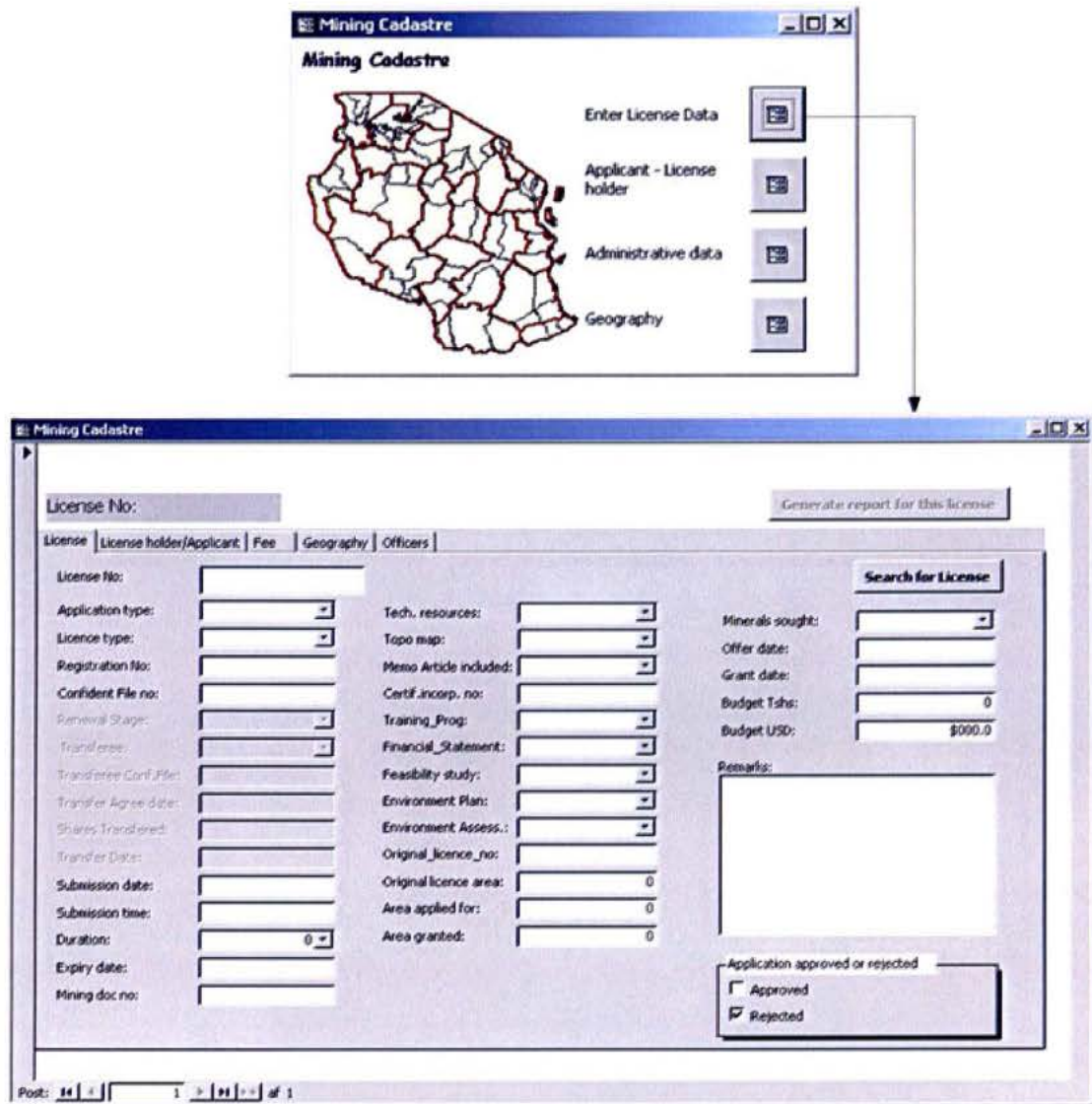


Figure Fejll Ukendt argument for parameter.. *Main data entry form*

Pressing the button "Enter License Data" opens the main data entry form. This form is constructed as a series of overlapping pages, each representing a main entity: License (or Application); License holder (Company); Fee; Geography and LU-Officers involved. The Data source for the main form is the table Application. This means that adding a new record creates a new instance of application ID, ready for use when the user wants to add information on Fee, Geography and officer Activity. Access to these parts of the database is presented as *sub forms* inserted in the main form.

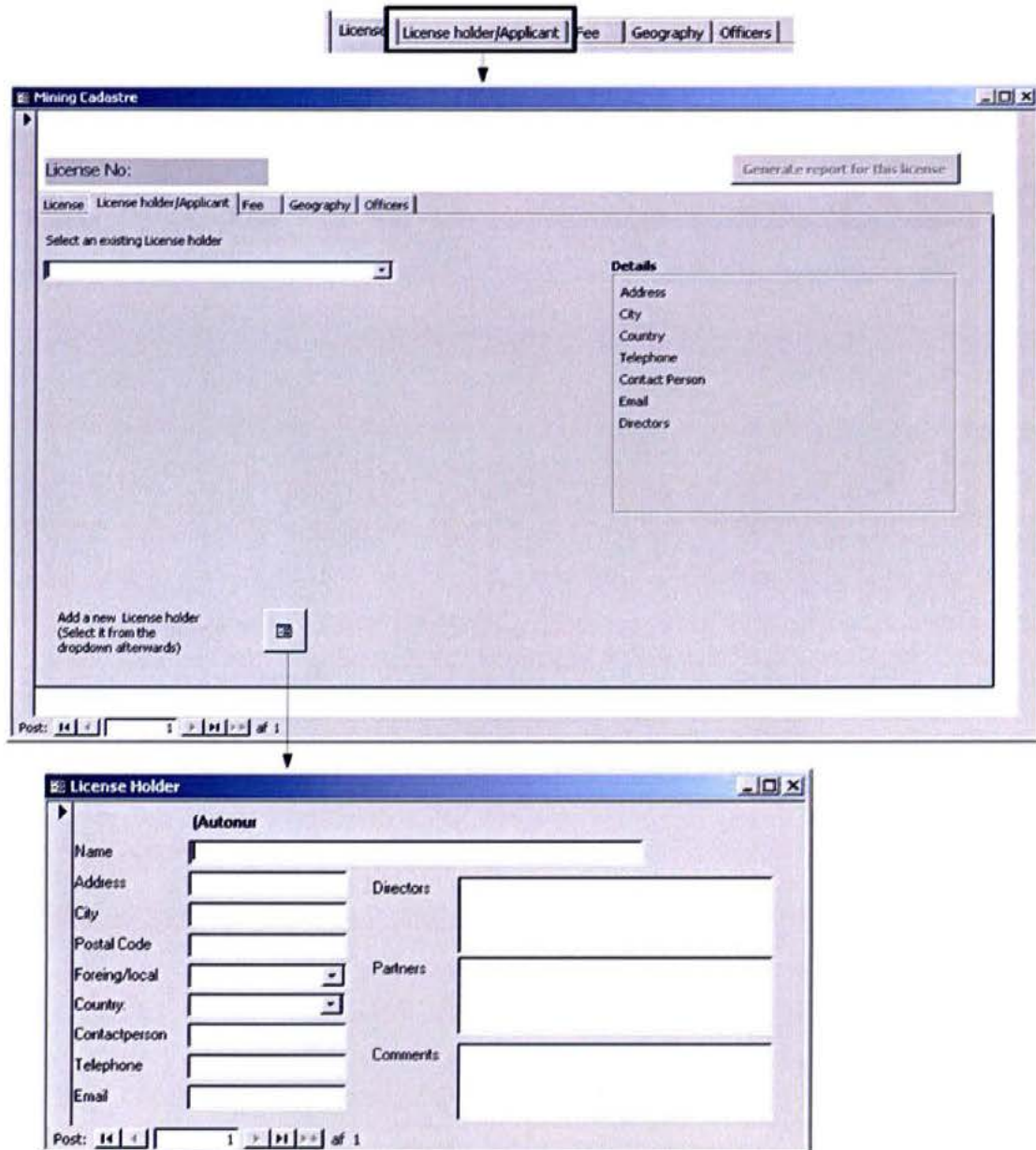


Figure Fejl! Ukendt argument for parameter.. *Forms for entering data on license holder/applicant*

When entering information on license holder or applicant the user is presented with two options. If the license holder is already registered in connection with previous licenses then the name of the company or individual in question can be found in the dropdown box. If the applicant/license holder is new, pressing the button “Add new license holder” will display a new form for entering all relevant data on the applicant. As all information on license holders is to be entered through this form, it also applies in the case of a Transfer of License. The license holder that transfers the license will already exist in the database. If license type is set to Transferee, one is given the opportunity to select an existing license holder from a similar dropdown box. If the transferee does not exist in the database – the name and all other relevant data on the transferee should be entered through the “license holder” form. It is only needed to enter a given licensee/applicant once even though the same li-

license holder can hold several licenses and occur as transferee in several cases. Please note that a license holder can be both a company and an individual.

It should be noted that all data must be entered via the forms only. Any other way will omit the necessary connection between license holder and license. Password protection of the database will reduce the risk of unintended changes or wrongly entered data.

The screenshot shows a web application window titled "Mining Cadastre". At the top, there is a navigation menu with tabs: "License", "License holder/Applicant", "Fee", "Geography", and "Officers". The "Fee" tab is selected. Below the menu, there is a "License No:" input field and a "Generate report for this license" button. The main content area is titled "Enter Fee information" and contains a sub-form labeled "FEES". The "FEES" sub-form has the following fields: "ApplicationID" (a dropdown menu), "Fee Type" (a dropdown menu), "Any Other Fee Type" (a text input field), "ERV No" (a text input field), "Payment Date" (a date input field), "Rent Expiry Date" (a date input field), "Cost T shs" (a text input field with a value of "0"), and "Cost USD" (a text input field with a value of "\$000.0"). To the right of the "FEES" sub-form, there is a section titled "Total amounts paid for this License" with two input fields: "USD:" and "TSHS:". At the bottom of the window, there is a pagination control showing "Post: 14 of 1".

Figure Fejl! Ukendt argument for parameter.. *Form for entering Fee - information*

The Sub-form "FEES" allows for the entry of many different fees connected to one license. The entry field "Any other Fee type" is only accessible if Fee type is set to "Other". It should be stressed that the different types of fees imaginable in connection with a license can be quantified by looking at this particular entry at some later stage thereby allowing for a more precise registration and ease of reporting/aggregating fees paid.

When updating the form a total amount paid for a license is calculated (Tanzania Shilling and US Dollar) and displayed in the controls to the right.

License | License holder/Applicant | Fee | **Geography** | Officers

Generate report for this license

License No:

License | License holder/Applicant | Fee | **Geography** | Officers

Locality: District: Zone: Topo Sheet no:

COORDINATES

ID	Beacon	Coordinate type	Latitude			Longitude			Utm X	Utm Y	Utm Zone
			Deg	Min	Sec	Deg	Min	Sec			
▶	-	-	0	0	0	0	0	0	0	-	

Post: 1 of 1

Verify Coordinates in MapInfo | Enter new topo sheet

Post: 1 of 1

By Clicking this Button all coordinates with the status "Granted" for this license is send to MapInfo and verified against all license areas with the status "Granted and Verified". If the area in question does not compromise the integrity of other licenses, the Status of "Granted" Coordinates should be changed to "Granted and Verified".

TOPOSHEET Entry form

(Autonumerering)

Topo Sheet No:

Post: 1 of 1

Figure Fejll Ukendt argument for parameter.. Forms for entering data on general and specific geography

Information on geography is entered in two separate forms. General geography like Locality, District, Zone and Topographical map sheet number is entered in the main form while specific geography in the form of Beacon co-ordinates is entered in the sub form "Coordinates". A small piece of code sees to it that it is not necessary to enter information on "zone" as this information is already given by choosing "District".

As it is to be assumed that many licenses will occur on one topographical map sheet a dropdown box for selecting already entered topographical map sheet numbers is provided. In the event that a topographical map sheet is missing from the dropdown list it can be entered via a small secondary form and subsequently selected by the dropdown box.

The sub-form "Co-ordinates" allows for the entry of many co-ordinates of different co-ordinate type per license. When an application is new the co-ordinate type is set to "Applied for". Later the status can change to "Granted" if the license is granted. "The status "Granted and Verified" is applied when a MapInfo extension (VerifyCadastre.mbx) have checked that

the area delimited by the co-ordinates does not violate any existing license area. When setting the Co-ordinate type to “Granted and Verified” the possibility for changing co-ordinates is disabled. In order to change the co-ordinates the status of the co-ordinate type should be changed back to “Granted”.

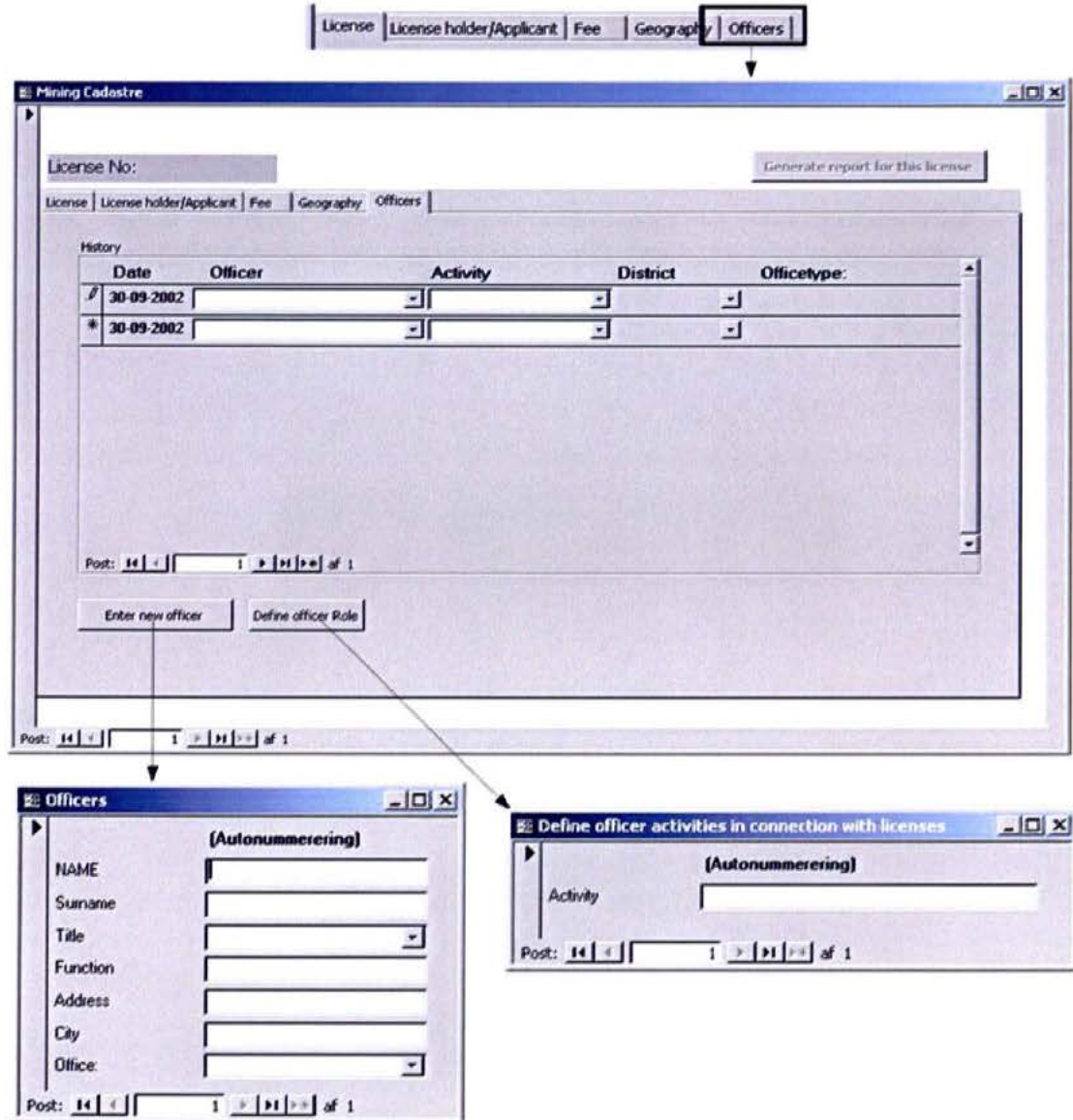


Figure 5. Form for entering data on the history of current license

A large number of events can take place in the lifespan of a license. A tool for registering events is provided through the sub-form “History”. Chose the name of the employee and the role of the employee. If the role or the employee is not present in the database at the time of entry, forms are provided for entering that information. When creating a new entry the time of entry is automatically registered (Time stamping).

At the top of the main form two action buttons are available, ‘Generate report for this license’ and ‘Search for specific License number’.

Generate report for this license

Search for specific License number

Figure Fejl! Ukendt argument for parameter.. *Main form action Buttons and their function*



Type	Region	License	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
Classed	7.2	0	0	31	01	01	00	0	0					
Classed	7.24	0	0	14	01	01	00	0	0					
Classed	7.24	0	10	15	01	01	00	0	0					
Classed	7.24	0	11	24	01	01	00	0	0					

The 'Generate report for this license' button provides the easy generation of a report for the current License. By coding, this button is disabled if the field "License No" is empty i.e. a license should have a license number to be considered a license.

The button 'Search for specific license number' provides access to the "Search for record" dialog. Placing the cursor in the appropriate field in the main form allows for browsing to the first record that matches whatever is entered in the search dialog "Search for" field.

Figure Fejl! Ukendt argument for parameter.. *Form for managing geography.*

Via the form "Manage Geography" the user is given access to a number of functions implemented in the VerifyCadastre extension to MapInfo.

- Button: *Regenerate all regions*
Generates all regions regardless of region type (Region type = co-ordinate type).
- Button: *Regenerate all Granted regions.*
Generates all regions classified as "Granted".
- Button: *Regenerate all applied for regions.*
Generates all regions classified as "Applied for"
- Button: *Regenerate all verified and granted regions*
Generates all regions classified as "verified and granted".

3.2.4 Output

A critical part of any database is the ability to query information from the database. Standard Access querying through the use of SQL is possible. The queried information can be printed through standard Access Report Generating. Additional pre-created search and reports menus have been developed focusing on the most used search and report criteria's when working with the Mining Cadastre.

The implemented Reports are:

- Report of specific License
- Report of all licenses held by specific License holder

MapInfo generates a message in a Message Box identifying overlapping License areas, as well as highlighting the areas in question.

3.3 Data Entry Forms

Three different types of Data Entry Forms have been developed in close dialogue with the Client. The aim of the Data Entry Forms is, (a) to ensure that all relevant information for each license is recorded; (b) to ensure that all data are systematically validated before being entered to the Mineral Rights Inventory, and (c) to keep track of any amendments made on each license.

The Data Entry Forms are designed to support the following three situations:

Form I: Mineral Right Application/ License Granted

Form II: Renewal of a Mineral Right

Form III: Transfer of a Mineral Right

After a LU officer has completed a Data Entry Form, an authorised person validates the data and approves the form by signing it. At this stage the data is ready for being entered to the Mineral Rights Inventory, and the Data Entry Form is subsequently filed with the respective confidential file, and the record no. is attached the Data Entry Form. In the event a licensee at a later stage submits an application for renewal of the license a new Data Entry Form is filled in, and the same procedure is applied again. This ensures that each record in

the Mineral Rights Inventory has a hard copy twin in the Confidential Files, and hence no amendments can be undertaken in the one part without being amended according in the other.

Samples of the three Data Entry Forms are given in Report 3 Appendix A

4. Plan of Verification

The urgent need for establishing a new Mineral Rights Inventory due to the inadequate and unreliable data and the inappropriate data structure based on Excel has been explained in Chapter 2. The new inventory shall be based on clean and ordered data records.

4.1 Introduction

With the objective to establish a “clean” Mineral Rights Inventory, a Plan of Verification has to be developed – to be implemented as soon as possible. The Plan of Verification has been designed to disclose any possible discrepancies occurring between data kept in the confidential files and the data/information issued on the Licenses.

A clean Mineral Rights Inventory is here understood as an Inventory in which all data have been verified and all data are relevant, from which it follows that the data are reliable; also, all possible measures have been taken to ensure that the database does not contain any errors.

In the event that the survey discloses any discrepancy, the License Certificate issued by the Licensing Unit and given to the Licensee should be regarded as the correct basis for any correction. Such verified and corrected data shall form the basis data for both the Mineral Rights Inventory and for the development of updated confidential (paper) files. The data in the Mineral Rights Inventory represents only *some* of the data kept in the confidential files; but the data represented in both systems must be identical.

Moreover the Verification Plan shall provide a routine for checking that field data (coordinates) are in accordance with the data in the clean Mineral Rights Inventory.

4.2 The State of the Confidential Files concerning Mineral Rights

It is the view of the Consultant that the state of the confidential files is not up to the standard of international best practise, which the mining industry has a right to expect. The files contain far too many errors and substantial parts of key data are not available.

Consequently, the establishment of a clean Mineral Rights Inventory unfortunately cannot be based on the confidential files and an alternative procedure has to be developed. This alternative is outlined below.

4.3 Verification of all Mineral Rights Inventory Data

A thorough verification of all issued license data is inevitable, and specifically the possible co-ordinate errors must be addressed. The errors that will be revealed during the verification process must be corrected and the consequences of corrections have to be handled in order to achieve a clean and up-to-date Mineral Rights Inventory. The accuracy of co-ordinate data for each license is of crucial importance if overlap issues are to be avoided, and must therefore be given special attention in the verification process. If carried out carefully, the verification plan outlined below, will not only provide the correct co-ordinates, it will also allow an update of any other information required for the Mineral Rights Inventory.

Correct/incorrect Co-ordinates – Definitions

The correct set of co-ordinates is defined as the co-ordinates issued on the License Certificate submitted to the Licensee. Consequently, co-ordinates are considered incorrect where a discrepancy occurs between what is recorded in the Mineral Right Inventory/confidential file and what is issued on the License Certificate.

From this it follows that if incorrect co-ordinates define a license then the license area is also located incorrectly in the GIS system. *All* licenses having incorrect co-ordinates have to be identified and corrected to establish a clean Mineral Rights Inventory.

Correcting the co-ordinates will however lead to one of the following situations:

- The land defined by the corrected co-ordinates is vacant and thus a correction of the Inventory record does not cause any conflict with a third party's mining right – *the misplaced area issue*.
- The land defined by the corrected co-ordinates is in whole or part granted to a third party, and hence correction of co-ordinates will create a conflict with a third party's mining right – *the overlapping area issue*.

As explained below, the overlapping area issue has to be dealt with according to which types of mineral rights are mutually overlapping – *and* further obeying the 'first come, first served' principle.

4.3.1 Responsibilities for Incorrect Co-ordinates – a discussion

The objective of this paragraph is to show how the responsibility for incorrect co-ordinates can be considered to fall upon the LU, based on a theoretical run-down of the application process.

The co-ordinate data issued on a License Certificate may have originated via either Case I or Case II:

- Case I:** The applicant (now licensee) achieved the co-ordinates used for his application based on a search for vacant areas undertaken by the Licensing Unit /Zonal Mines Office, on the request of the applicant. *In this case the co-ordinates may be considered as being 'provided' by LU.*
- Case II:** The applicant (now licensee) achieved the co-ordinates used for his application by staking an area and taking readings of the beacons in the field. *In this case the co-ordinates may be considered as being 'provided' by the licensee.*

Irrespective of whether Case I or Case II describes the initiation of an application, the outcome of the processing of the application may have been either (a) or (b) below:

- a. The license was granted strictly according to the co-ordinates submitted by the applicant without any amendments made by LU, or
- b. The license was granted according to amended co-ordinates provided by LU.

However, in both cases - by granting a Mineral Rights License - the Licensing Unit guarantees that no overlap exists, and thus the Licensing Unit becomes the responsible legal body for all co-ordinates issued, and can be held responsible for any discrepancies occurring between the co-ordinates issued on the License Certificate and the hard copy files. This emphasises how important it is to get the verification process started and successfully concluded as soon as possible.

4.4 Procedures to Establish a Clean Mineral Rights Inventory

Based on the information, impressions and points of view now known to the Consultants a possible procedure for how to achieve a clean Mineral Rights Inventory can be outlined for the consideration of the Ministry. The procedure basically involves two main phases, (a) the removal of all irrelevant licenses; and (b) the identification and correction of the valid license records.

In order to organise and maintain control of this 'cleaning-up' process, it is strongly recommended to undertake the process on a zone-by-zone basis. Also, though it may be undesirable from some points of views, the Consultant strongly recommends that for a pre-defined period during the establishment of a clean inventory by the implementation of the Verification Plan, no new applications should be accepted and no applications should be granted *-in reality a suspension of all processing of license applications*. The appropriate legal measures for such a period of grace, should be ensured in advance by MEM through announcements, maybe zone-by-zone, and careful orchestration of the events.

4.4.1 Identification and removal of all irrelevant licenses – and general data verification

Based on the information made available to the Consultant it appears that a large – but unknown - percentage of the mineral rights recorded in the current Mineral Rights Inventory are expired or in default (i.e. dormant, due for payments, due for reporting etc.). In order to ensure that the efforts used for the correction of co-ordinates are spent on relevant licenses only, it is recommended first to remove all licenses expired and in default from the Inventory. However, because the hard copy files are not complete and not up-to date the identification of such licenses cannot be undertaken on the basis of the archived hard copy files. A supplementary process involving notifications of the licensees via the press and the Gazette unfortunately seems inevitably.

It may be considered to exclude PPL holders from this process, since this type of licenses have no impact on the result, and thus PPL could be included in the new Mineral Rights Inventory, based on new applications only.

The Procedure

Putting all of these considerations together, procedures for identification of all valid licenses could be recommended as follows:

Step One – Notification of all Licensees

Public Notification of all license holders via the Gazette and the press should inform the holders that all mineral licenses must be re-issued (with a new numbering system). The notification shall provide comprehensive information with regard to

- (a) Suspension period for applications and granting of mineral rights,
- (b) Instructions to the licensees regarding all actions he shall take and directions he must obey,
- (c) Provide information about the consequences of not complying with the notification,
- (d) Time schedules.

In the event a Licensee fails to comply with the notified requirements he should be considered in default, and his license should automatically be cancelled without further notice (or using the Act, with a 30-day notice).

Step Two – Gathering the License Data

All license holders shall submit (personal appearance) to the LU in Dar es Salaam (only one single office should be in charge of the operation), the following documents,

- i) The original License Certificate,
- ii) The original receipts of fees paid over a defined period years, e.g. the past year

In co-operation with the Licensee, the LU-officers should then undertake to,

- iii) Fill in hard copy Data Entry Forms.

In return the Licensee will the same day receive a receipt (numbered) and a photocopy of both i) ii) and iii). Similar copies should be kept in the LU in accordance with the Verification Plan.

Step three – follow-up procedures

The above procedure will make it possible for LU to check the validity of all licenses submitted. Any license holder in default shall - at the meeting - receive a written note specifying the type of default observed and giving the instructions to be followed to avoid cancellation of his license. This assessment of course requires clear definitions of rules for the assessment of the licenses, including how to deal with possible exceptions.

Simple default cases would be such as 'licenses expired' and 'fees overdue'. More complicated types of defaults would be such as license holders not complying with the Mining Act and Regulation i.e. dormant, no reporting, environmental reports. It is recommended to disregard all the latter types during the implementation of the Plan of Verification, and then return to them after they have been accepted in the new Mineral Rights Inventory, as needed in the normal course of events related to the monitoring of licenses.

Step Four - Corrections of Co-ordinates in the Inventory

The records that pass through this first filter, then require a systematic check of the co-ordinates, and must subsequently be checked for overlaps. In the event overlaps are found to occur, the co-ordinates must be corrected. However, correcting is not a straightforward process, because a number of combinations of circumstances are possible. The following procedure is recommended,

- 1) Identifications of all overlapping license occurring in the new inventory, not containing any licenses in default according to the above procedure.
- 2) Each overlap between two licenses must to be described and corrected with respect to (based on the present Mining Law and Regulations),
 - a) The types of licenses involved in the overlap must be identified (i.e. type of mineral right and type of mineral), revealing which license should be given priority over the other (e.g. any Prospecting License overrules a PML-building-material-license),
 - b) If the priority cannot be decided from the type of licenses involved, then the date and time of application can be applied.

For any overlapping licenses, which still cannot be evaluated in terms of the above, one of the following principles may be applied,

- a) give priority according to SML, ML, GML, RL, PML, PL, PLR, PPL, or alternatively

- b) give priority to largest investments made over the past five years.

As explained previously all identified errors at this stage are due to errors in the co-ordinates granted by LU. Consequently LU is obliged to reach agreements with the holders involved with regard to who of them should surrender his part of the overlap, and subsequently LU is obliged to negotiate compensations and maybe recovery of costs related to this process for the license holders.

Step Five – Development of the Clean Mineral Rights Inventory

At this stage, all relevant and correct information on all valid licenses have been gathered - and all mandatory fields from the Hard Copy Entry Forms have been filled in. After a second validation and quality control of the Hard Copy Entry Forms the data can be entered to the Mineral Rights Inventory. The archived hard copy confidential files should be cleaned accordingly to correspond correctly to the digital records in the database.

Step Six – Issue of New License Certificate

For all licenses accepted as a valid record in the Inventory at this stage, a new license certificate (including a unique license number) must be issued and delivered to the holder, and the associated information related to this can be entered into the database. Only then can an accurate new Mineral Rights Inventory be said to exist in Tanzania.

4.5 Corrections of Co-ordinates in the Field

According to Mining Act 1998 and Regulations 1999, all license holders are obliged to demarcate their license area in accordance with the (corrected) coordinates issued on their copy of the new license certificate. It must be regarded as the responsibility of the licensee to ensure that beacons are in place and positioned correctly to avoid land disputes and he should carry all expenses related hereto.

Step Seven – Instructions to Licensees

The Licensing Unit shall inform and instruct all license holders – and surveyors - about the geographical and technical specifications to be applied in any land survey. It must be ensured that co-ordinates are based on the same system and thus are comparable (Notification in the Gazette and the press may be considered).

Step Eight – Obligations of Licensees

The Licensee shall submit to the Licensing Unit a Surveyor's certificate of beacon positions proving that the actual beacon position in the field is in accordance with the new license certificate.

The Zonal Mines Office/Resident Mines Office may undertake randomly control inspections.

In the event that an overlap between two licenses is observed in the field or in the event a license is wrongly located, it occurs as a consequence of incorrectly surveyed data or a beacon is not in place. The holder shall be notified and told to correct the beacon in accordance with the co-ordinates granted, or alternatively his license shall be cancelled.

4.6 Time Schedule and Resources

The status of the Mineral Rights Inventory must be rectified irrespectively of how the modernisation of the Mining Law and Regulations proceed. To achieve the overall goal of all the activities dealt with in this project, it is strongly recommended to immediately start the implementation of the Plan of Verification in the following phases,

- A. Planning of project – inclusive pilot tests of the plan
- B. Notification of the public
- C. Suspension of relevant parts of the Mining Act (no applications accepted and no applications processed)
- D. Organisation of adequate set-up with regard to facilities (hard-ware, soft-ware photocopier, telephone etc), process manuals, offices, training of the officers, work-plans, archive facilities etc.
- E. Meetings with all licensees and harvesting of data – including first step data assessments (organised Zone by Zone)
- F. Quality control of all data gathered – including overlap check
- G. Entry of all data to the new Mineral Rights Inventory
- H. Negotiations with licensees regarding overlap
- I. Issuing of new License Certificates

The planning and execution of all these phases should be fitted to a zone-by-zone schedule, with the phases e) through i) being repeated for each zone being upgraded.

A rough time estimate for the individual phases are given in Report 7.2, indicating that planning and organising probably will amount to approximately three months, the harvesting of data about 8 months with follow-up work being undertaken partly simultaneously. It is anticipated that the implementation of the Verification Plan will take not less than 13 months, of which the Mining Act is suspended for about 12 months. This estimate is regarded to be the minimum – and assumes that all phases are working smoothly.

Since the relevant parts of the Mining Act is suspended, the LU and ZMO/RMO may have the resources to man the project, provided adequate trained has been undertaken in advance.

If it is assumed that a total of about 4,000 license holders will comply with the notice, about five parallel offices should be established for the 8 months period, each of which are expected to handle up to 100 licenses per office per month. Each office should be

manned with not less than three professionals and two technicians and secretaries. In addition about 3 supervisors and a number of controllers should also be added for phase E.

Moreover each office should be fully equipped with PC, printer, photocopier, telephone, and file cabinets for day-to-day filing of photocopies, receipts and Hard Copy Data Entry Forms.

**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

**DRAFT FINAL REPORT
October 12, 2002**

**Inventory of Mineral Rights
Mineral Rights Data Entry Forms
Report 3, Appendix B**

REPORT 3, APPENDIX B

DATA ENTRY FORM I: NEW MINERAL RIGHT

DATA ENTRY FORM II: RENEWAL OF A MINERAL RIGHT

DATA ENTRY FORM III: TRANSFER OF A MINERAL RIGHT

Record No.: _____

(Number provided by the system when entering data)

FORM III

DATA ENTRY FORM FOR TRANSFER OF A MINERAL RIGHT

1. **Submission date and time:** ___/___/___ **Hours:** ___:___

2. **Name of Current License Holder (Company):**

3. **Nationality of holder:** _____

4. **Contact Person:** _____

5. **Holders Postal Address:**

6. **Telephone and E-Mail:** _____ @ _____ . _____ . _____

7. **Names and address of Company Directors (Holder):**

8. **Names and address of Joint Venture Partners (Holder):**

9. **Certificate of Incorporation Number (Holder):** _____

10. **Registration Number (Holder):** _____

11. **Type of License to transfer:** _____

12. **License number to transfer:** _____

13. **Date of offer of License to transfer:** : ___/___/___

14. Date of grant of the License to transfer: ___/___/___

15. Confidential File No. (Holder): _____

16. Name/Company of Transferee:

17. Confidential File No.(Transferee): _____

18. Certificate of Incorporation No. (Transferee): _____

19. Nationality of Transferee: _____

20. Postal Address of Transferee:

21. Telephone and E-mail of Transferee:

_____ @ _____

22. Names and address of Company Directors of Transferee:

23. Names and address of Joint Venture Partners of Transferee:

24. Transfer agreement date: ___/___/___

25. Date of License transfer: ___/___/___

26. Mining Document Number: _____

27. Share transferred: _____

28. Type of Mineral sought: **AOBG** **GEM** **BUILD. MAT**

29. Locality: _____

30. District: _____

31. Zonal Mines Office: _____

32. Resident Mines Office: _____

33. Topo Sheet number: _____

34. Technical Resources satisfactory? (Yes/No): _____

35. Financial Statement satisfactory? (Yes/No): _____

36. Topo map (1:50,000) submitted? (Yes/No): _____

37. Memorandum and Articles of Association submitted? (Yes/No): _____

38. Feasibility Study submitted? (Yes/No): _____

39. Environmental Management Plan submitted? (Yes/No): _____

40. Environmental Impact Assessment submitted? (Yes/No): _____

41. Employment and training program submitted? (Yes/No): _____

42. Remarks

43. Approved for further processing? (Yes/No) _____ Date: ____/____/____

44. License area granted: _____ Sq.Km / Hectares

45. Granted Coordinates (Beacon no., Lat., Long., UTM_X, UTM_Y, UTM zone)

Beacon Latitudes Longitudes UTM_X UTM_Y UTM_Zone
No.

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

46. Available Financial Resources (Budget): _____ USD/TSH

47. Application Fee:

- i. ERV No: _____
- ii. Payment Date: ____/____/____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____

48. Transfer Fee Paid:

- i. ERV No: _____
- ii. Payment Date: ____/____/____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____

49. Annual Rent:

- i. ERV No: _____
- ii. Payment Date: ____/____/____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____
- v. Rent Expiry Date: _____

50. Royalties:

- i. ERV No: _____
- ii. Payment Date: ____/____/____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____
- v. Amount in TSh: _____
- vi. Amount in USD: _____

51. Consideration Fee:

- i. ERV No: _____
- ii. Payment Date: ____/____/____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____

52. Any other fees (e.g. Demarcation, etc):

- i. ERV No: _____
- ii. Payment Date: ____/____/____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____

53. Data entered by: _____

Date: ___/___/___

54. Data entry approved by: _____

Date: ___/___/___

Record No.: _____

(Number provided by the system when entering data)

FORM I

DATA ENTRY FORM FOR A NEW MINERAL RIGHT

SECTION A: Licence Application

1. Submission date and Time: ___/___/___ Hours: ___:___

2. Name of Applicant / Holder (Company):

3. Nationality: _____

4. Contact Person: _____

5. Postal Address:

6. Telephone and E-Mail: _____ @ _____

7. Names and address of Company Directors:

8. Names and address of Joint Venture Partners:

9. Certificate of Incorporation Number: _____

10. Registration Number: _____

11. Type of License: _____

12. Type of Application: _____

13. Original License number(s) held: _____

14. Confidential File number: _____

15. Type of Mineral sought: AOBG GEMSTONE BUILD. MAT.

16. Locality: _____

17. District: _____

18. Zonal Mines Office: _____

19. Resident Mines Office: _____

20. Topo Sheet number: _____

21. Available Financial Resources (Budget): _____ USD/Tsh

22. Area applied for (Sq.Km. or Hectares): _____ Sq.Km _____ Hec-
tares

23. Coordinates applied for (Beacon no., Lat., Long., UTM_X, UTM_Y, UTM zone)

Beacon No.	Latitudes	Longitudes	UTM_X	UTM_Y	UTM_Zone
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

24. Application Fee:

- i. ERV No: _____
- ii. Payment Date: ___/___/___
- iii. Amount in TSh: _____
- iv. Amount in USD: _____

25. Technical Resources satisfactory? (Yes/No): _____

26. Financial Statement satisfactory? (Yes/No): _____

27. Topo map (1:50,000) submitted? (Yes/No): _____

28. Memorandum and Articles of Association submitted? (Yes/No): _____

29. Feasibility Study submitted? (Yes/No): _____

30. Environmental Management Plan submitted? (Yes/No): _____

31. Environmental Impact Assessment submitted? (Yes/No): _____

32. Employment and training program submitted? (Yes/No): _____

33. Approved for further processing? (Yes/No): _____ Date: ___/___/___

34. Data entered on this form by: _____ **Date:** ___/___/___

35. Data authorised by: _____ **Date:** ___/___/___

SECTION B: Licence Granted:

36. Area granted (Sq.Km or Hectares): _____ Sq.Km _____ Hectares

37. Coordinates Granted for (Beacon no., Lat., Long., UTM_X, UTM_Y, UTM zone)

Beacon Latitudes Longitudes UTM_X UTM_Y UTM_Zone

No.

Beacon No.	Latitudes	Longitudes	UTM_X	UTM_Y	UTM_Zone
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

38. Granted License Number: _____

39. Date of Offer: ____/____/____

40. Date of Issue/Grant: ____/____/____

41. Duration of License validity: ____ Years

42. Date of Expiry: ____/____/____

43. Preparation Fee:

- i. ERV No: _____
- ii. Payment Date: ____/____/____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____

44. Annual Rent:

- i. ERV No: _____
- ii. Payment Date: ____/____/____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____
- v. Rent Expiry Date: ____/____/____

45. Any other fees (e.g. Demarcation, etc): _____

- i. ERV No: _____
- ii. Payment Date: ____/____/____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____

46. Remarks: _____

47. Data entered in this form by: _____ Date: _____

____/____/____

48. *Data entry approved by:* _____

Date: ___/___/___

Record No.:

(Number provided by the system when entering data)

FORM II

DATA ENTRY FORM FOR LICENCE RENEWAL OF A MINERAL RIGHT

1. **Submission date and time:** ___/___/___ H: ___:___

2. **Name of Applicant/Holder (Company):**

3. **Nationality:** _____

4. **Contact Person:** _____

5. **Postal Address:**

6. **Telephone and E-Mail:**

_____ @ _____ . _____ . _____

7. **Names and address of Company Directors:**

8. **Names and address of Joint Venture Partners:**

9. **Certificate of Incorporation Number:** _____

10. **Registration Number:** _____

11. **Type of License Held:** _____

12. **Type of Application:** _____

13. **Stage of Renewal (1st, 2nd, 3^d or Retention):** _____

14. **License number held:** _____

15. Confidential File Number: _____

16. Type of Mineral sought: **AOBG** **GEM** **BUILD. MAT.**

17. Locality: _____

18. District: _____

19. Zonal Mines Office: _____

20. Resident Mines Office: _____

21. Topo Sheet number: _____

22. Original license area Held (Sq.Km or Hectares): _____ Sq.Km/Hectares

23. Area applied for (Sq.km or Hectares): _____ Sq.Km/Hectares

24. Coordinates applied for (Beacon no., Lat., Long., UTM_X, UTM_Y, UTM zone)

Beacon No.	Latitudes	Longitudes	UTM_X	UTM_Y	UTM_Zone
------------	-----------	------------	-------	-------	----------

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

25. Technical Resources satisfactory? (Yes/No): _____

26. Financial Statement satisfactory? (Yes/No): _____

27. Topo map (1:50,000) submitted? (Yes/No): _____

28. Memorandum and Articles of Association submitted? (Yes/No): _____

29. Feasibility Study submitted? (Yes/No): _____

30. Environmental Management Plan submitted? (Yes/No): _____

31. Environmental Impact Assessment submitted? (Yes/No): _____

32. Employment and training program submitted? (Yes/No): _____

33. Approved for further processing? (Yes/no): _____ Date: ____/____/____

34. Coordinates Granted (Beacon no., Lat., Long., UTM_X, UTM_Y, UTM zone)

Beacon Latitudes Longitudes UTM_X UTM_Y UTM_Zone

No.

Beacon No.	Latitudes	Longitudes	UTM_X	UTM_Y	UTM_Zone
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

35. Area granted (Sq.km or Hectares):
_____ Sq.Km/Hectares

36. Date of Offer (Renewal): ____/____/____

37. Date of (Renewal) grant: ____/____/____

38. Duration of (Renewal) validity: ____ years

39. Date of (Renewal) Expiry: ____/____/____

40. Available Financial Resources (Budget): _____ USD/Tsh

41. Application Fee:

- i. ERV No: _____
- ii. Payment Date: ____/____/____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____

42. Preparation Fee:

- i. ERV No: _____
- ii. Payment Date: ____/____/____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____

43. Annual Rent:

- i. ERV No: _____
- ii. Payment Date: ____/____/____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____

44. Any other fees (e.g. Demarcation, etc):

- i. ERV No: _____

- ii. Payment Date: ____ / ____ / ____
- iii. Amount in TSh: _____
- iv. Amount in USD: _____

45. Remarks:

46. *Data entered in this form by:* _____ *Date:* ____ / ____ / ____

47. *Data entry approved by:* _____ *Date:* ____ / ____ / ____

**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

**DRAFT FINAL REPORT
October 12, 2002**

MCIMS

Mining Cadastre Information Management System

Report 4

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Abbreviations

IT	Information Technology
LU	Licensing Unit, Ministry of Energy and Minerals
MEM	Ministry of Energy and Minerals
RMO	Resident Mines Office
ZMO	Zonal Mines Office

Note: many other technical terms are used; please refer to an IT-expert for description.

Executive Summary

1. Three configurations of a MCIMS, based on necessary common technical design specifications are defined: Configuration A without direct access to the database by the ZMO, Configuration B with the minimum configuration to make this access possible in the existing conditions; Configuration C with a modern system ensuring future extensions.
2. The implementation plan should go with the development of the training plan, tender for MCIMS, amendments of the Law and Regulations, equipment and office supply.
3. The co-ordinates should be measured using the WGS-84 datum or Arc 1960. The Universal Transverse Mercator-Projection (UTM), 36th zone South, should be used as projection, preferable using meters as units. Central Meridian 33.
4. The integration with other databases is not appropriate because inducing fully co-ordinated decisions. Modern developments use more co-ordination than integration, allowing links and independent developments. The MCIMS is one of the first high-tech developments in the land administration in Tanzania, and it is recommended to organise institutional co-ordination before developing common access keys.
5. The database maintenance cannot be ensured before the verification plan is implemented and migration to the new system cannot be done otherwise.
6. The pros and cons of each configuration are listed in order to propose the best adapted configuration to the needs and constraints in Tanzania, MEM, the LU and ZMOs. It was considered that Configuration B is the most suitable in Tanzania and Technical Specifications and Tenders are made accordingly.
7. It is recommended to select the B Configuration, which (i) ensure that future improvements are implemented; (ii) can be implemented in an acceptable time, minimising the risk of long-term work with two systems in parallel. The risks are: (i) necessity of implementing a long-term plan, including not only MCIMS technology but institutional strengthening and amendments of the Law; and (ii) shortage of available budget.

1. Introduction

This report defines three configurations of a MCIMS, based on necessary common technical design specifications. The Consultant will list pros and cons of each configuration in order to propose the best-adapted configuration to the needs and constraints in Tanzania, MEM, the LU and ZMOs.

The general design takes into account the co-ordinate system, co-ordination with other stakeholders, GIS and database maintenance and migration to the new system. All these aspects are presented in Chapter 2.

The migration process should take into account the existing situation, which is summarised in Chapter 2.1.

1.1 Situation in MEM, LU

The existing hardware and standard software is summarised in Table 1.

Table 1 Existing hardware and software in MEM / LU

Type	Working condition	Hard disk	Speed	Memory	Network card	Operating System	Applications
IBM	Good	8 GB	Pentium (r)	32 MB	Yes	MS Windows 98, Norton SystemWorks 2001	MapInfo Professional 6.0, MS Office 97
IBM	Good	8 GB	Pentium (r)	32 MB	No	MS Windows 95, Norton SystemWorks 2001	MapInfo Professional 6.0, MS Office 97
IBM	Good	2 GB	Pentium (r)	16 MB	No	MS Windows 95, Norton SystemWorks 2001	MS Office 97
IBM	Good	20 GB	Pentium (r)	16 MB	Yes	MS Windows XP, Norton SystemWorks 2001	MapInfo Professional 6.0, MS Office 97
HP Vectra	Faulty	9 GB	Pentium III 733 MHz	128 MB	Yes	MS Windows 98, Norton SystemWorks 2001	MS Office 97
Compaq Laptop	Good		Pentium	127 MB	Yes	MS Windows 98, Norton SystemWorks 2001, Office XP	MS Office 97
Compaq D300 P1	Good	40 GB	Pentium 1.7 GHz		Yes	MS Windows 98, Norton SystemWorks 2001, Office XP	MS Office 97

All computers have CD-ROM and Floppy Drive. One tape Drive for back up exists, but is not used for that purpose.

Printers:

- HP LaserJet 405
- HP LaserJet 6 L

- HP DeskJet 1125 C (colour)
- HP LaserJet 1200 Series PCL 6

1.2 Database system and data migration

The LU uses a special software package based on MapInfo and developed by SEAMIC with some functions:

- License database management
- Co-ordinate checking
- Printing reports

Most of the functions are related to a mining cadastre system. However, the system is not efficiently used (see Report T1: assessment of the MEM's mandate) for several reasons: (i) no documentation was distributed to the employees, though a basic user's guide does exist; (ii) no employee has followed training courses to be able to use all the functions of the system properly; (iii) many functions are not used at all; (iv) the IT-process is not adequately integrated into the license application processes.

This simple system is a PC-based system, not adaptable to extensions to a network and a complex database system.

It is agreed that the new MCIMS will not use the functions developed by the old system.

The transfer of all existing data to a new database is an important issue. The assessment of the existing data inventory concluded that it would be necessary to put in place a comprehensive verification plan, and a special database was designed, developed and implemented for this purpose (see Report 3, Inventory and Verification Plan).

The database system on Access ensures that the data stored after the verification are complete, up-to-date, and can migrate without difficulty to the new MCIMS to be developed. It naturally follows that the complete migration can be done only after the verification plan has been completed

1.3 Design and use of the geodetic reference system in Tanzania

The recommendations given in the "Improvement of the Tanzanian Mining Cadastre" (Swedish Geological AB, 1997) is still valid but in most cases still has not been implemented. Obtaining better measurements of co-ordinates for the license beacons require accuracies below 1 meter. The Ministry of Land Use and Settlement claims to use accuracies of 0.3 m for Real Property Rights. To obtain such accuracies Differential GPS (real time DGPS when possible) instead of Standard Positioning Service should be used. This technique requires a national network of geodetic points, which does to our knowledge not exist. Before such a network is established accuracies below 10 meters are doubtful.

Therefore, workable accuracy for mining licenses depends on external parameters, which are under the control of The Land Survey and Mapping Department.

Until an accurate geodetic network has been established, measurements should be conducted using real time DGPS, but this is expensive and requires training of the officers at the RMO/ZMO. Also, it cannot be expected that all applicants have access to the necessary instrumentation. The technique is at present simply not implemented at a national level. Never the less this must be the ideal to aim for.

The co-ordinates should be measured using the WGS-84 datum or Arc 1960. The Universal Transverse Mercator Projection (UTM), 36th zone South, should be used as projection, Central Meridian 33; preferable using meters as units.

Plotting licenses of 50x50 meters at maps in scale 1:50.000 in a country of 942.700 sq. km. do call for national useable projections and not precise local projections, which most people would not know of or know how to use. It is recommended to introduce a national grid system, and this does call for a nationally useable projection. Using a UTM projection would be preferable for foreign companies, which would be able to prospect and use available GIS data without having to transform instrument specifications and GIS data. It will make the system more transparent and useable.

The most important consequence of a national projection is related to the registration procedure, where every entry to the MCIMS should be based on one and only one projection and datum, thereby limiting errors and making data easily available for plotting etc.

1.4 Relation and link with other stakeholders

The legal and organisational relations with external stakeholders was described in detail in the Report Task 1: "Assessment of MEM's mandate" and related amendments of the Law and Regulations proposed in Report 2.1 and 2.2: "Assessment of the Legal and Regulatory Framework" and "Proposed amendments of the Law and Regulations"

It was deducted from this study that the relation between stakeholders is a major institutional issue: consistency of the Laws and Regulations, operational co-ordination bodies, regulated exchange of information.

No other Ministry has developed a basic land-related computerised system. The Tanzania Government is taking into account new policies leading for example to a very new Land Law, 1999 that needs several years to be fully operational. No land-related or IT-system consistent project was identified and it is not expected that such a system will emerge in the next couples of years. Under these conditions, it is impossible and risky to foresee future developments, in a fast changing technical environment.

It is recommended to develop the MCIMS separately within the Ministry in using standard software that can be easily connected to any new system in the future. The use of a co-ordinated system similar to the Survey division of the Ministry of Lands, the access to ZMO

by customers, including to Local Government, is more related to public relations than it is a technical issue.

The permanent contact with stakeholders, promotion of the system, and perhaps in a near future the creation of a Land Committee debating on land-related and cadastre issues, is the maximum requirements at this stage of development.

2. Technical design

The principle is to store all information about Mining Licenses in one location, the Central Database, to keep track of changes, provide distribution tools to the public and to organise access to the appropriate area information for the ZMOs.

The Registration System will be divided into two system parts:

- **RMO/ZMO** –The applicants apply to and from ZMO/RMO where data are “entered” or emailed. The RMO/ZMO will not have direct access to the database but will email applications or use Internet. The system configuration at the RMO/ZMO is kept as simple as possible, communication is using a HUB for access to the data from the Central Server.
- **Central server** – the central part of MCIMS, which stores all registered information, journals and logs.

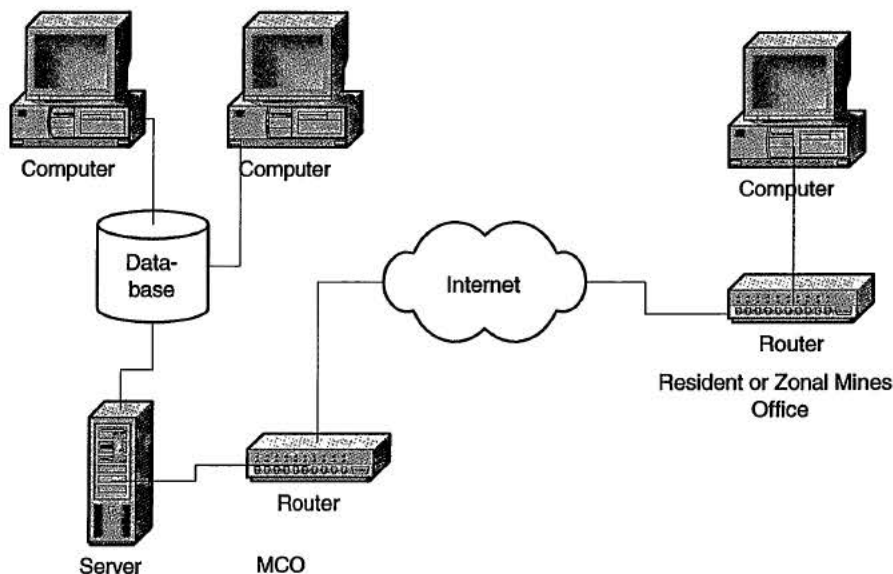


Figure Fejll Ukendt argument for parameter.. *Principle outline of MCIMS*

Five databases are defined:

- Journal Database – information about reception of application forms, their type, status and date/time.
- Database of Mining Cadastre – storage of all licenses. This database stores information about licenses.
- Replications Database– database used to replicate data accessible for the RMO/ZMO or at the Internet for the public.
- Refusal Archive/database – an archive database for all refused licenses.
- Discharge Archive/database – an archive database for all discharged licenses.

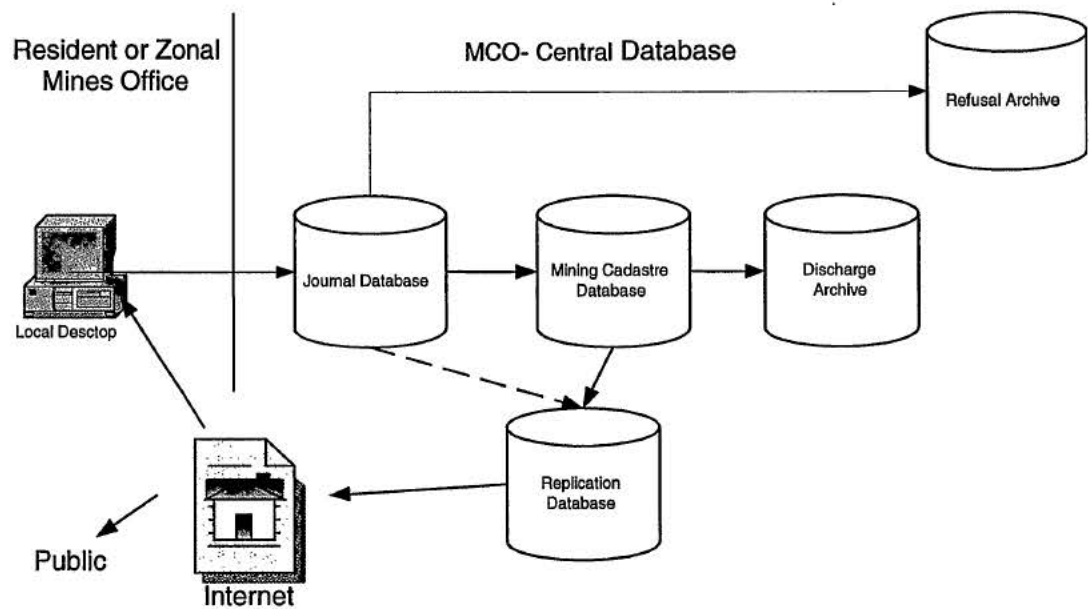


Figure Fejl! Ukendt argument for parameter.. *Databases of MCIMS*

Entries to the MCIMS are coming from two sources:

1. RMO/ZMO

Clerical Staff responsible for

Entering data from the application form

Correcting the information previously entered

Officers responsible for

Control of data entry

Cross-checking of the documents

Adding to the Journal Database (Application Forms Procedures)

Make decisions

2. MCO is responsible for

Updating the Journal and Mining Cadastre Database

Maintenance of hardware, basic software and MCIMS-specific software in the RMO/ZMO and at MCO

Monitoring the process and access to MCIMS

Backup

Supporting users of the distribution system – the RMO/ZMO and the public

Special attention to the servers is needed, which handles:

- Mails
- Files
- Database
- Security
- Users
- External access

- Internet
- Anti virus
- Backup

3. System configurations

Three configurations are proposed. All three configurations fulfil the requirements defined in the technical design.

The configuration objectives are the following:

- Configuration A: Minimise the changes in the current use and the cost to ensure that this project can be implemented. It is proposed that the system is developed at the central level, with no specific system in ZMO. Some data are accessible by Internet and communication with ZMO uses email tools.
- Configuration B: Develop the system at the central and ZMO level. Provide the minimum equipment to be able to operate during at least the 5-10 next years after implementation.
- Configuration C: Modern state-of-the-art equipment providing easier access and interconnectivity, efficient process and ensuring future development and extensions,

Pros and cons of the three configurations are developed after the presentation of the three options.

3.1.1 Configuration A: Minimise changes

The configuration in the figure 3 is the simplest configuration that does not use IT direct access to the database for the ZMO.

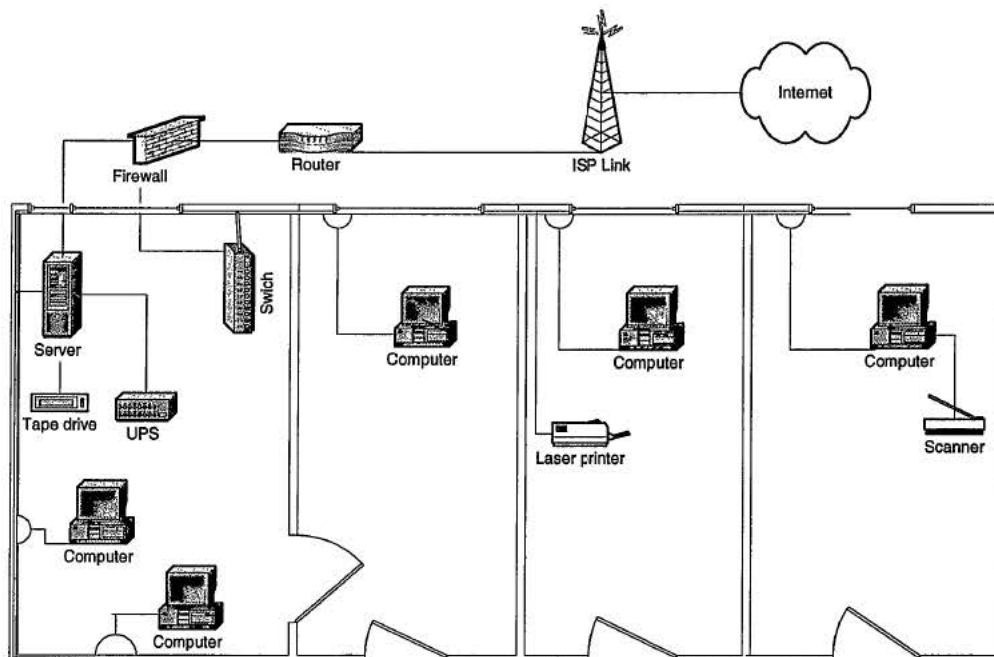


Figure Fejl! Ukendt argument for parameter.. Configuration A

It is expected that the number of PC will increase from 5 to 12, and the printer from 1 to 5, including an A1 format printer. A plotter should be added to this configuration to print maps.

In 2-4 years time it would be relevant to install a second server to deal with files and the database and therefore the choice of server software should be SQL Server 2000 Standard or identical software.

Hardware – Configuration A

Table 2

Hardware	Quantity
LU equipment	
S.1: Domain Controller, File & BDC, Central Database, Domain and Registration Server	1
S.3: Web Server (Optional)	1
Personal Computer	12
Printer	5
Plotter	1
Router	1
Switch	1
UPS	1
Tape drive (Backup)	1
Firewall	1
RMO/ZMO (26) equipment (only individual PC)	26

Software - Configuration A

Table 3

Standard Software	Quantity
LU	
Windows Server 2000 English with 6 (1 server + 5 clients) pcs. CAL	1
Microsoft Internet Information Server	1
Microsoft Office 2000 Professional (1 server + 5 computers)	13
Antivirus software (1 server + 5 computers)	13
Modem	1
RMO/ZMO (26) (only Microsoft Office 2000 Professional and Antivirus)	26

3.1.2 Configuration B: Network development

This configuration includes a Web Server to handle registration formulas and access by the public. A server and modems ensure communication with ZMO.

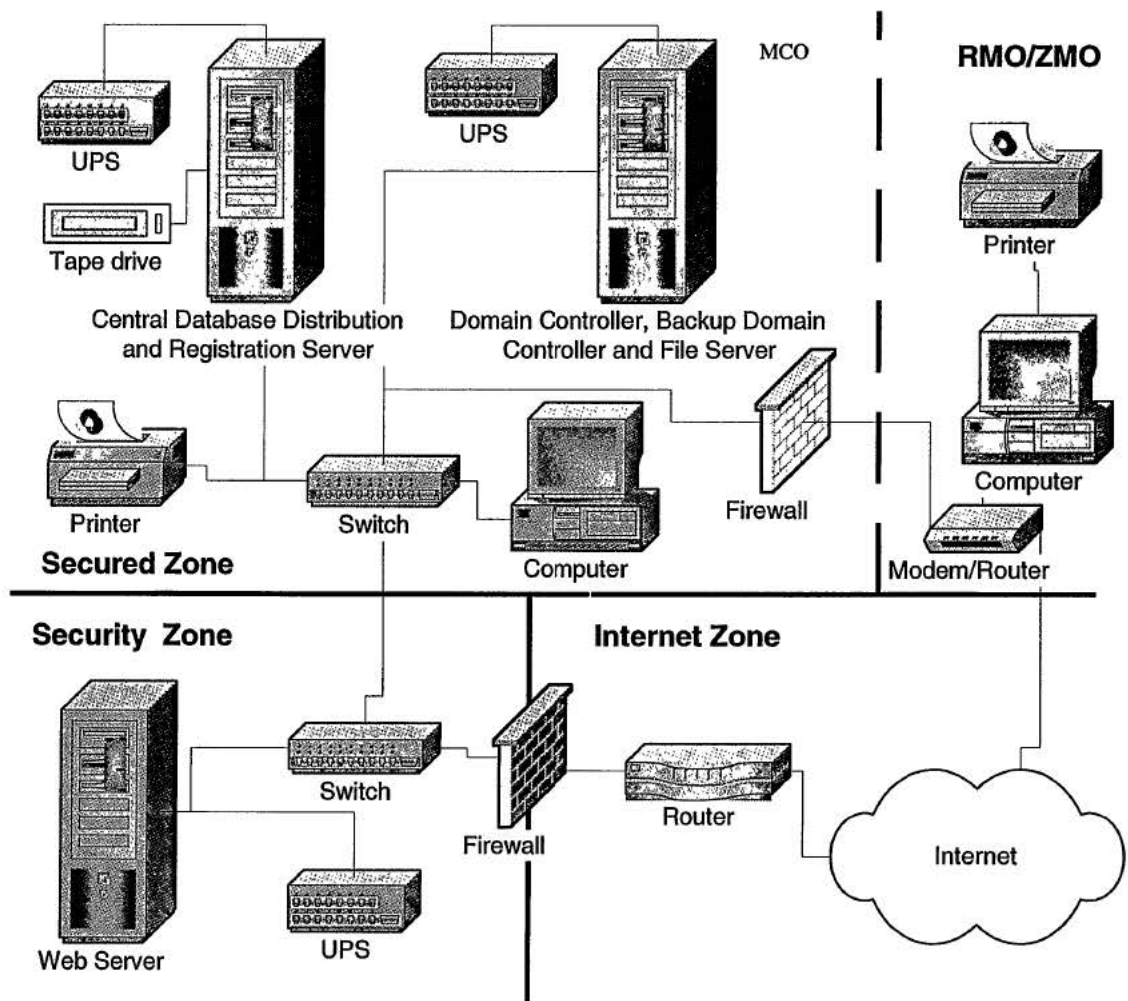


Figure Fejl! Ukendt argument for parameter.. Configuration B

The servers in Configuration B has to handle various functions:

- Domain Controller
- File & BDC
- Central Database Distribution and Registration Server
- Central Database

Hardware – Configuration B

Table 4

Hardware	Quantity
LU equipment	
S.1: Domain Controller, File & BDC, Central Database, Domain and Registration Server	1
S.2: (Central) Database Distribution and Registration Server	1
S.3: Web Server	1
Personal Computer	12

Hardware	Quantity
Printer	5
Plotter	1
Switch	2
Firewall	2
UPS	28
Tape drive (Backup)	1
Router	1
Modem	1
RMO/ZMO (26) equipment	
Personal Computer	26
Printer	26
Modem/Router	26

Software - Configuration B

Table 5

Standard Software	Quantity
LU	
Windows Server 2000 English with 8 (3 servers + 5 clients) pcs. CAL	12
MS SQL Server 2000 Std. Ed. English with 8 (3 servers + 5 clients) pcs. CAL	12
Microsoft Internet Information Server	1
Microsoft Office 2000 Professional (3 servers + 12 clients)	15
Antivirus software (3 servers + 12 clients)	15
RMO/ZMO (26)	
Microsoft Windows2000	26
Microsoft Office 2000 Professional	26
Antivirus software	26

3.1.3 Configuration C: The advanced solution

Figure 5 shows an overview of hardware and network components for the operation of MCIMS with registration at RMO/ZMO connected online with MCO.

This configuration is the most advanced configuration where several dedicated servers improve performance and security.

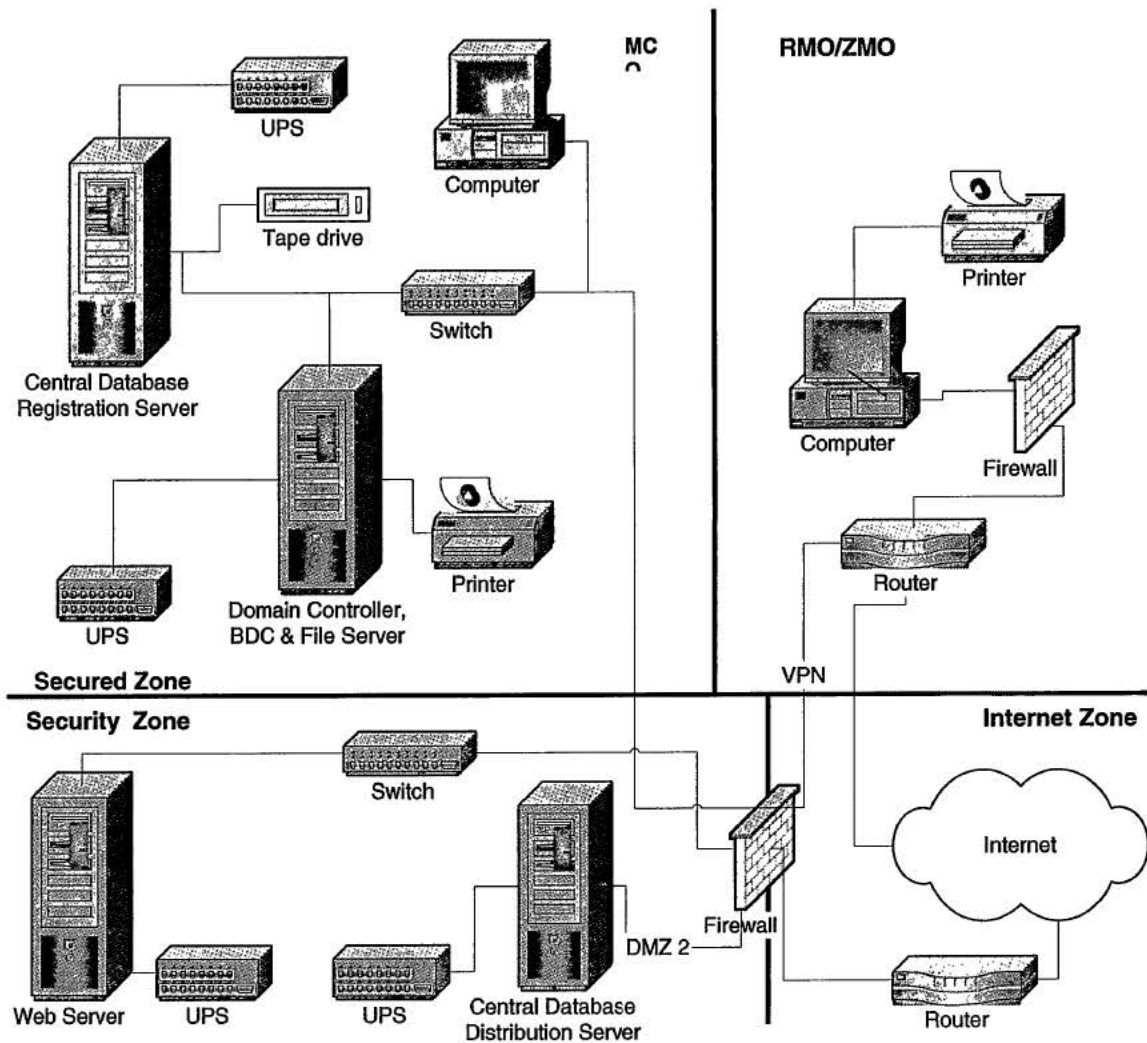


Figure Fejl! Ukendt argument for parameter.. Configuration C

Hardware - Configuration C

In Configuration C, 4 servers are defined. There are three server types, with operation split into several servers. The allocated servers of Configuration C optimise connectivity with RMO/ZMO, administration, security and maintenances.

Table 6

Hardware	Quantity
LU equipment	
S.1: Domain Controller, File & BDC Server	1
S.2: (Central) Database Distribution	1
S.2: (Central) Database Registration Server	1

Hardware	Quantity
S.3: Web Server	1
Personal Computers	12
Printer	5
Plotter	1
Router	1
UPS	12
Modem	2
Switch	2
Firewall	1
RMO/ZMO (26) equipment	
Personal Computer	26
Printer	26
Router	26
Firewall	26

Software - Configuration C

Table 7

Standard Software	Quantity
LU	
Windows Server 2000 English with 9 (4 servers + 5 clients) pcs. CAL	12
MS SQL Server 2000 Std. Ed. English with 9 (4 servers + 5 clients) pcs. CAL	12
Microsoft Internet Information Server	1
Microsoft Office 2000 Professional	16
Antivirus software	16
Remote control software	1
RMO/ZMO (26)	
Microsoft Office 2000 Professional	26
Antivirus software	26
Remote control software (pcAnywhere) 26 * 2	52

3.2 Standard software

3.2.1 Database

The central database servers shall store all information that is entered in the next 5 years. After 5 years it's recommended to migrate data to other database server software. In general Access is used in an office environment with few (max 10) persons using the database. Connectivity to ZMO can be difficult if ZMO use permanently the access to the database. In this case a SQL Server solution is recommended.

The GIS software is also depending on the configuration selected. MapInfo Runtime is recommended for configurations A and B, MapInfo Professional or MapX for B and C. The difference between MapInfo Runtime and Professional is the complexity of operations that can be performed and a superior functionality in MapInfo Professional. MapX allows professional, advanced Internet functionalities and should be used if it's decided to have the database available to the public as well as to ZMO.

MapInfo handles GIS operations as a component to Microsoft Database Software and is found to be the easiest software to be implemented. Other relevant standard software is ARC software, ARCView or ARCGIS with somewhat similar functionalities.

3.2.2 Database system

The database systems can be divided into the simple desktop DB and the more sophisticated relational/object relational database systems. DB systems could be MS Access, MS SQL Server and Oracle. Both Oracle and MS SQL Server spatial (GIS) provide many additional functions increasing complexity and extending the use of geographical data management. Oracle is a well-known database, and widespread in huge organisations, but pre-assumes much training and recruiting of Oracle specialists to operate the system. It is recommended not to use Oracle, which proposes complex functions not need for the Mining Cadastre in the near future. Access and MS SQL Server are considered to be the most suitable systems, because of the lower complexity, ease-of-use and cost.

MS Access is a desktop database, and should be used for no more than 15 persons at a time. The database should be used on high-speed network connections (LAN – Local Area Network). It is not suitable for use over low speed network connections (WAN – Wide Area Network). With this in mind, MS Access is suitable for use in an office environment, not for use in a geographically widespread organisation. MS Access has no built in backup, which must be developed specifically. No special technical skills are required to manage an MS Access database system. It is fairly easy to move an application build on MS Access onto an MS SQL Server environment.

MS SQL Server is a server-based database system. It can be used in systems with network connections over WAN's (Wide Area Networks). It can therefore be used in organisations with geographically widespread offices. A certain amount of technical knowledge is required to manage an MS SQL Server database. Backup utility is built-in and several tools to manage the database are available.

Either MS SQL Server or MS Access should be used depending on the functionality required. For central registration functions, MS Access can be selected. If the distribution system expands, it could be moved to an MS SQL Server platform. MS SQL Server allows connections over WAN's and has very good backup facilities. MS Access is recommended in Configurations A and B while MS SQL Server is recommended in Configurations B and C.

A suitable strategy would be to implement MS Access and get the system up and running, which probably would take several years. In the meantime the ZMO would become online as the cables in Tanzania are laid down. Then the database could migrate to MS SQL Server, including public access to the database.

3.2.3 GIS technology

The suited GIS technology depends on the number of GIS operations, data and maps. The present functionalities needed are verification of ownerships, overlapping licenses and simple querying for reports.

It is recommended to start with MapInfo Runtime/Professional and Access Database to move later to SQL Server with MapX when new functionalities are developed, and the users in MEM have become proficient in the use of the programmes.

MapInfo Runtime is a complete MapInfo Professional without user interface. With MapInfo Runtime a developer can make use of all the well-known functionality of MapInfo Professional. The user interface gives the user the only access to the functionality needed for the geographical part of MCIMS. A MapInfo Runtime application has to be developed in the MapInfo MapBasic development language, which is an integrated part of MapInfo Professional and Runtime. Easy-to-use entry forms can be developed in MS Access VBA or Visual Basic.

MapInfo Professional is a full-blown desktop GIS-system. With the use of the development language MapBasic a system developer can learn the functionality of MapInfo Professional. The geographical part of The MCIMS can be developed using MapInfo Professional. In case of future necessities of developing other GIS related task, MapInfo Professional is relevant, but induce a comprehensive training and education plan. The Entry forms can be developed in MS Access VBA or Visual Basic.

MapInfo MapX is an ActiveX component that can be implemented directly into any application on the Microsoft platform. The programming language is Visual Basic, Visual C++, Delphi or any other programming language supporting the ActiveX technology. With MapX a developer can make use of the powerful and well-known functionality of MapInfo Professional. MapX is able to connect to both MS Access and MS SQL Server (and other well-known database systems such as Oracle and DB2). MapX makes data available at the Internet and allow graphic extensions.

With MapX a total integrated Mining Cadastre Information system can be developed. Both entry forms and the license verification can be developed within the same environment/application, giving the user an experience of a more complete system. The user interface is completely within the standards of Microsoft Windows and thereby minimises the need. If the application, over time, is to be used in a geographically widespread organisation the use of MapX offers the best alternative in regard to the total cost of ownership and stability of the system.

4. Recommendation

Based on the descriptions of the different configurations and software in Chapters 2 and 3, the pros and cons are listed in Table 8.

Table 8. *Pros and Cons for three different MCIMS configurations.*

Configuration	Pros	Cons
A: Minimise the changes	<ul style="list-style-type: none"> ▪ Less expensive solution ▪ Feasible without major risks in a short time ▪ Less changes in the organisation, easier integration in the current system ▪ Training easier to undertake locally. 	<ul style="list-style-type: none"> ▪ System to be changed in the near future (c. 5 years). ▪ Changes in the organisation necessary in any case, not taken into consideration. ▪ No direct access to the database in ZMO
B: Network development	<ul style="list-style-type: none"> ▪ Access to the information by ZMOs ▪ Easy to use standard software ▪ Possible extension in the future 	<ul style="list-style-type: none"> ▪ Need a long-term investment plan ▪ Training plan to implement ▪ Is going with a comprehensive approach (amendments, organisation, budget)
C: Advanced solution	<ul style="list-style-type: none"> ▪ Ensure that a modern system will operate for a long time ▪ Can motivate the staff using modern and efficient technology ▪ Provide the better technical solution with many functionalities and possible developments 	<ul style="list-style-type: none"> ▪ Need a long-term strategy, implementation plan and funding. ▪ Specialised personnel not in place to recruit. ▪ High cost ▪ Training and long-term educational background necessary

The major risk for Configuration A is that the proposed system should be changed at medium-term because not fitting the changes. The risk of Configuration C is that advanced technology necessitates a costly monitoring with recruitment of very specialized staff.

It is recommended to select the B Configuration, which (i) ensure that future improvements are implemented; (ii) can be implemented in an acceptable time, minimizing the risk of long-term work with two systems in parallel. The risks are: (i) necessity of implementing a

long-term plan, including not only MCIMS technology but institutional strengthening and amendments of the Law; and (ii) shortage of available budget

The implementation plan should go with the development of the training plan, tender for MCIMS, amendments of the Law and Regulations, equipment and office supply.

The total duration for such an implementation is evaluated as follows:

- one year for tender process (verification plan in parallel)
- six month for signing contract
- one year until final implementation

The detailed description of the hardware and software, as well as the Technical specifications of the MCIMS are defined in the Report 5: Information System and Information Technology and in Report 7.3, Tender Document.

**CONSULTANCY FOR THE DEVELOPMENT OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

**DRAFT FINAL REPORT
October 12, 2002**

Information System and Information Technology Architecture

Report 5

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Abbreviations

DBC	Server Database Control system
IT	Information Technology
LU	Licensing Unit, Ministry of Energy and Minerals
MCO	Mining Cadastre Office
MCIMS	Mining Cadastre Information Management System, including hardware, network installation, standard software, system developments
MEM	Ministry of Energy and Minerals
RMO	Resident Mines Office
SQL	System Query Language, software to access the database information
ZMO	Zonal Mines Office

Executive Summary

1. The MCIMS consists of hardware, standard software, application system and network installation, based on the configuration selected in Report 4 "MCIMS". Most of the information in Report 4 is part of the Technical Specifications of the Tender Document, Report 7.3.
2. The MCO and the ZMOs should share the same up-to-date information on applications and licenses. The Information System and Information Technology Architecture are based on a network installation which allows for communication between MCO and ZMOs, with databases providing registration access to MCO and information on the right location to ZMOs. Major issues as security, control of external access to the database or queries, possible future extensions are taken into consideration.
3. The hardware and standard software are listed in the Report. Suggestions are Microsoft products on 5 desktop computers with Windows 2000 and Windows Office XP. The server software is Microsoft Windows Server 2000 and ISA Server 2000 to handle the firewall and external communications (Proxy server).
4. The database environment is also Microsoft (Access or SQL), where Access is opted for, being the best choice at the moment and an SQL Server at a later stage. The database handles all entries and the data is only kept in the database.
5. The GIS should be a component of the database and MapInfo software is proposed, being the GIS responding best to the present needs and the database environment.

1. Introduction

The present report relates to Task 5 and consists of the input of the Technical Specifications attached in the Tender documents under task 7.3. The description of computer hardware, software, system development and network installation is based on the "B" configuration described in Report 5 "MCIMS". Justifications for this option are detailed below.

The establishment of a MCIMS should improve the entire process of licensing, the administration of mineral rights, and should increase efficiency of the process of issuance of mineral rights, as well as improve the accuracy of information and ease the access to it.. The overall objective of a MCIMS is to provide a modern computerised Mining Cadastre System for Tanzania so to facilitate expeditious and transparent processing of licenses and ensure a sustainable administration of mineral rights by the Government.

One of the major advantages is to give access to the public (mining companies, in particular) to up-to-date information concerning the Licenses granted and the applications status. The use of Internet would increase awareness of the mining industry among the public, increase the possibilities for foreign investments and allow permanent control of the Mining Cadastre registration. International companies will easily be able to browse through published licenses or even check the geographic location of licenses or open areas for prospecting.

The office in charge of operating and maintaining the MCIMS is currently the Registry and Licensing Sub-Section of the Minerals Division, MEM. A new organisation structure is proposed in Report 6, replacing the LU with a Mining Cadastre Office (MCO), therefore the use of MCO in this report is opted for.

The MCIMS consists of equipment, standard software and application software. The application software includes:

- Databases design and implementation
- Registration programs
- Communication programs
- Application programs for reports, certificates and statistics
- Distribution programs
- Other application programs for MCO and RMO/ZMO (Quality control, GIS Component)
- System documentation
- Internet access for the RMO/ZMO and the Public

Some terminology in the present report is specific to the IT register, therefore, the assistance of IT experts for detailed explanation of the jargon is recommended.

2. System outline

2.1 General design

The purpose of the MCIMS is to store all information about Mining Licenses in one location, being the Central Database, where the history of changes will also be kept, and could be traced. In other words, the Central Database will contain information concerning Mining License applications and Licenses granted, as well as historical data concerning cancelled Licenses. The MCIMS will in the meantime provide the possibility for distributing the data to the public.

The Registration System will be divided into two systems:

1. **RMO/ZMO** –where applications are submitted to and from ZMO/RMO where data are “entered” or emailed. The RMO/ZMO will not have direct access to the database but will email applications or use Internet for their processing. The system configuration at the RMO/ZMO is kept as simple as possible, communication is using a HUB then the data is accessed from the Central Server.
2. **Central Server** – is the central part of MCIMS, which stores all registered information, journals and logs.

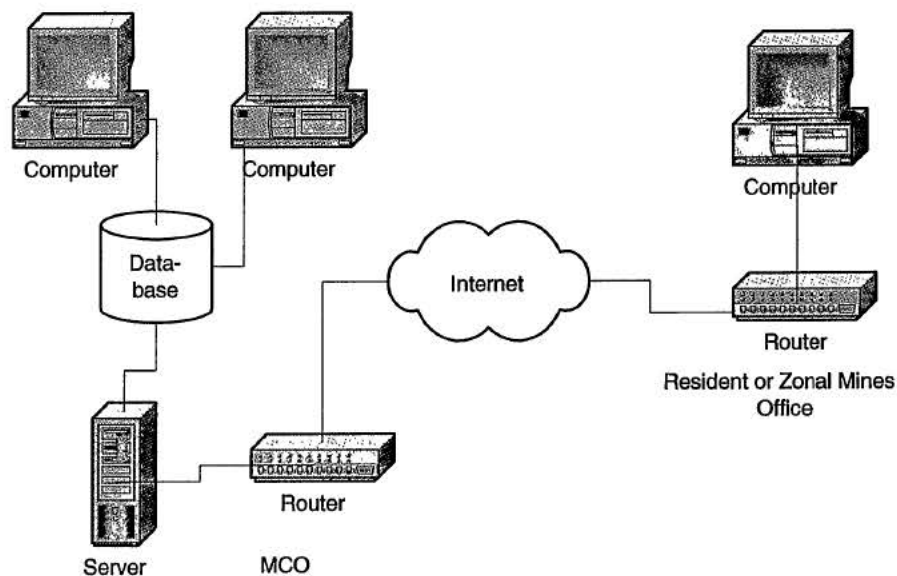


Figure Fejl! Ukendt argument for parameter.. *Outline of MCIMS*

The network should be based on a Wide Area Network (WAN) migrating to a Local Area Network (LAN) over the next 5 to 10 years, so to take into consideration expected developments in network connectivity in Tanzania.

2.2 Data storage

The Databases system is described in Figure 2. Five Databases are defined, with data storage located in RMO/ZMO to support recording of working documents:

- **Journal Database** – information about reception of application forms, their type, status and date/time of submission. This database records all entry documents.
- **Database of Mining Cadastre** – storage of all licenses. This database stores information about licenses.
- **Replications Database**– database used to replicate data accessible for the RMO/ZMO or on the Internet for the public.
- **Refusal Archive/database** – an archive database for all rejected licenses.
- **Discharge Archive/database** – an archive database for all discharged licenses.

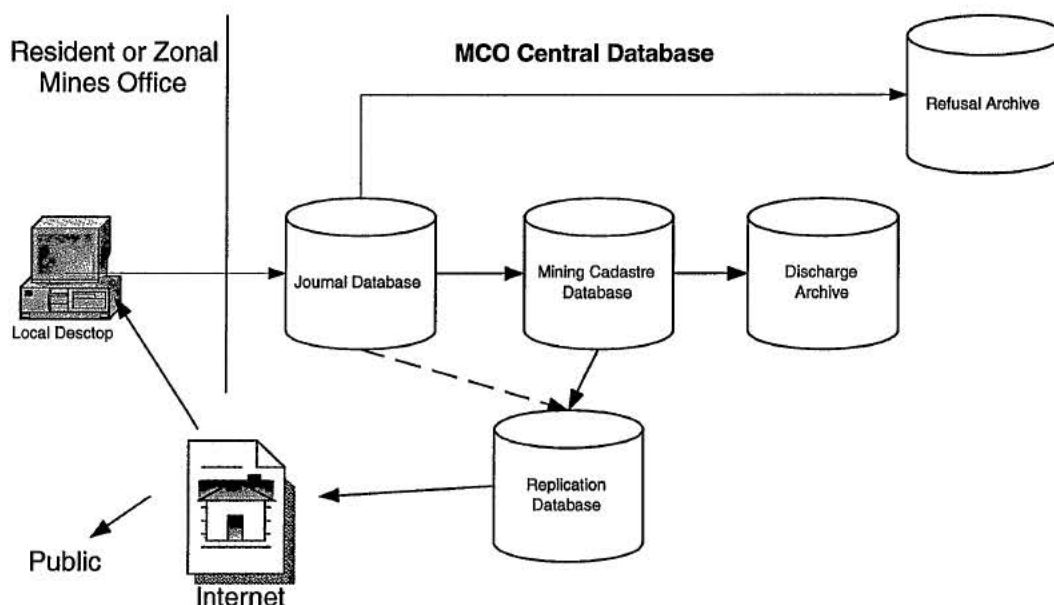


Figure Fejll Ukendt argument for parameter.. *Databases of the system*

2.3 System access

Entries to the MCIMS are coming from two sources:

1. RMO/ZMO

- Clerical Staff responsible for:
Entering data from the application form

- Correcting the information previously entered
- Officers responsible for:
 - Control data entry
 - Perform crosscheck of the documents
 - Adding to the Journal Database (Application Forms Procedures)
 - Make decisions
- 2. MCO is responsible for:
 - Updating the Journal and Mining Cadastre Database
 - Maintenance of hardware, basic software and MCIMS-specific software in the RMO/ZMO and at MCO
 - Monitoring the process and access to MCIMS
 - Backup
 - Supporting users of the distribution system – the RMO/ZMO and the public.

3. Architecture

3.1 Network configuration

The Figure 3 describes the detailed architecture of the system, including network facilities.

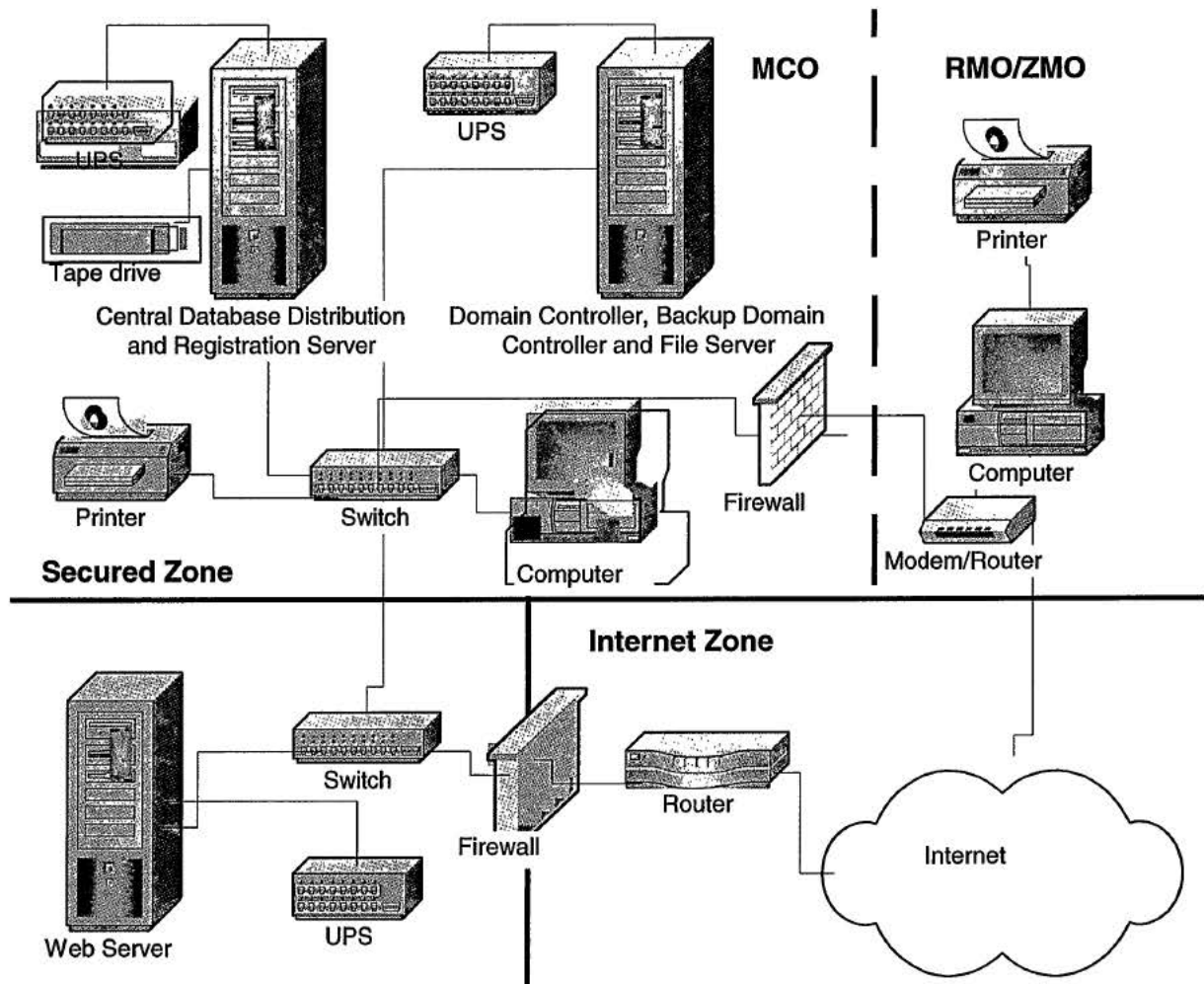


Figure Fejl! Ukendt argument for parameter.. Hardware and network components for operation of MCIMS at MCO

The servers have to handle the following functions:

- Domain Controller
- File & Data Base Control (DBC)
- Central Database Distribution and Registration Server
- Central Database

It is recommended that MCO have more than one server. The dataflow would be limited, but the operations manifold.

3.2 List of equipment and standard software

Table 1

<i>Hardware</i>	<i>Quantity</i>
MCO equipment	
S.1: Domain Controller, File & DBC, Central Database, Domain and Registration Server	1
S.2: (Central) Database Distribution and Registration Server	1
S.3: Web Server	1
Personal Computer	15
Printer A4	4
Printer A3	1
Plotter	1
Switch	2
Firewall	2
UPS	3
Tape drive (Backup)	1
Router	1
Modem	1
RMO/ZMO (26) equipment	
Personal Computer	26
Printer	26
Modem/Router	26

Table 2

<i>Standard Software</i>	<i>Quantity</i>
MCO	
Windows Server 2000 English with 8 (3 servers + 12 clients) user licenses.	15
MS SQL Server 2000 Std. Ed. English with 8 (3 servers + 12 clients) user licenses.	15
Microsoft Internet Information Server	1
Microsoft Office 2000 Professional (3 servers + 12 clients)	15
Antivirus software (3 servers + 12 clients)	15
RMO/ZMO (26)	
Microsoft Windows2000	26
Microsoft Office 2000 Professional	26
Antivirus software	26

4. Detailed description

4.1 Hardware and network

Servers

The basic configuration for a server is:

- Windows Server 2000 English Internal CD 5 Client (for managing the 5 computers)
- ISA Server 2000 English Internal CD 1 Processor License (Firewall, Proxy)
- Antivirus – Active Virusscan Security Suite
- SQL Server 2000 Standard Edition English Internal CD 5 Client (for managing the 5 computers) – if SQL is chosen

The server is configured as a Domain Controller and File Server & Backup Domain Controller. In this server it should also be possible to handle the Central and Local Database Registration and Distribution Server functionalities.

Table 3

System, processors and architecture	Intel Pentium III 1.4 GHz/512KB L2 Cache, 133 Mhz front side bus Upgrade able to two CPU's 1 GB RAM (expandable) Integrated, dual-channel Ultra-160 SCSI controller
Components	40 GB SCSI Hard disk 48x CD ROM 3,5" disk drive Parallel port, serial port 2 USB ports IEEE-1394 Firewire Wheel mouse Keyboard 10/100 Mbps network card AGP Graphic card with minimum 8 Mb RAM, capable of handling minimum 85 Hz in 1024 x 768 in 16 M colours Chassis, Expansion Bays – 6, expansion slots – 6 Smart Array SA5i Plus for ML370 G2 (64Mb with BBWC) 20/40 GB DDS/44mm Internal SCSI Tape backup streamer
Security	Automated Server Restart (ASR), Alert on LAN 2, Wake on LAN, Boot Sequence control, Mechanical locks, Power on password, Privileged access password, unattended start up
Monitor	Compaq V570 MPRII/ SH 15" Colour Monitor – 2 tone (Compaq SVGA 15" Monitor)

Preinstalled software	Windows NT 2000 Server, Office 2000
UPS	Power protection UPS – APC Smart-UPS 2200 VA, Line Interactive, user repl. Batt., SmartBoost, SmartTrim, SmartSlot.
Warranty and service	Three-year, next-business-day, onsite limited warranty from authorized resellers, Free telephone support for basic set-up, installation, and troubleshooting

Central and Local Database Registration and Distribution Server – S.2

The server is configured as a Central and Local Database Registration and Distribution Server. This server type has the same specification as “4.1”, but with the following additional features:

Table 4

Components	2 x 40 GB SCSI Hard disks
Other software	MS SQL Server 2000 with licenses, MapX, Office 2000
Warranty and service	Optional 4-hour disaster response during standard business hours

Web Server – S.3

The server is configured as a Web Server. This server type has the same specification as 4.2, but with the following additional features:

Table 5

Components	2 x 40 GB SCSI Hard disk 2 x 100 Mbps network card
Other software	MS Internet Information Server (latest version)

Personal Computers

The PC configurations are made with the aim of being used for registration by staff, operators, system administrators, officers and clerk’s.

Table 6

System, processors and architecture	1,7 GHz Intel Pentium 4, 32 Kb internal L1 CPU cache, 256 Kb L2 cache, 400 MHz front side bus 128 MB RAM Intel 845 Chipset Ultra ATA/100 controller
Components	20 Gb Hard disk (enhanced IDE) 7200rpm 48x CD ROM 3,5” disk drive Parallel port, serial port 2 USB ports Wheel mouse

	Keyboard 100 Mbps network card AGP Graphic card with minimum 16 Mb RAM, ADI 1887 AC97 Audio card Chassis must minimum have one 5,25" and one 3,5" slot free
Monitor	Compaq V570 MPRII/ SH 15" Colour Monitor – 2 tone (Compaq SVGA 15" Monitor)
Preinstalled software	Windows 2000/XP
Other software	Office Professional/Publisher XP Win32 English, MapInfo Professional or MapInfo Runtime and Antivirus software
UPS	APC Back-UPS Multi Path 650VA Complete System (Optional)

Printers

Table 7

Printer	LaserJet double side printing, network connection, extra paper-tray
---------	---------------------------------------------------------------------

Plotter

Table 8

Plotter	HP 3000 Series A0 1200 dpi, network connection, extra memory
---------	--------------------------------------------------------------

Network

Table 9 LAN equipment

Switch	8 or 24 ports depending on the need, UTP cat-5 cables to network, USB port for direct connection
--------	--------------------------------------------------------------------------------------------------

WAN equipment

The connection to Internet must be a fixed line, connecting by using a router and/or modem with a bandwidth of 256 Kbps.

Table 10

Switch	8 ports, UTP cat-5 cables to network, USB port for direct connection
Firewall	Standalone firewall unit Supporting 3 zones, USB port for direct connection Filter, gateway and proxy functions Network and application level security Fail over option

4.2 Database

The basic software is listed in Chapter 2. Some application must be developed to fulfil the requirements of the proposed new organization of Mining Cadastre Office (see Report 7.2). The general processes are defined in this Report.

The database design defined in Report 3 (Inventory of Mineral Rights) is used for this purpose. The detailed description is not repeated in this Report. This Design should be completed through the link to the graphic software Mapinfo, and some adjustments and improvements are to be made in the proposals of the bidders for this Tender.

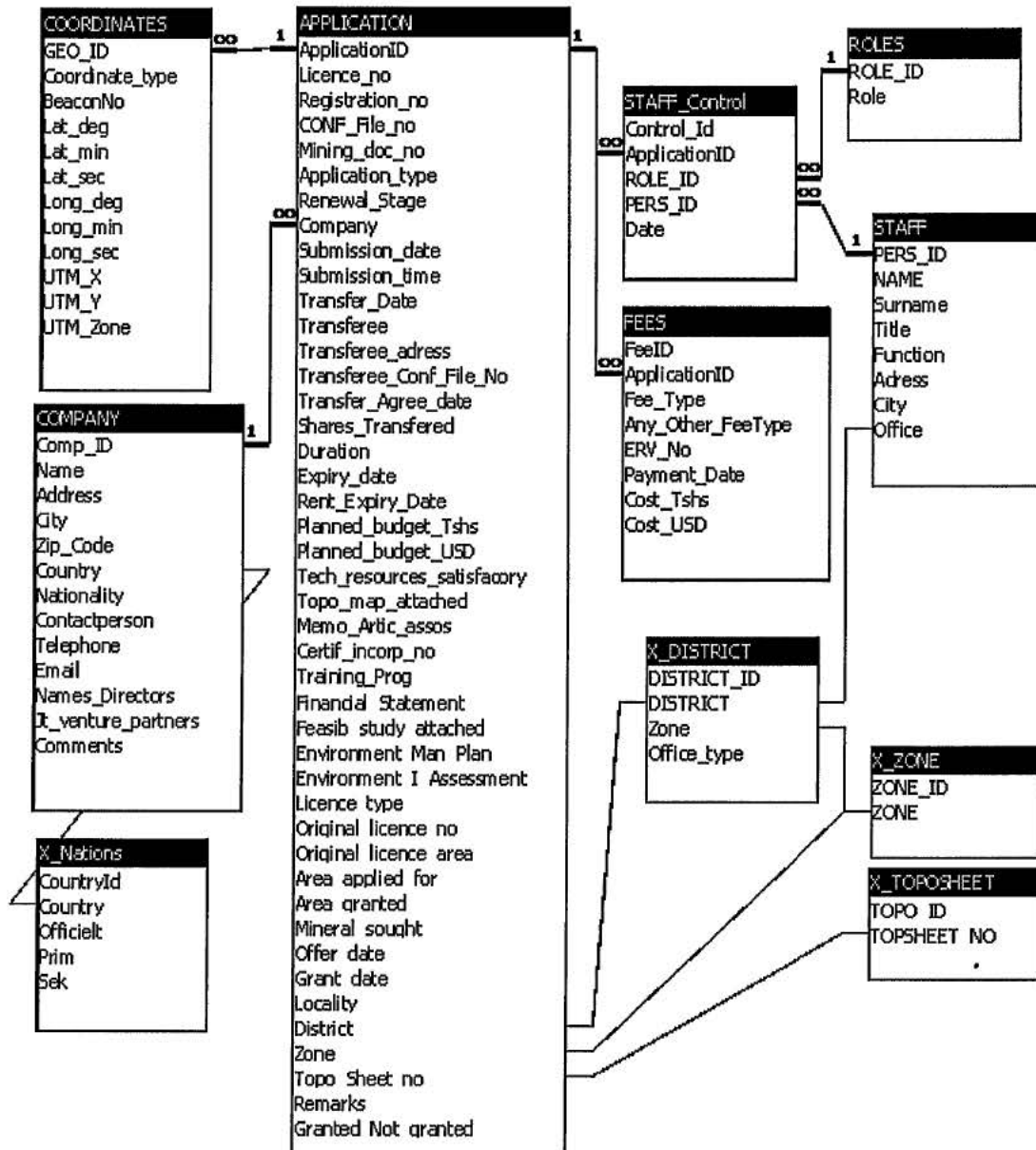


Figure 4: Database design

4.3 Functionalities

The functionalities must follow the defined processes in 7.2. The computer operations concern:

For PML/PPL applications the following procedure applies:

1. All applicants for a PML/PPL have to fill a standard "Application Form" in ZMO or MCO. The acceptability of the PML / PPL application is verified in the ZMO (nationality, completely filled form, eligibility) before registering the entry in the computer and delivering a receipt to the applicant.
2. The form and the co-ordinates are then entered in the online MCIMS by the ZMO in chronological order of registration of applications. After the technical control of the form data, ZMO uses MCIMS to check online the co-ordinates and verify that the area requested by the applicant is available.
3. If the area is partly of fully the computer (existing Licenses to be extracted) calculates unavailable, corrective co-ordinates. The new total area cannot exceed the total area of the application. A document is printed out with approved co-ordinates (as required if available or adjusted) to be delivered to and signed (approved) by the applicant. If the applicant will change the limits, he must apply again with new date, time and co-ordinates. ZMO can assist the applicant using MCIMS.
4. When the applicant signs the extract with co-ordinates, it is registered in MCIMS as an "approved by the applicant" application.
5. MCO is informed of the validity of the application and the Head of MCO controls (conflict of interest, eligibility), then confirms using MCIMS (final acceptance). ZMO is informed online. The final License is printed out in ZMO comprising the necessary information on the applicant, application, complete co-ordinates of the limits, information on existing Licenses included into the area.
6. The License is signed by ZMO Head of the office and delivered to the Applicant.

For PL /ML applications the following procedure applies:

1. All applicants for a Mineral Right have to fill in a standard "Application Form" in MCO. MCO fills in the Data Entry Form. The acceptability of the PL/ML application is verified in the MCO (all documents provided, completely filled form) before registering the entry in the computer and delivering a receipt to the applicant.
2. The form and the co-ordinates are then entered in the online MCIMS by the MCO in chronological order. After the technical control of the form data, MCO uses MCIMS to check the co-ordinates and verify that the area requested by the applicant is vacant.
3. If the area is partly of fully unavailable, corrective co-ordinates are proposed by the computer (existing Licenses to be extracted). The new total area cannot exceed the total area of the application. A document is printed out with approved co-ordinates (as required if available or adjusted)
4. The application is studied in accordance with the Act and Regulations, including payment of fees. If necessary, the Application Section may ask for an independent body to provide advise on environmental, safety or technical matters. The Application Section signs two copies of a checklist and proposes recommendations. The complete application with reports is going to the Head of MCO for decision.

5. The Head of MCO decides on the action (refused, accepted, additional information requested), signs the checklist documents and the application returns to the Application Section for processing.
6. If the application is accepted or refused, it is registered in the MCIMS. The resulting letter is printed out. The draft License is printed out with necessary information on the applicant, application, and complete co-ordinates of the limits, with co-ordinates of existing Licenses included into the area. A chronological License number is created.
7. In case of additional information request, the Application Section complete the information, inquiring the applicant if necessary.
8. The Head of MCO signs the documents produced by MCIMS with one signed checklist. The application is send to the Archive with the reference number of the License written on the heading page.
9. The applicant is informed to pay the fees and to collect his License.

Renewals, management of expiry and cancelling Licenses are following a process with the same principles. The MCIMS checks the dates of validity, informs MCO/ZMO in advance, update the graphic information if necessary.

MCO and ZMO are online using full resources of MCIMS for public service;

Reception and acceptance of Reports are registered in MCIMS.

Computerized functions:

- Entry of the application (ZMO for PPL, PML, MCO for ML, PL). Registration of the date and time. Production of a receipt.
- Entry and control of the application form. Control of the chronological order.
- Graphical control of the coordinates (ZMO or MCO). Control of chronological order. Checking whether the area is vacant. Calculation of new coordinates, production of a proposal for the applicant.
- Registration of the decision in MCIMS (refused, accepted). Updating the status of the area covered by the application.
- Printing letter to the applicant.
- Printing the License with complete coordinates.
- Registration of the License number.
- Permanent control of the dates of validity of License, printing status Report.

Other functionalities should be envisaged:

- Journal.
- Registration of transfer of holder of a License right
- Registration of fees.
- Cancelling a License, partly or fully and updating the status of the vacant land.
- Changes incurred in the original registered license.
- Discharge or termination of previous registered licensees' rights

Data Query

MCIMS should allow the users to quickly query the database for relevant information on licenses. The querying would be done in both The Journal and Mining Cadastre Database:

- Finding licenses and documents by License Number
- Finding licenses and documents by Address
- Finding licenses and documents by Journal Number
- Finding licenses and documents by Owner
- Finding licenses and documents by Co-ordinates
- Finding discharged licenses and documents in The Discharge Database by Discharge Number

All results of the query are printed using the Report Application.

Printing functions

- Journaling certificates
- Receipt of acceptance or refusal
- Registration certificates
- Certificate of refusal
- Certificate of registered rights
- Certificate of discharge and termination
- Statistics

All documents should be kept in a special archive and all information should be moved from The Journal and Mining Cadastre Database to The Discharge Database.

4.4 Other requirements

Communication

Vast problems with communication might hamper or impede any development and the District and Zonal Offices might be deprived of the present development trend in Tanzania. One way to solve the communication problems in Tanzania could be to adopt a direct line of communication between head and field offices by way of telephone lines or Radio communication. A HTML/ASP based user interface could then be adopted and field officers could report directly to the head office or even enter data directly in the database. The latter is not recommended at the present stage due to inadequate communication and registration procedures.

Security issues

The security of the system comprises:

- Access control (each user of the system should be registered and can only access the system by using username and password)
- Rights and restrictions for users (definition of rights and restriction for database users)
- System backups (database backups should be done daily and stored in a different place)

- Recovery procedures (description of procedures should be performed for database recovery after failure)
- Virus checking (software for virus checking, rules of use of internet and computers)
- Electric power supply (stable electric power supply, alternative power sources)
- Fire protection (fire alarm and automatic fire extinguisher system)
- Working place and server room physical security (access control and physical security for The RMO/ZMO and servers at MCO)

Security of MCIMS shall apply for servers, database, network, client workstations and registration system. No data entered shall be lost due to any system failure. All changes done by registration shall be tracked.

Database security

If database problems occur, the user should receive error messages sent by the application module. User should be prompted for further actions.

Only authorised users or MCIMS application programs shall be allowed to perform operations on the database. Users shall only be allowed to access database through stored procedures. Structured Query Language (SQL) shall be used for data manipulation. No other SQL applications, except applications designed for MCIMS, shall be used on the client workstations.

Computer security

Computer security shall include start-up password and power reset switch cover. Working places and server room should be physically safe.

Network security

The wide area network (WAN) of MCIMS between The RMO/ZMO and MCO will be part of the telecommunication company network and shall be protected by a firewall. A support agreement between MCO and the telecommunication company should be entered guaranteeing line connections, speed and traffic optimisation, virus protection, and response and repair time in case of WAN failure.

Even if the WAN connection breaks down, only part of the system functionality should be disabled. Some of the functionality of the system should remain so that the user can save work in a temporary log. If a network connection breaks down during saving of operation, all operations should be undone until last successful saving.

Availability and Maintenance

The registration system should be available 9 hours a day, 5 days a week while the distribution system should be available 24 hours a day, 7 days a week.

The system should be designed and developed to ease maintenance and to allow for further development and extensions to be incorporated. All MCIMS-specific data (like list of districts, etc.) should be stored as parameters, thus being modifiable without causing re-compilation or changes to the system.

The system shall include online help for all users. Users should not require the use of a hardcopy manual to use the system.

System response time is the ability to handle user activities:

- **Client workstation start-up time** depends on the configuration of the workstation, but should not exceed 5 minutes.
- **Log-on time** depends on network and server speed and duty, but it should not exceed 2 minutes.

**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

**DRAFT FINAL REPORT
October 12, 2002**

Institutional Capacity and Training Plan

Report 6

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LIST OF ABBREVIATIONS

LU	Licensing Unit
MCIMS	Mining Cadastre Information Management System
MCO	Mining Cadastre Office
MEM	Ministry of Energy and Minerals
MRI	Mineral Rights Inventory
Offices	RMO/ZMO and LU
OS	Operating System
Project	Consultancy for the Design of a Mining Cadastre Development Strategy
RMO	Resident Mines Office
TNA	Training Needs Assessment
TOR	Terms of Reference for NDF Project 277-2
TP	Training Program
ZMO	Zonal Mines Office

Executive Summary

1. The current organisation of the Mineral Division encompasses two sections, both headed by an Assistant Commissioner: (1) The Mines Section, encompassing the Sub-Sections, (i) Inspector of Mines; (ii) Co-ordination and Monitoring; (iii) Explosives, (iv) Environmental Management, and (v) the Zonal Mines Offices (ZMO) and the Resident Mines Offices (RMO). (2) Mineral Development Section encompassing the sub-sections: (i) Promotion and Statistics; (ii) Legal and Fiscal Affairs, and (iii) the Licensing and Registry Sub-Section (LU).
2. All sub-sections are involved in and have responsibilities in relation to the administration of the Mining Act and the Regulations. The Licensing and Registry Sub-Section is responsible for mineral rights applications and the Mining Cadastre. Moreover the Zonal Mines Offices and the Resident Mines Offices are undertaking local LU duties.
3. The current organisation appears not to favour an effective administration of the Mining Cadastre functions. Moreover the LU is not staffed adequately with respect to numbers and qualifications.
4. It is recommended to establish a Mining Cadastre Office (MCO) under the Permanent Secretary, MEM, ensuring an independent and efficient organisation, encompassing the following offices: (1) Registry, (2) License application processing; (3) Mineral Rights administration; (4) Archive; (5) Information; (6) MRI and MCIMS; and ZMO/RMO Mining Cadastre administration.
5. The staff involved in Mining Cadastre applications and administrations are in general not adequately trained with regard to basic computer skills, databases and data validation, GIS applications, and basic administrative procedures for a Mining Cadastre Office.
6. Training programs for the following topics are given: Basic Computer Training; MS Access and MRI; MapInfo; Mining Cadastre Office procedures and routines; Working principles of the MCIMS, and Basic Management. The numbers and levels of the courses are estimated on the basis of the current staff, inclusive the ZMO/RMO staff.
7. Planning of the training courses should consider the timing of the implementation of the Verification Plan, ensuring that the key staffs to be involved in this phase are provided the necessary skills prior to the implementation of the project.
8. Study tours are recommended to supporting the task force writing the Mining Act B with the necessary background information and to facilitate valuable discussions with sister organisations about some of the new principles being the basis for the new mining legislation. In order to gain experience from both the "old" type of mining legislation and from the modern system, it is recommended to arrange two study tours: (a) Visit to Ghana and (2) visit to either Australia or Madagascar.

1. Introductory Notes

Report 6 details the subtasks set out in Task 6 of the Terms of Reference. The report provides an assessment of the current institutional capacity of MD, and on this basis a training programme is developed. The training programme considers the timing of the implementation of the overall Mining Cadastre Strategy as well as to propose cost efficient courses.

2. Assessment of the Institutional Capacity

This Chapter presents an overview of the institutional organisation of the Mineral Division of MEM. The assessment of the institutional capacity relates exclusively to the capacity of the parts of this Division directly involved in the management of the Mining Cadastre. A more comprehensive institutional assessment study is required in order to come up with detailed restructuring of the entire Mineral Division.

2.1 Organisation of the Mineral Division of MEM

The Table 1 provides a simplified structure of organisation of the Mineral Division of the Ministry of Energy and Minerals (MEM), based on a diagram provided by MEM.

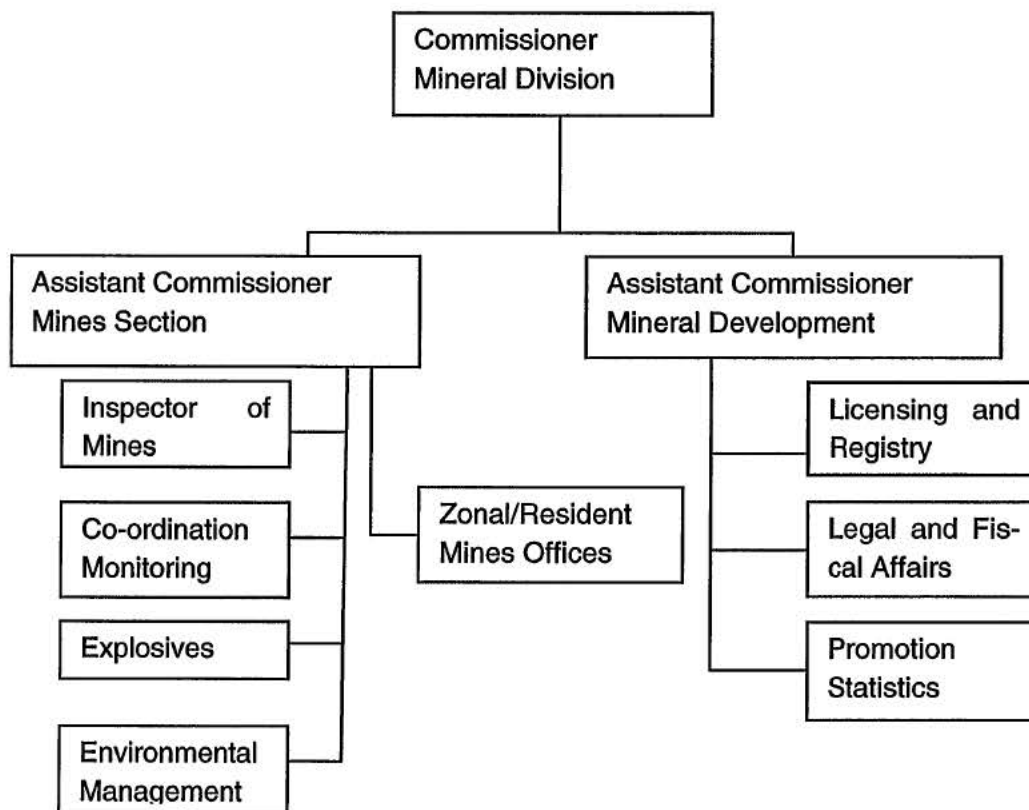


Figure 1. *Mineral Division of the Ministry of Energy and Minerals*

The Mines Section encompasses the following sub-sections:

- Inspector of Mines Sub-Section. Not directly involved in the Mining Cadastre.
- Explosives Sub-Section. Not directly involved in the Mining Cadastre.
- The Environmental Management Sub-Section. Not directly involved in the Mining Cadastre, though may be involved in assessing mineral rights applications with regard to environment assessments and involved in assessing EIA and EMP.

- The Co-ordination / Monitoring Sub-Section is in charge of the supervision of the implementation of guidance /decisions in ZMOs and RMOs, but not directly involved in the Mining Cadastre.
- The Zonal Mines Offices including the Resident Mines Offices, are involved in both the application processes for Mineral Rights and for parts of the administration and follow-up with respect to the Mining Cadastre.

The Mineral Development Section:

- Licensing and Registry Sub-Section (LU) is responsible for registration and administration of mineral rights. These duties are undertaken in co-operation with ZMO/RMO, though the latter are not part of the Mineral Development Section.
- Promotion and Statistics Sub-Section is not directly involved in the Mining Cadastre, although it has an important role to play for the implementation of the Mineral Policy.
- Legal and Fiscal Affairs is not directly involved in the Mining Cadastre.

It appears that the justification of splitting the Mineral Division in two sections is to keep technical matters from administrative matters. Concerning the impact of this administrative structure with respect to the operation of a Mining Cadastre.

The ZMO/RMOs are partly working as local LU-offices and shall obey to standards and rules edited and applied by the LU. The absence of a line of command between the LU and the ZMO/RMOs, complicates the necessary priorities of work and flow of communication between the two bodies. Moreover, it appears necessary to have environmental and mining expertise (Inspector of Mine) expertise "in-house" in a mining cadastre office, to undertake preliminary screening of which license needs further and detailed environmental assessments, and for follow-up on technical issues related to applications.

This report focus on the assessments and capacities and training needs for the subsections involved in Mining Cadastre.

Some aspects to be studied further improving the efficiency of the LU, is outlined below:

The registration function, including the application processes, is not separated from the follow-up of the Licenses, i.e. the more technical tasks like inspection, reporting, and project development. An option could be to separate the administrative function of processing applications and registration in a Mining Cadastre Office (MCO) undertaking registration, applications and archive functions, and another function (Technical Mining Unit) with the responsibilities of the follow-up and control of activities (Mine Inspection, Environment, Fiscal tasks, and Promotion). Moreover it should be considered to divide the tasks of ZMO/RMO into operational tasks (Mine Inspection) and administrative (applications and coordination). If the line of command is within in the same unit, it is more straight forward to define the administrative instructions. In addition the responsibilities of the Promotion and Statistics Sub-Section should be separated, encompassing public campaign and information to the public, in one group; statistics in one group. The geological information should be considered to be the responsibilities of the Tanzania Geological Survey, which would be in good accordance with the current act.

The concept of establishing a Mining Cadastre Office (MCO) is developed further in Report 7.2. In summary, the tasks related to a Mining Cadastre Office could be arranged along the lines set out in Figure 2.

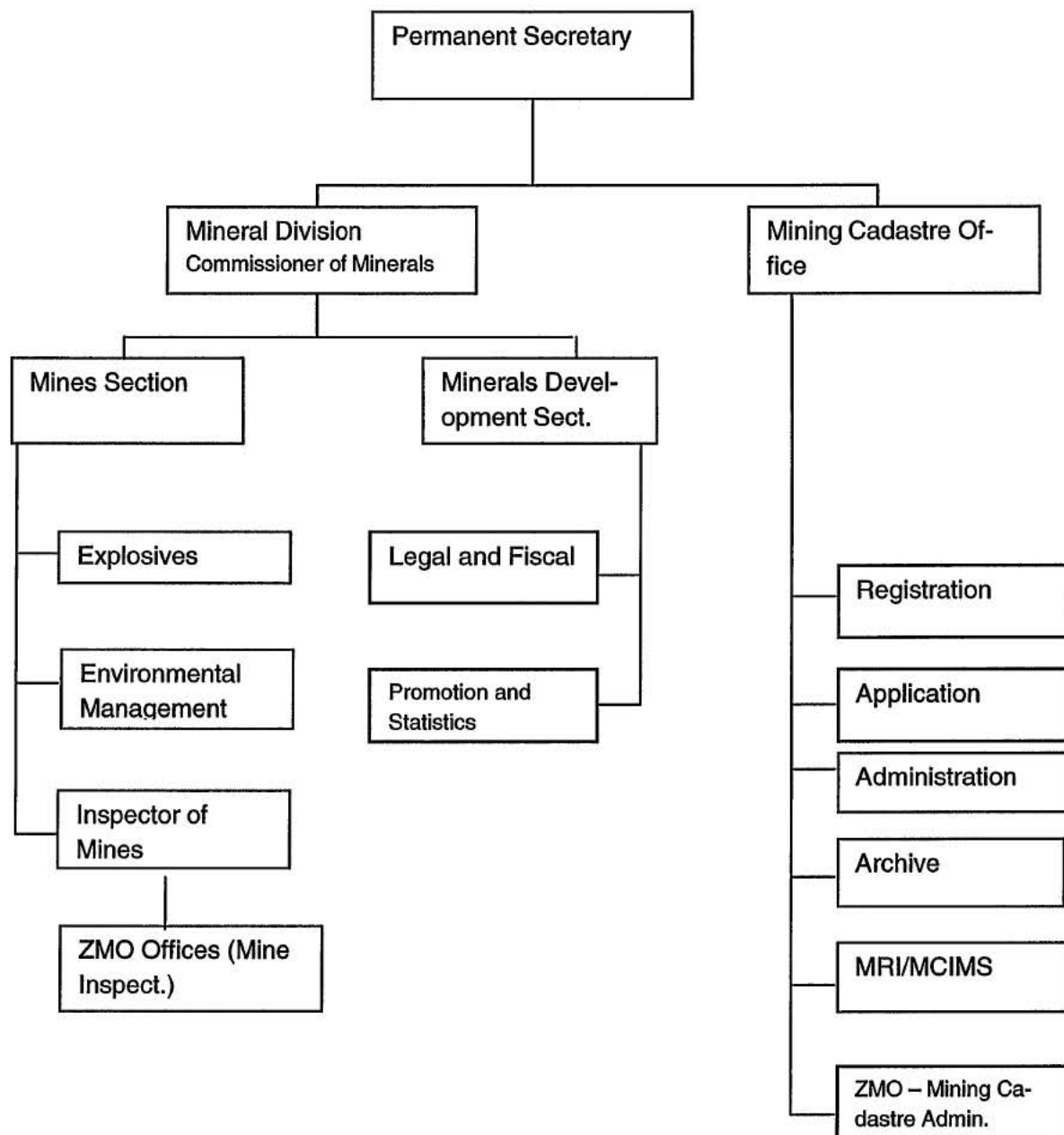


Figure 2. *Proposed Structure of the Mineral Division*

The Mining Cadastre Office should be structured as follows:

- Registry;
- Applications processing;
- License administration
- Archive
- Information to the public;

- MRI/MCIMS;
- ZMO/RMO Mining cadastre administration

This induces that additional qualified staff should be recruited, and a comprehensive training plan implemented.

The aim of the proposed organisation is to overcome two mutually conflicting principles: (i) Ensuring that all necessary skills and qualifications are available to LU for undertaking their duties with regard mineral rights applications and administration of the Mining Act, (ii) to ensure that LU is an independent body, undertaking only tasks strictly related to Mineral Cadastre. Consequently other independent bodies should deal with all aspects related to mineral environmental management and mining safety. It appears to the Consultant that the current set-up is not adequately designed to appreciate both these principles.

2.2 Staff Capacity in the Minerals Division

The staff capacity in the Minerals Division totals 30 persons, encompassing 20 in the Minerals Development Section and 10 in the Mines Section. The specialisation and capacities in the Sub-Sections are given in Table 1. It is obvious from the Table 1 - as well as observed by the Consultant - that the Heads of Sub-Sections are mainly involved with the specific activities being the responsibilities of the Sub-Section; the management tasks of the Sub-Section are only taking up a minor part of the time due to the heavy load of work on all staff members. Moreover, we understand that none of the heads have attended basic management training courses – except one who is a MBA graduate.

On this background, it is recommended – even in the short-term program - to offer a two-string training package to the group of Head of Sub-Section, (i) Training for professionals and (ii) Training for managers, for upgrading both types of required skills.

Table 1. Staff Capacity in the Minerals Division

Commissioner's Office		
Staff (Title/Designation)	Profession	Capacity
Commissioner for Minerals	Geologist	1
Personal Secretary	Secretarial skills	1
Secretary	Secretarial skills	1
Office attendant	Secretarial skills	1
Minerals Development Section		
Staff (Title/Designation)	Profession	Capacity
Assistant Commissioner	Geophysicist	1
Licensing and Mineral Rights Sub-Section		
Head, Licensing and Mineral Rights	Geologist	1
Geologist Mineral Rights Registry	Geologist/Mineral economist	1

Geologist Licensing Technicians	Geologist Technicians	1 7
Legal and Fiscal Affairs Sub-Section Head, Legal and Fiscal Affairs State Attorney	Geologist/Business Administrator Lawyer	1 1
Promotion and Statistics Sub-Section Head, Promotion and Statistics Geologist – Promotion and Market Geologist – Statistics and Records	Geologist Geologist/Gemologist Geologist/Engineer	1 1 1

Mines Section

Staff (Title/Designation)	Profession	Capacity
Assistant Commissioner – Mines	Mining Engineer	1
Inspectorate of Mines Sub-section Chief Inspector Mining Engineer - Inspection	Mining Engineer Mining Engineer	1 1
Co-ordination and extension Services Sub-Section Head, Co-ordination and extension Services Mining Engineer Geologist	Mining Engineer Mining Engineer Geologist	1 1 1

2.3 Work constraints due to lack of training

It is clear that the majority of the personnel of the Licensing Unit are very concerned by the responsibility they have in providing an efficient service to the customer and by the importance of their work for the MEM as well as for the development of the country. They face however the following problems with regard to training:

- Training activities are not undertaken on a routine basis due to the scarce resources, and new recruited employees are trained on-the-job only. This creates a depreciation of the quality of the work by absence of organised transfer of instruction in absence of overlap between resigning and newly recruited or appointed employees;
- It is difficult to recruit new personnel possessing the adequate training background for supporting the fast increasing activity of the LU. This causes work overloads and delays.

It is assumed that the number of employees will not increase in accordance with the fast growing development of the mining activities in the coming years. Moreover it is assumed that the organisation will experience problems in replacing employees and thus it is impos-

sible to ensure organised transfer of knowledge from the leaving to the newly appointed staff.

Under these prevailing conditions, the solutions can be to:

- Develop Training Program considering both long term and short term requirements.
- Develop clear written instructions / operation manuals to be dispatched both existing and new employees;
- Simplify the procedures for administration of the Mining Act – based on an amended Mining Act – enabling an efficient administration and fast procedures and ensuring that all requirements are fulfilled;
- Equip the Mining Cadastre Office with the adequate equipment, such as computers, printers, photocopiers, Internet, and archives; and
- To implement a state of the art MCIMS.

3. Training Plan

3.1 Objective

A clear need to strengthen the capabilities of the organisation has been identified during the Project. Thus it has been observed that training in general administrative principles and training in computer skills as well as more specifically training in Mining Cadastre administration is urgently needed.

The main objective of the proposed Training Plan is assure an efficient organisation possessing the adequate qualifications for running all aspects with regard to a Mining Cadastre Office. The Training Plan considers both the immediate and short term demands as well as more long term requirements.

3.2 Assessment of the Training Needs

It is anticipated that the employees at MEM, ZMO and RMO currently involved in administration of the Mining Act and Regulations will also be the core staff involved in the future Mining Cadastre Office and the MCIMS. This group is with regard to training background and skill very diverse. Moreover the a great number of the employees are specialised to undertake special functions in the administration of the Act, and consequently overall know-how about the administrative procedures and routines are very diverse.

The methodology behind the (TNA) is based on self-reliant training programme enabling the trainee to manage MCIMS organised around the following stages:

1. The role of MEM in the training process
2. Selection of trainees for the TNA and breakdown of employees into groups of similar nature
3. Description of goals and activities
4. Analysis of strengths and weaknesses in relation to fulfilling the above roles. Summarised in a diagram to be used in assessing areas of training need.

3.2.1 The Role of MEM in the Training Process

With respect to the Training Program it is the responsibility of MEM select the employees from all relevant sections and sub-sections, inclusive ZMO/RMO, for the relevant training courses. The Training Program shall encompass both the immediate needs but should also consider a long-term capacity building.

3.2.2 Selection and Grouping of Trainees

The training needs are specific for the individual groups of staff and training programs should be designed considering both training background, skills and needs for the specific group.

In order to ensure a robust set-up and managerial flexibility it is recommended to train a broad part of the employees, employed in both the Mine Section and the Mineral Development Section.

For the short-term training the numbers of participants for the courses are based on the current staff capacity in the Minerals Division. However, it appears that secretary functions are currently supported only by the secretaries allocated to the Commissioner for Minerals. It is however recommended that potential secretaries allocated to the proposed Mining Cadastre Office be trained accordingly with Table 6.

The functions of the Zonal Mines Officers and Resident Mines Officers combine both management and professional skills, and therefore such staff is grouped with the Head of Sub-Sections.

The technicians involved possess highly diversified skills, training background and duties. It is recommended to establish a Training Program for the level of technicians. In the event a technician undertakes tasks similar to the professionals, it should be considered to group such a technician with the professionals.

It is important to provide basic training also to the group of secretaries to ensure that the concept of the MCIMS is appreciated throughout in the organisation and also to provide specific skills to undertake their duties.

Table 2. Proposed courses and numbers of participants for training courses for Assistant Commissioners and Heads of Sub-Sections

		Basic Management	Basic Computer Training	Access and MRI	MapInfo	MCO administration principles	MCIMS
		BM 1	BCT 1	DB 1	MI 1	MCO 1	MCIMS 1
Mineral Development Section	Assist. Comm.	1				1	1
	Head LU	1		1	1	1	1
	Head Legal and Fiscal	1		1		1	1
	Head Prom. & Stat.	1		1		1	1
Mines Section	Assist. Comm.	1				1	
	Inspect. Mines	1		1		1	
	Head Co-ordination	1		1		1	
	Head Explosives	1		1		1	
	Head Environmental	1		1		1	

	ZMO	8		8	8	8	8
	RMO	14		14	14	14	14
	Total	31	Not known	29	23	31	26

Table 3. Proposed courses and numbers of participants for training courses for professionals (exclusive the Head of Sub-Section).

		Basic Management	Basic Computer Training	Access and MRI	MapInfo	MCO administration principles	MCIMS
		BM 1	BST 1	DB 2	MI 2	MCO 2	MCIMS 2
Mineral Development Section	Licensing Unit	-	?	2	2	2	2
	Legal & Fiscal	-	?	-	-	1	1
	Promotion & Statistics	-	?	2	-	2	2
Mines Section	Inspection of Mines	-	?	1	-	-	-
	Co-ordination	-	?	2	-	-	-
	Explosives	-	?	1	-	-	-
	Environ. Management	-	?	1	-	-	-
	ZMO	-	?	5	5	5	5
	RMO	-	?	5	5	5	5
	Total	-	Not known	19	12	15	15

Table 4. Proposed training courses for secretaries

		Basic Management	Basic Computer Training	Access and MRI	MapInfo	MCO administration principles	MCIMS
		BM 1	BCT 1	DB 3	MI 3	MCO 3	MCIMS 3
Mineral Development Section	Licensing Unit		√			√	
	Legal & Fiscal		√			√	
	Promotion & Statistics		√			√	
Mines Section	Inspection of Mines		√			√	
	Co-ordination		√			√	
	Explosives		√			√	
	Environ. Management		√			√	
	ZMO		√			√	
	RMO		√			√	
	Total		Not known			Not known	

4. Training Program

4.1 Goals and Activities

For designing the appropriate Training Plan it is essential to focus on strengths and weaknesses in relation to the ability to operate a MRI/MCIMS.

The overall goal is to train the staff involved in administration of the Mining Act the appropriate know-how to undertake the duties in compliance with the best international standards.

The Training Programme, aimed for the Verification Plan Special Task force - should be completed prior to the initiation of the Verification Plan.

The Training Program should be detailed according to (i) a needs-based approach as well as (ii) a systematic approach with regard to planning, co-ordination, implementation and evaluation of the training (detailed in Chapter 3, Implementation, and in Report 7.2 Implementation of a Mining Cadastre Strategy).

The Training Program should be tailor made to provide specific skills to the four different groups of staff Managers, Professionals, Technicians, and Secretaries/Clerks. In addition to these groups it is recommended to select about ten individuals from the level of Professionals and Technicians, for further specialist – super user – training. The aim of ‘super-users’ is to ensure the in-house special knowledge for solving immediate problems and to undertake in-house training of new staff. Moreover the ‘super-users’ shall be trained to undertake maintenance of the MCIMS and the MRI. The super-user candidates may be selected during the training program.

The training courses outlined below are considered to be part of the short-term capacity building program. A long-term – on-the-job-training - should be considered as well.

4.2 The Training Courses

The design of the Training Programme should specifically take into account the following topics, which should be levelled according to each of the four groups of staff:

- The role and responsibilities of the Mining Cadastre Office (MCO)
- General Mining Cadastre procedures and routines
- General working principles of the MRI and MCIMS
- Upgrading computer skills (MS Word; MS Access; MS Excel; MapInfo)
- Procedures and routines for liaising between MCO and government stakeholders
- MCO as a service provider.

As a consequence the following courses are recommended:

1. Basic Computer Training
2. MS Access and MRI
3. MapInfo
4. Mining Cadastre Office Management – procedures and routines
5. General working principles of the MCIMS
6. Basic Management

Basic Computer Training

The Basic Computer Training Course is aiming at providing knowledge in Windows and Microsoft Office. It is recommended that all MCO staff from managers to secretaries should have qualifications not less than this. Participants attending the MCIMS courses should have qualifications equivalent to this course.

MS Access and MRI

The Access and Mineral Rights Inventory Course is aiming at giving the participants the basic understanding of the principles and functionalities in the MS Access being the fundamentals for the Mineral Rights Inventory, and hence to train the use of MRI such as data-registration, back-up, data validation and out-put.

MapInfo

The MapInfo Training Course provides the basic functionalities MapInfo, the specific functionalities in relation to MCIMS and MRI, checking of overlaps and out-put.

General working principles of the MCIMS

The MCIMS Training Course shall provide the participants the overall understanding of the MCIMS, and shall enable the participant to operate the various parts of the system. The training shall encompass such elements as the operator duties, data safety, querying and report generation.

Mining Cadastre Office Management – procedures and routines

The Mining Cadastre Office Management Course shall enable the participants to achieve an overall understanding of the procedures and the routines to be applied in a modern mining cadastre system, by providing the basic principles of the Mining Act and the Regulations, the routines and procedures to be followed from registration of the application, granting of mineral right to the follow-up routines on licenses. Moreover the Course shall enable the participants to undertake all procedures involved in registration of applications, payment of fees, filing of confidential material, correspondence with clients and stakeholders, and general clients service.

Basic Management Course

It is recommended to train all Head of Sub-Sections in basic management, encompassing such elements as budgeting and planning of work, follow-up procedures, coaching and motivation.

Study Tours

With the aim to gain a comprehensive understanding of the pros and cons of some of the “modern” mining acts and mining cadastre management, it is strongly recommended to

undertake a study tour to a couple of sister organisations. It is recommended to undertake a study tour to either Australia or Madagascar, each of them representing new principles for the mineral legislation.

Australia: Has a modern mining cadastre system based on a decentralised system. The organisational set-up puts customer service and efficiency in focus.

Madagascar: A new Mining Act was enacted in 1999 and the Regulations implemented in 2000. The legal framework represents very liberal principles, such as: (1) No requirement to demonstrate technical or financial capability to qualify for a grant; (2) Licenses are freely transferable, mortgageable and may be inherited; (3) Applicant for a mining license is not required to demonstrate commercially exploitable minerals; (4) No minimum work or investment requirement; (5) Escalating area fees; and (6) Unisized grid system for all license areas.

It is moreover recommended to include a visit to Ghana for the following reasons:

Ghana: The mining industry in Ghana has been booming over the past about twenty years – notwithstanding that the legal framework represents some of the principles now a days regarded outdated. Ghana has a vast small-scale mining industry.

Ghana is in the process of renewing the current Mining Act implemented in 1986. A visit to Ghana could provide useful information and ideas about the principles of the new legal framework for the minerals industry and about the possible implementation strategy.

Participants for the study tour should comprise, but not be limited to the task force recommended for writing the Mining Act B and the Regulations B and the external consultant.

4.2.1 Organisation of the Courses

Based on the Table 4, 5 and 6 it is assessed that the capacity training should be organised as 11 different courses training the six topics, as detailed in Table 7. The Programmes are detailed in Report 6 Annex A.

Table 5. *Overview of the training courses and levels*

Course	Content	Participant
BCT 1	Basic Computer Training	Only one level for all participants
DB 1	MS Access and MRI	Managers/Head of Sub-Section Professionals
DB 2	MS Access and MRI	Technicians
MI 1	MapInfo	Managers/Head of Sub-Section
MI 2	MapInfo	Professionals

		Technicians
MCIMS 1	Mining Cadastre Information Management System	Managers/ Head of Sub-Section
MCIMS 2	Mining Cadastre Information Management System	Professionals Technicians
MCO 1	Mining Cadastre Office – working principles and routines	Managers/Head of Sub-Section
MCO 2	Mining Cadastre Office – working principles and routines	Professionals Technicians
MCO3	Mining Cadastre Office – working principles and routines	Secretaries
BM 1	Basic Management	Managers/Heads of Sub-Section

It is necessary to decide at a later stage, when the accurate number of trainees is defined, how to many times the actual course should be held to cope with the numbers of participants.

5. Time Estimates and Implementation

On the basis of Chapter 4, the total days for courses are calculated, and detailed in table 8.

Table 6. *Calculations of days for the proposed training program*

Course	Participants	Estim. Courses	Unit days	Total days
BST 1	30	3	6	18
DB1	30	3	3	9
DB 2	20	2	6	12
MI 1	23	2	1	2
MI 2	12	2	6	12
MCIMS 1	26	3	3	9
MCIMS 2	15	2	6	12
MCO 1	30	3	2	6
MCO 2	15	2	4	8
MCO 3	10	1	3	3
BM 1	30	3	6	18
Total days				109

The courses MCIMS and MCO are not of-the-shelf courses since each course must be related to MCIMS and mining cadastre related experiences in Tanzania, wherefore the cost is expected to be high.

Planning of the training courses should consider the timing of the implementation of the Verification Plan, ensuring that the key staffs to be involved in this phase are provided all the necessary skills in advance of the project. Training the key staff for the Verification Plan should therefore be organised as a pilot training course, enabling adjustments of the training plan components.

A timetable for the implementation of the training courses are provided in Report 7.2, Chapter 3.

6. Qualifications of the Training Course Provider

The Trainer Course Provide must posses the following qualifications,

- Experience with Training in Developing countries
- Management of Training in a large content
- Experience in the development of MCIMS
- Experience in Access and thus knowledgeable in Mineral Rights Inventory
- Experience in GIS and specialised knowledge in MapInfo
- Experience in Computer Skills

7. Recommendations

A systematic approach to training planning and implementation is required in order not to waste valuable time, efforts and money in the implementation of the training.

The Project should emphasise the 'duty' of dissemination for the participants, once they have participated in one of the courses in order to increase the effect of the training.

It is recommended to arrange a workshop for the identified ZMO, RMO and MEM officers or representatives, where the participants in a participatory manner conduct a self-assessment of qualifications and training records and also an assessment of own training needs (make use of problem analysis and working group sessions). Based upon analysis of the self-assessments and the needs related to manage a MCIMS a revised training need assessment could form the basis for a revised training plan if needed.

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Training Courses

Report 6, Annex A

Introduction

This Report 6 Appendix detail of the training courses proposed in Report 6. All training courses are anticipated to take place in Dar es Salaam and to be provided by an external consultant. The numbers of trainees for each course is based on Report 6, table 2, 3 and 4. The time schedule for the implementation is further dealt with in Report 7.2.

Overview of the training courses and levels

Course	Topic to be trained	Group of Participants	Details on page
BCT 1	Basic Computer Training	Only one level for all participants	3
DB 1	MS Access and MRI	Managers/Head of Sub-Section Professionals	4
DB 2	MS Access and MRI	Technicians	4
MI 1	MapInfo	Managers/Head of Sub-Section	5
MI 2	MapInfo	Professionals Technicians	5
MCIMS 1	Mining Cadastre Information Management System	Managers/ Head of Sub-Section	6
MCIMS 2	Mining Cadastre Information Management System	Professionals Technicians	6
MCO 1	Mining Cadastre Office – working principles and routines	Managers/Head of Sub-Section	7
MCO 2	Mining Cadastre Office – working principles and routines	Professionals Technicians	7
MCO 3	Mining Cadastre Office – working principles and routines	Secretaries	8
BM 1	Basic Management	Managers/Heads of Sub-Section	9

Course BCT1

<p>Course/Workshop Basic Computer Training</p>	<p>Trainer Consultant</p>	<p>Duration 2 x 3 days Ongoing</p>
<p>Objective /Course Outline To provide the participants with basic computer skills</p> <ul style="list-style-type: none"> • Windows functions • MS Word and Excel • Internet • E-mail • Basic understanding of OS <p>Methodology Hands On</p>	<p>Who to be trained Standard course for all MCO staff involved with administration of the Mining Act.</p> <p>Skills at this level are considered necessary in order to attend any of the other courses.</p> <p>Participants not identified – but anticipated in the range of 30.</p>	<p>Priority High</p>

Course DB 1

Course Access and MRI	Trainer Consultant	Duration 3 days
Objective /Course Outline To familiarise the participants with Access to be used in MCIMS and to understand the MRI concept <ul style="list-style-type: none"> • Basic functions of Access • Basic functions of MRI • Functionality of the MCIMS • Validation of data Methodology Introduction, discussion, exercises, cases, hands on	Who to be trained Managers and Head of Sections Professionals Number of participants C. 30	Priority High

Course DB 2

Course Access and MRI	Trainer Consultant	Duration 2 x 3 days
Objective /Course Outline To familiarise the participants with Access to be used in MCIMS and to understand the MRI concept <ul style="list-style-type: none"> • Basic functions of Access • Basic functions of MRI • Functionality of the MCIMS • Validation of data Methodology Introduction, discussion, exercises, cases, hands on	Who to be trained Technicians Number of participants C. 20	Priority High

Course MI 1

Course MapInfo	Trainer Consultant	Duration 1 days
Objective /Course Outline To familiarise the participants with GIS and MapInfo and to be able to verify license areas in MRI <ul style="list-style-type: none"> • Basic functionality's in Map-Info • Transparent registration • Specific functionality's related to MCIMS • Verification of areas • Analysis • Printing Methodology Introduction, discussion, exercises, cases, hands on	Who to be trained Managers and Heads of Sub-Sections Number of participants C. 23	Priority High

Course MI 2

Course MapInfo	Trainer Consultant	Duration 2 x 3 days
Objective /Course Outline To familiarise the participants with GIS and MapInfo and to be able to verify license areas in MRI <ul style="list-style-type: none"> • Basic functions in MapInfo • Specific functions related to MCIMS • Verification of areas • Analysis • Printing Methodology Introduction, discussion, exercises, cases, hands on	Who to be trained Professionals and Technicians Number of participants C. 12	Priority High

Course MCIMS 1

Course General working principles of the MCIMS	Trainer Consultant	Duration 3 days
Objective /Course Outline To enable the participants to work with and understand MCIMS <ul style="list-style-type: none"> • Overall system understanding and security • Transparent registration • Querying • Report generation • Validation of data and the use of forms • Duties of the operator • Communication with ZMO/RMO and stakeholders Methodology Introduction, discussion, exercises, cases, hands on	Who to be trained Managers and Head of Sub-Sections Number of participants C. 26	Priority High

Course MCIMS 2

Course General working principles of the MCIMS	Trainer Consultant	Duration 2 x 3 days
Objective /Course Outline To enable the participants to work with and understand MCIMS <ul style="list-style-type: none"> • Overall system understanding and security • Transparent registration • Querying • Report generation • Validation of data and the use of forms • Duties of the operator • Communication with ZMO/RMO and stakeholders Methodology Introduction, discussion, exercises, cases, hands on	Who to be trained Professionals and Technicians Number of participants C. 15	Priority High

Course MCO 1

Course Mining Cadastre Office Management	Trainer Consultant	Duration 2 days
Objective /Course Outline To provide the participants an understanding of <ul style="list-style-type: none"> • International MCO practice • Role and duties of the MCO • Administration - principles • Stakeholder interfaces • Monitoring and evaluation Methodology Introduction, discussion, action planning, follow up, case studies	Who to be trained Managers and Head of Sub-Sections Number of participants C. 30	Priority Medium

Course MCO 2

Course Mining Cadastre Office Management	Trainer Consultant	Duration 4 days
Objective /Course Outline To provide the participants an understanding of <ul style="list-style-type: none"> • International MCO practice • Role and duties of the MCO • Administration - principles • Stakeholder interfaces • Monitoring and evaluation • Contact to Clients • Follow-procedures • Validation of data Methodology Introduction, discussion, action planning, follow up, case studies	Who to be trained Professionals and Technicians Number of participants C. 15	Priority High

Course MCO 3

Course Mining Cadastre Office Management	Trainer Consultant	Duration 3 days
Objective /Course Outline To provide the participants an understanding of <ul style="list-style-type: none"> • International MCO practice • Role and duties of the MCO • Administration - principles • Stakeholder interfaces • Monitoring and evaluation Methodology Introduction, discussion, action planning, follow up, case studies	Who to be trained Secretaries Number of participants Not identified	Priority High

Course BM 1

Course Basic Management	Trainer Consultant	Duration 2 x 3 days
Objective /Course Outline To provide the participants an understanding of <ul style="list-style-type: none"> • • • • Methodology Introduction, discussion, action planning, follow up, case studies	Who to be trained Managers and Head of Sub-Sections Number of participants C. 30	Priority Medium

**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

**DRAFT FINAL REPORT
October 12, 2002**

**Three Alternative
Mining Cadastre Development Strategies**

Report 7.1

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List of Abbreviations

MCDS:	Mining Cadastre Development Strategy
MCIMS:	Mining Cadastre Information Management System
MEM:	Ministry of Energy and Minerals
RMO:	Resident Mines Office
SEAMIC:	Southern and Eastern African Mineral Centre
TOR:	Terms of Reference – the NDF 277-2 Project
UTM:	Universal Transverse Mercator Projection, 36 th Zone South
ZMO:	Zonal Mines Office

Executive Summary

- 1) The long term goals for the mineral and mining industry in Tanzania are given by the Mineral Policy (1997), stating that, (i) the industry shall contribute in excess of ten per cent of the GDP; and (ii) the development of the legal, regulatory, fiscal and institutional environment for investments should be kept in focus.
- 2) The key principles dominating the international mining act reforms are such as: open mining cadastre an title registry; mineral rights granted on objective criteria; first-come-first-served basis; exclusive title rights; security of the tenure; free transferability of mineral rights; simple financial maintenance requirements; and environmental protection adapted to the various phases of a project. Only some of these principles are considered in the Mining Act, 1998.
- 3) The findings from assessment of Task 1 – 6 form the basis for the strategies. It is observed that:
 - a) The legal framework possesses some weakness, giving raise to ambiguous interpretations and individual practises.
 - b) The administrative set-up has some weaknesses and the resources and equipment allocated are inadequate.
 - c) The current Mineral Rights Inventory is not complete and contains errors; moreover some licenses are overlapping.
 - d) Training and capacity building is urgently needed.
- 4) The three strategies are all based on the following components, (1) Changes of the legal framework; (2) Reorganisation administrative practice; (3) Introduction of an open MCIMS system; (4) Resource requirements; and (5) A capacity building and training program.
- 5) The legal framework is the hub of any mining cadastre strategy. Three options with are discussed: Model A: Amendments of the current act – adding missing and incomplete information. Model B: Simplification of the current act – and introducing modern mining act principles. Model C: Formulation of a new mining act, considering the implementation of liberal free market principles (e.g. Peru; Madagascar).
- 6) All strategies are leading to the goals for the mineral sector set out in the Mineral Policy, but the changes of the legal framework determines the type of strategy and the additional components are setting the speed.
- 7) It is anticipated that the implementation times for Strategy A, B and C are respectively two years, three years and five years.
- 8) The Consultant recommends the Strategy Model B as the most appropriate. Strategy Model A carries the risk to be called for a second round of amendments within a few years time. Strategy Model C involves a very liberal mining act, which is conflicting with the general administrative approach in Tanzania.
- 9) In a Strategy Meeting held July 16th, 2002, the representatives from MEM were in favour of the Strategy Model B.

1. Introductory Notes

According to Task 7 in the TOR of the project, the Consultant shall outline a minimum of three alternative strategies for developing a Mining Cadastre, and shall make a recommendation as to the most appropriate of the strategies. Further the TOR states that the Consultant shall propose for the Client's consideration an appropriate Implementation Plan for the recommended strategy.

In order to comply with the TOR and to ensure a design tuned to the Client's needs the Consultant has undertaken the following activities:

A meeting was held at SEAMIC on the 16th July, 2002, on which the Consultant presented his findings resulting from Task 1 through 6, and on this background he presented three mining cadastre strategies, and recommended the one found to be the most appropriate in all aspects considered.

The Core Team arranged the list of participants and extension of invitations for the meeting. A total of seventeen senior officials representing the Ministry of Energy and Minerals (the Client) attended the meeting. The Core Team approved the objectives of the meeting. The meeting was organised and hosted by the Consultant.

The paper "Strategy Meeting, Presentation of Three Draft Strategies to the Ministry of Energy and Minerals by the Consultant" encompassing meeting objectives, abstracts and overheads of the talks to be given, was distributed to the participants.

The report 'Strategy Meeting – Resume' has been distributed to all participants, and the comments returned have been taken into consideration.

This report 'Three Mining Cadastre Development Strategies - Presentation and Recommendation' are thus almost identical with the above report presenting,

- in brief the talks providing background information for the meeting
- the principles of the three strategies, including the pros and cons of the strategies,
- a brief summary of what transpired during the meeting,
- a synopsis for the reporting Task 7, A Mining Cadastre Development Strategy (MCDS) for the recommended strategy – Strategy B.

Thus the aim of this report is to propose for the Client's consideration the Consultant's recommendations with regards to the strategies and the implementation plan for the recommended strategy.

2. The Strategy Goals

The long-term goals for the minerals and mining industry in Tanzania are given by the Mineral Policy (1997), stating that,

- the mining industry shall contribute in excess of ten percent of the GDP, and hence,
- an internationally competitive investment environment is needed, and that
- the focus should be on the development of the legal, regulatory, fiscal, and institutional environment for the investment in mining.

Hence, the Mineral Policy sets clear goals for a Mining Cadastre Development Strategy.

A World Bank group has recently proved that substantial economic benefits can be gained from legal, fiscal and institutional reforms of mining sectors in general (Naito and Remy: Mining Sector Reform and Investment. Results of a Global Survey. 2001). The survey disclosed that especially non-landlocked countries with favourable geology can achieve a dramatic increase in their share of world-wide exploration investment by implementing a package of mining reforms. The findings by the WB group appear very relevant in the case of Tanzania and in good accordance with the road set out in Mineral Policy.

3. International Trends in Mining Act Reforms

The trends dominating the international mining act reforms taking place these years generally all consider the following key principles,

- Open mining cadastre and title registry
- Granting of rights based on objective criteria (as opposed to discriminatory criteria)
- First come first served basis
- Exclusive title rights
- Security of the tenure
- Free transferability of mineral rights
- Simple financial maintenance requirements of mineral rights
- Environmental protection adapted to the various phases of a project.

The Mining Act, 1998, does provide for some of the vital principles in modern mining acts, but not all of them. Moreover, as pointed out in Report 2, it appears that although some of the principles are provided in the legal framework, they are somehow suppressed (i.e. such as Open mining cadastre and title registry, first-come-first-served, and security of tenure).

It is of crucial importance to consider the implementation of the principles listed above in any mining cadastre system, in order to develop a mining industry in accordance with the Mineral Policy (1997). Hence they are considered in two of the three strategies proposed.

It is the view of the Consultant that Tanzania in terms of mining legislation, regulations and administration of these leaves room for substantial improvement with respect to the listed key principles in modern mining acts; an up-to-date mining cadastre system should urgently be addressed.

4. The Findings of the Project – Background for the Strategies

The findings resulting from assessments of task 1 through 6 of the TOR form the basis for the development of the Three Mining Cadastre Strategies, and a brief presentation of the findings are provided below.

4.1 Findings Based on the Assessment of the Legal and Regulatory Framework

The Mining Act (1998) and the Regulations (1999) have been assessed and put into perspective by the Mineral Policy (1997). Issues related to a Mining Cadastre System are outlined in Report 2.1.

It is observed that,

- Some articles of the Act are not in accordance with the Mineral Policy – harmonising all statutes, small- and large-scale operations, simple and transparent procedures, harmonising with other land statutes, grouping minerals for facilitating targeting of incentives, skill development or administration, and such articles are recommended to be amended
- Some information is missing or incomplete needing amendment of the Mining Act
- Some articles represent an old concept of mining acts, such as, (i) the prescribed discriminatory procedures; (ii) the special conditions for some types of licenses; (iii) the complex matrix structure for licenses (types of minerals in combination with types of rights)
- The complexity of one type of mining right against another type of mining right.
- The proposed amendments are divided into two types: (i) the revision of certain sections in order to clarify, unify and simplify the Law; (ii) the complements and adjustments in some sections in order to complete missing or correct inconsistent information.
- The reporting obligations are diverse, sometimes unclear, subject to special decisions of the Minister.
- The controls are made complex by the diversity of the requirements.
- No co-ordination with other stakeholders is considered (such as, Local Government, Forestry and Wildlife Departments, Ministry of Natural Resources, and the Vice Presidents Office, the Environmental Departments)

Report 2.1 provides some observed weaknesses in the legal framework, giving raise to ambiguous interpretations and thus individual practice of the Act and Regulation, due to,

- Information not dealt with in the Mining Act (1998)/Regulations (1999)
- Incomplete information in the Mining Act (1998)/Regulations (1999), and
- Inconsistencies concerning e.g. the rights, obligations and requirements, mineral right exclusivity, conflicts of interest, compensation, reporting, and the role of different offices.

This calls for – as a minimum – comprehensive amendments of the Mineral Act, 1998.

4.2 Findings Based on the Assessment of MEM's Mandate and the Current Licensing System.

With regards to the MEM's mandate and the current licensing system, it is observed that,

- Applications and maintenance of mineral rights involve mainly the Licensing and Registry sub-section of the MEM, but also the Minister, the Commissioner, the Assistant Commissioner, the Mining Advisory Committee, Zonal Mines Offices, and Resident Mines Offices.
- On the sideline, the Environmental Management Sub-Section, and the Legal and Fiscal Affairs Sub-Section, both of MEM, are involved.
- The general application process is different for large-scale (Division A and B) and for small-scale licenses (Division D), the major differences being the involvement of the Zonal Mines Office/ Resident Mines Office.
- The resulting document – the mineral right license is basically a “contract” for Division A and B, but rather resembles a “certificate” for Division D licenses.
- With regard to, (i) the administrative detailed procedure; (ii) the archives; (iii) the security of and the access to the information; (iv) the reporting procedures and dispatching from the holders of Licenses; (v) the inspections by the ZMO/RMO, improvements are needed and it is possible to increase the efficiency with a minimum of additional equipment, training, and office facility.
- It is difficult for MEM to fulfil their mandate with respect to, (i) transparency and information to the public; (ii) information to applicants; (iii) communication with Zonal/Resident offices (iv) maintaining working relations with other stakeholders and routines of exchanging information; (v) maintain data security and confidentiality; (vi) keep track of exploration and mining operations of each license; (vii) control illegal mining and rush areas; (viii) the overlapping rights and existing demarcation; (ix) compensation; and (x) control, Inspections and enforcement of the law in general.
- Several aspects of the Mineral Policy are not implemented correctly because of various types of constraints like, (i) the difficult application and time-demanding application process; (ii) the absence of instant, complete and trustworthy information on existing applications and licenses granted; (iii) lacking resources for inspection; (iv) poor infrastructure; (v) no safe storage rooms, facilities, no appropriate archives; (vi) lack of human resources and appropriate training; and (vii) lack of appropriate computer systems and communication facilities.

4.3 Findings Based on the Current Mineral Rights Inventory

The current Mineral Rights Inventory is located at MEM, 9th floor with the Licensing Unit. Based on the Consultants inspections, the following weaknesses are observed (detailed in Report 1),

- The Inventory is stored in fragments on three personal PC computers with no internal linking system;

- The Inventory is based on a number of Excel spreadsheet files (about 160 files) and an unknown number of MapInfo files; the two systems are operated independently on different computers and have no linking identifier.
- The Mineral Rights Inventory is incomplete with respect to
 - records of in-going applications,
 - records of granted licenses
 - errors in records
- Comprehensive and systematic validation of data is not possible
- Data security and safety is inadequate
- Back up is randomly performed
- No hardcopy manual master maps of licenses are available
- Hard copy confidential files are not kept safe and appears to be incomplete
- The Registry premises and computers are vulnerable to unwanted intruders
- The equipment is inadequate for undertaking the licensing work
- The manpower is inadequate for undertaking the licensing work
- Training and capacity building is strongly needed.

As concluded in the Report 3, the current Mineral Rights Inventory is far from being complete, and moreover it contains data errors and some overlapping licenses are recorded, thus the Inventory may best be described as inadequate in any sense and the records should not form the basis for a new Inventory. Rather a new Mineral Rights Inventory should be based on hard copy files, in accordance with the proposed Verification Plan (Report 3).

4.4 The recommended technical design specifications for a modern MCIMS

Specifications for three different configurations for a Mining Cadastre Information Management System are provided in Report 4. The MCIMS is defined as hardware, standard software, application system, and network installation.

The main components for the recommended configuration are as follows,

- The co-ordinates should be measured using the WGS-84 datum. The UTM, 36th Zone South should be used as projection, using meters as units. Central Meridian 33.
- All information about mining licenses is kept in one location, the Central Database. The registration system will be divided into two systems – Central Server and ZMO/RMO server.
- The Configuration B includes a Web Server to handle registration formulas and access by the public. A server and modem ensure communication with ZMO/RMO.

4.5 The Information System and Information Technology Architecture

The information system and the information technology architecture are detailed in Report 5. It is recommended that the MC and the ZMO/RMO should share the same up-to-date

information on applications and licenses. The Information System and Information Technology Architecture is based on a network installation for communication between MCO and ZMO/RMO.

4.6 Findings Based on the Assessment of the Institutional Capacity

The institutional capacity and required training plans are detailed in Report 6. It is concluded that the current organisation of the MEM based on two Sections and a number of Sub-Sections with the Licensing and Registry Sub-Section, as the responsible unit does not adequately support an efficient mineral rights administration. It is therefore recommended to establish a Mining Cadastre Office (MCO) under the Permanent Secretary, MEM, ensuring an independent and efficient organisation. MCO should encompass the following of-fices: (1) Registry; (2) License application processing; (3) Mineral Rights administration; (4) Archive; (5) Information; (6) MRI and MCIMS; and (7) ZMO/RMO Mining Cadastre administration.

It is observed that the current staff involved in mining cadastre applications and administrations are in general inadequately trained with regard to basic computer skills, databases and data validation, GIS applications, and basic administrative procedures for running a MCO. The following training courses are recommended: Basic Computer Training; MS Access and MRI; MapInfo; Mining Cadastre Office procedures and routines; working principles of the MCIMS; and Basic Management. A plan for the implementation of the courses are given in Report 6, considering also the needs for prior training of the task force responsible for the implementation of the Verification Plan (given in Report 3). Further the courses should be levelled according to the skills and background knowledge of the trainees.

5. The Three Alternative Strategies for a Mining Cadastre

5.1 The Strategy Implementation Components

An overhaul of the current mining cadastre system - in which a Mineral Rights Inventory is practically non-existent - aimed for the achievement of the goals set out in the Policy calls for development of some key components as fundamental 'building stones' in the strategy plan, each of them tailor made to meet the requirements for each mineral rights strategy plan. In this study these component are defined as the five 'Strategy Implementation Components':

1. Amendments, simplification or reforming the legal framework
2. Changes in the institutional framework and the administrative practice
3. Establishment of a transparent MCIMS system (Open Title Registry)
4. Resource requirements
5. Implementation of a capacity building and training plan programmes

The Strategy Implementation Components are further elaborated below. The report "Implementation Plan" is detailing the Strategy Implementation Components with respect to the implementation of Strategy B.

The legislation is the hub of any mining cadastre strategy, and consequently Component 1 is *the* determining component with respect to the *design* of each strategy. The additional Strategy Implementation Components will have to be tuned in accordance with what is set out in Component 1.

Component 1. *Amendment, simplification or reforming of the legal framework*, could take one of the three routes set out below,

- (i) **Model A: Mining Act Amendments.** The structure/framework of the Mining Act (1998) and Regulations (1999) remains, but amendments are undertaken considering,
 - Adding incomplete and missing information to the Act
 - Amendments of inconsistent and ambiguous sections
 - Adjustments of the Regulations (1999) accordingly
- (ii) **Model B: Mining Act Simplification.** The basic structure of the Mining Act (1998) and the Regulations (199) remains, but certain sections are to be reformulated and certain sections will be suppressed, considering, i.e.,
 - Amendments in accordance with Model A, where appropriate

- Reducing the number of types of rights (reducing types of licenses and reducing types of minerals)
 - Rights to be granted according to objective criteria (as opposed to discriminatory criteria)
 - Exclusivity of all mineral rights
 - Open mining cadastre and title registry
 - Environmental requirements adapted to phases various phases of a project
 - Adjustments of the Regulations (1999) accordingly
- (iii) **Model C: Mining Act Reform.** Formulation of a new Mining Act, considering the implementation of liberal free market principles applied in some mining acts (e.g. Peru, Madagascar), such as
- Rights to be granted strictly on objective criteria
 - Open mining cadastre and title registry
 - One licensing scheme, providing the security of a tenure from exploration to mining
 - All licenses has status a registered right
 - Free transferability of mineral rights
 - License areas based on a uniform national block system (relinquishment not possible)
 - Simple financial maintenance requirements for mineral rights
 - Environmental requirements adapted to various phases of a project
 - Formulation of new Regulations

All the additional Strategy Implementation Components will differ depending on the strategy to be chosen. Hence any changes being introduced in the legal framework will be the prerequisite for the design of the additional strategy implementation components.

Component 2: *Changes in the institutional framework and the administrative practice.*

The choice of the type of Act outlined in Component 1 will determine the necessary organizational set-up and the administrative practice with regard to processing application, granting rights and monitoring the status of the licenses. Model A, based on discriminatory principles will require a sizeable organization, well defined sets of routines for the flow of information forwards and backwards, ensuring that all requirements for each application and license are addressed appropriately – both by the applicant/licensee and the LU. The current set-up in the Licensing Unit is inappropriate with respect to any of the models of acts, and reorganization is strongly required.

Component 3: *Establishment of a transparent MCIMS system (Open Title Registry)*

The appropriate design of the MCIMS system will depend on the mining act model chosen. Thus routines for communication with Zonal/Resident Mines Offices and key stakeholders have to be implemented. The development of the Mineral Rights Inventory will play an important role, and will have to be re-designed according to the model of strategy/act chosen.

Component 4: Resource requirements

Resource requirements in terms of

- Human resources. Model A, based on discriminatory principles and a complex set of mineral rights poses a strong human resource requirement (management, professionals, technicians, secretaries and clerks) for processing the application, for providing recommendations to the Commissioner/Minister, for monitoring the status for the licenses, and for maintaining the Mining Cadastre Inventory. The staff requirements for Model B is less extensive, because a license is granted on objective criteria (simplified process), and C requires even less staff, since the system is very much a straightforward process, based on the free-market principles and the design of an in-built fee system being the hub of incentives and regulations.
- Facilities (offices, storage rooms, safety rooms for confidential files). The facilities shall reflect the aim of the Licensing Unit, which in turn is determined by the type of the mining act. The current situation does not meet the necessary standards ensuring that all files are kept confidential.
- Equipment (i.e. computers, software, system set-up, photocopiers, printers, plotters, fax machines, telephone lines). Same comments as for the above.
- Financial resources. The financial resources requirements with respect to running costs will vary according to the strategy model chosen; it is clear that running costs needed, will reflect the staff requirements, thus administering Model A is substantially more expensive compared to a system based on Model B or Model C.

Component 5: Implementation of capacity building and training plan programmes.

The training and capacity building programmes will have to be designed specifically to the model chosen. This should be considered for each of the following sub-components, regarding Licensing Unit staff, ZMO staff and RMO staff.

- Management study tour
- Management training courses (internal and/or external)
- Training courses for professionals
- Training courses for technicians, clerks and secretaries
- Training courses for Zonal/Resident Mines Office staff
- Information courses for key government stakeholders – ensuring appropriate co-ordination procedures.

5.2 The Three Alternative Strategies

The five Strategy Implementation Components defined above are represented in each strategy, though the content of each of the component 2 to 5 varies, depending on the type of Component 1 that is chosen. In other words, Component 1 defines the type of strategy and the additional Components sets the speed for implementation of a MICM, but they are all leading to the same desired goals for the mineral sector set out in the Mineral Policy.

Strategy A: Component 1 – Model A; additional component designed accordingly

Strategy B: Component 1 – Model B; additional component designed accordingly

Strategy C: Component 1 – Model C; additional component designed accordingly

6. Pros and Cons of the Strategies

This chapter provides some of the pros and cons related to the three strategies, as also given in table 1; additional explanations are given in the text below. The comparisons between the three strategies are given as relative indications, since no exact figures are possible. The Implementation Plan, Report 7.2 provides further details with respect to Strategy Model B.

Table Fejll Ukendt argument for parameter.. *Overview of the pros and cons of the three strategies.*

	Strategy A	Strategy B	Strategy C
Total strategy implementation time	Short	Medium	Long
Financial resource requirements for Licensing Unit	Extensive	Medium	Low
Staff requirements for Licensing Unit	High	Medium	Low
Application process principle	Discretion	Objective	Objective
Application processing time	Long	Short	Short
Transparency of MCIMS and act	Not complete	Yes	Yes
Overlapping licenses issues	Possible	Possible (See note)	Not possible
Licensees security of tenure	No	Possible	Yes
License maintenance requirements	On discretion	Simple	Simple
License registered as a right	No	Yes	Yes

Note: The risk of overlap is almost absent provided the amendments define the Registrar as responsible of the registration record, and provided compensation rules are defined in case of mistake in the registration. It is "possible" because of the similarity of the conditions with an integrated registration system.

Strategy Implementation Schedule. Assessment of the time needed for the implementation is given as two parts: one for changing the Act according to the model chosen, and the second for the subsequent implementation of the Mining Cadastre Plan. It should be made clear that the first part, any changes of the Act, involves a long row of different phases,

encompassing i.e. draft proposals by the professionals involved, writing up in legal terms by lawyers, and the political process, and thus the times given should be regarded only as the best guess under the assumption that all phases will go smoothly. The time for each of the two phases should be added to get the total anticipated timeframe for each strategy.

- *Strategy A* Mining Act A - Amendments: One year
Strategy Implementation: One year
- *Strategy B* Mining Act B - Simplification: Two years
Strategy Implementation: One year
- *Strategy C* Mining Act C - Reform: Two years
Strategy Implementation: Five years

However, it is clear that the implementation of Strategy A is fairly much a straightforward process. As well it is obvious that the complete implementation of Strategy C, based on the uniform national block system will take years, awaiting all current licenses within a certain block to expire, ensuring that after the implementation only one license is granted on each block (license area and block area are identical). However, a temporary cat-door-solution might be considered for mines operating under Division B, avoiding waiting for twenty-five years.

Financial resource requirements for the Licensing Unit – Salaries are assumed to be by far the biggest part of the annual budget of a Licensing Unit. Thus Model A, requiring the largest number of professionals and technicians will also require the largest financial budget of the three models, and Model C the smallest annual budget. Staff requirements for the Licensing Unit – Due to the discretionary principles applied in Model A, this model will require the highest number of professionals for assessing applications, control of overlapping areas, budgets, reports etc. The Model C thus will require the smallest number of professionals and technicians.

Application processing time - will be longer for Strategy Model A, for which the Act is based on discretionary principles and thus requires a thorough scrutinising process, compared to Model B and C, based on simple objective criteria.

Transparency of the cadastre system will not be achieved in Model A, due to the fact that it is based on the discretionary principles, and special agreements made with a licensee has to be kept confidential.

Overlapping licenses - Issues may still occur in Model A and Model B, both based on coordinates provided by the applicant and subsequently checked and entered to the system by the Licensing Unit staff, thus being vulnerable to human errors. However, checking routines will ensure that such errors occur only very rarely. Overlap is not possible in Model C.

Security of the tenure - will be guaranteed in Model C but not in Model A and B, though Model B might be modified to do so.

License Maintenance Requirements – The requirements a Licensee has to comply with in order to renew a license. Model A is based on the discretionary principles, thus maintenance requirements are based partly on assessment of the work performance and partly on payments; Model B and C are both based on objective criteria, hence maintenance requirements are entirely fee-based – normally defined as simple maintenance requirements.

License has status as registered right – in contradiction to the mining acts forming the basis for Model B and C, the Model A Mining Act shall not ensure all types of licenses the status as a registered right which is in accordance with the current system.

7. The Consultant's Recommendations

The three different strategies are all designed to generate the same goal – implementing the Mineral Policy (1997). However, it is the view of the Consultant that the strategies will not attract the mining industry to the same extent, and given this fact the schedules for reaching the policy goals may also be somewhat different. Disregarding the geological resources, exploration and mining companies will be more inclined to invest where the mineral legislation is clear, simple and mineral rights are secured.

The Consultant finds that Strategy Model A, based on an amended version of the Mineral Act (1998) is somehow “old fashioned”, and thus carries the risk that a second round of amendments will be called for in a few years time; this should be avoided because (i) any amendment process is costly in terms of manpower and resources, and (ii) frequent changes of a mining act signals “instability” and has a negative impact on would-be investors.

Strategy Model B, is based on the principles which are widely considered to be the best practice in mining law, encompassing elements such as ‘first-come, first-served’, rights are granted on non-discriminatory principles, all rights are guaranteed exclusivity; and based and supported by a modern, open mining cadastre and title registry and transparent administration. The Consultant finds that the Strategy Model B supports the goals set out in the Mineral Policy, 1997. The Consultant recommends a Mining Cadastre Development Strategy along the lines set out in Model B - amending and simplifying the Mining Act, 1998 - and to adjust the administrative set-up accordingly.

Strategy Model C involves a very liberal mining act, which in addition to the principles outlined for Strategy Model B, involves principles such as a single license system ensuring the licensee the rights covering all steps from exploration through exploitation; simple annual obligations to maintain the mineral rights; and all licenses are equi-dimensional defined by a national grid system. The aim of this model is to achieve the ultimate simplification and efficiency of the administrative system, trusting that the best mechanism for control is the introduction of liberal market principles. It is the view of the Consultant that Strategy Model C will not allow adequately support to artisanal and small-scale mining activities, and thus implementation of this model is not in accordance with the Mineral Policy, 1997.

8. The Strategy Meeting

8.1 The Objectives

A meeting focusing the Mining Cadastre Strategies – the Strategy Meeting - was held at SEAMIC on July 16th, 2002 when the Consultant presented to the Client three draft Mining Cadastre Strategies.

The objective of the Strategy Meeting was to discuss with the Client three possible mining cadastre strategies and based on input and comments from the Client confirm the most appropriate strategy to be proposed and subsequently to develop an Implementation Plan for the recommended strategy.

Table Fejll UkenDt argument for parameter.. *Participants in the Strategy Meeting, held July 16th, 2002*

NAME	POSITION
GOMBE, C.E.	TECHNICIAN – LICENSING AND MINERAL RIGHT REGISTRY
KAFUMU, DR. P.	HEAD MINERAL PROMOTION AND STATISTICS AND ASST. COORDINATOR – MSD/NDF
LUPINDU, K.P.	ASSISTANT PROJECT MANAGER, MSD-TA/NDF
. MAKYAO, F.N	SENIOR GEOLOGIST
MCHWAMPAKA, B.J.	HEAD, COORDINATION AND EXTENSION SERVICES
MMBANDO, H.E.	HEAD, ENVIRONMENTAL MANAGEMENT
MNZAVA, L.J.	HEAD, LICENSING AND MINERAL RIGHT REGISTRY; CO-ORDINATOR – MSD TA/NDF
MRUMA, H.	PROJECT MANAGER, MSD-TA/NDF
MUZE, M.	LEGAL OFFICER – MINISTRY OF ENERGY & MINERALS
MWAIGOBEKE, D.H.	GEOLOGIST – EASTERN ZONE - MINES OFFICE - DAR ES SALAAM
NGEREJA, P.	GEOLOGIST
NKWANGA, F.	GEOLOGIST - RESIDENT MINES OFFICER - MOROGORO
NTULANALWO, V. B.	ASST. COMMISSIONER, MINERALS DEVELOPMENT
NYELO, G.	HEAD, LEGAL & FISCAL SECTION
SAID, J.K.M.	TECHNICIAN – NORTHERN ZONE MINES OFFICE - ARUSHA
SAROTA, J.	MINERAL ECONOMIST
TESHA, A. L.	TECHNICAL OFFICER-MSD TA/NDF
GEBREMICHAEL, M.	CONSULTANT
HERNANDEZ, A.	CONSULTANT
ISHGIZE, I.A.	CONSULTANT
KALVIG, P.	CONSULTANT
NYAKAANA, J.	CONSULTANT

It was found appropriate to discuss the draft strategies with the Client at an early stage, because the decision of the strategy to be proposed also would have an impact on the following task which were to be undertaken by the Consultant as part of the TOR,

- amendments to the Mining Act and Regulations of relevance for the implementation of a new cadastre system;
- provide Tender Documents for procurement for the recommended strategy; and
- provide a training plan and study tour proposal related to the recommended strategy.

Four abstract for the talks to be given in the meeting were distributed to the participants in advance of the meeting. The Agenda of the meeting was proposed in co-operation with the Core Team.

At the Strategy Meeting the Consultant presented to the Client,

- Their preliminary findings on the assessment of the legal and regulatory framework (Mining Act, 1998; Regulations, 1999);
- Their preliminary findings on the assessment of the MEM mandate to establish the licensing system;
- Some of the major elements and trends in international mining reforms, and
- Proposal of three Mining Cadastre Development Strategies, outlining the pros and cons of each strategy.

Seventeen senior officials of MEM participated in the meeting, all proposed by the Core Team. The list of Participants is given in Annex 2.

The outcome of the meeting was subsequently reported in the following documents:

- "Provisional Summary of the Strategy Meeting" prepared by both the Client and the Consultant and submitted to the PMU on July 19th, 2002.
- "Three Mining Cadastre Developments Strategies – Resume" prepared by the Consultant and submitted to the Client on July 30th, 2002.

8.2 Conclusions Made by the Strategy Meeting

The Strategy Meeting discussed the five strategy implementation components, and the statements below are briefly what transpired during the discussions.

The Strategy Implementation Component

The Mining Act – Components

Mining Act Model A: It was the opinion of the meeting, that amendments would only be a temporary solution with the risk of having to modify it again in the next few years.

Mining Act Model B: It was the opinion of the meeting, that both amendments and simplifications are unavoidable. Amendments of Model B should be based on the following principles,

- Simplification and reducing the number of type of rights
- Objective criteria (non discriminatory decisions)
- Exclusivity of all mineral rights
- Adjustments of the regulation according to the amended act.

The participants of the meeting were very much in favour of Mining Act Model B.

Mining Act Model C: It was the opinion of the meeting, reforming the mining act will necessitate the correction of all licenses within the block system and it will need more resources to be mobilised.

Additional strategy implementation components

- The Institutional framework and administrative practices
- MCIMS – open title registry
- Implementation plan – capacity building and training plans
- Resource requirements

The additional components will have to be designed according to the mining act.

The Strategy should be selected based on several criteria, i.e. implementation time, resources, and suitability of developing the mining industry.

Environmental aspects

It is important to have a well-defined environmental management system, phased over license lifetime.

Stakeholders

Key stakeholders should be identified, and an appropriate co-ordination procedure and routines between these and the Licensing Unit should be ensured.

Additional comments

Additional comments made by individual participants during the meeting,

- a. The mining act should govern both foreign investors and small-scale miners' interests
- b. Propose UTM co-ordinate system irrespectively of strategy selected

Implementation plan

The meeting also decided that the implementation plan should consider the following,

- c. delay of the amendment of the act
- d. redesign of the administrative system
- e. training plans for capacity buildings

**CONSULTANCY FOR THE DESIGN OF A MINING CADASTRE DEVELOPMENT STRATEGY
RFP#MSD-TA/NDF-277-2**

DRAFT FINAL REPORT

October 12, 2002

**Implementation of
A Mining Cadastre Development Strategy (MCDS)**

Report 7.2

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2.2.5 Component 5 - Human Resource Requirement for MCO.....	Fejl! Bogmærke er ikke defineret.
2.2.6 Component 6 - Capacity Building and Training Programmes.....	Fejl! Bogmærke er ikke defineret.
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Abbreviations

MCDS	Mining Cadastre Development Strategy
MCIMS	Mining Cadastre Information Management System
MEM	Ministry of Energy and Minerals
ML	Mining License
PL	Prospecting License
PML	Preliminary Mining License
PPL	Preliminary Prospecting License
RMO	Resident Mines Office
TOR	Terms of Reference, NDF Project 277-2
ZMO	Zonal Mines Office

Executive Summary

1. The Implementation Plan describes implementation of Strategy Model B, as detailed in Report 7.1, encompassing six Strategy Components.
2. Strategy Component 1 - Writing Mining Act B and Regulations B. It is recommended to organise a task force composed by four MEM staff members, one external legal expert and one external consultant with expertise in international mining laws. The estimated duration of for this task is eleven months, inclusive the approval by the Parliament.
3. Strategy Component 2 - Changes of Institutional Framework and the Administrative Practise. It is recommended to re-organise the LU as the Tanzania Mining Cadastre Office (MCO), with the sole responsibilities to grant mineral licenses and to administer such rights. To ensure an independent status it is recommended to organise MCO directly under the Permanent Secretary, MEM.
4. New administrative principles for the MCIMS to be applied by the MCO for Mineral Right applications are detailed. The proposal details the respective functions and responsibilities of MCO and the decentralised functions to be undertaken by the ZMO/RMO. In general the Head of MCO is authorising all licenses by his signature; a Head of ZMO/RMO may authorise PPL and PML only and provided prior approval by the Head of MCO.
5. Strategy Component 3 - The MCIMS. It is recommended to implement the MCIMS, hardware, software, application system and network installation based on the Configuration B selected in Report 4, encompassing fifteen desktop PC with Windows 2000 and Windows Office XP. The server software is Microsoft Windows Server 2000 and ISA Server 2000. The database environment is MS Access or SQL. The GIS component should be MapInfo.
6. Strategy Component 4 - Implementation of the Mineral Right Inventory and the Verification Plan. The establishment of a new Mineral Rights Inventory is urgently needed. The existing inventory is not found adequate and so is also the confidential file archive. It is therefore recommended to establish a new Mineral Rights Inventory (MRI) based on a nine step implementation project. The duration of this Component is estimated to about fourteen month. The estimated human resource requirements for the individual sub-phases are detailed.
7. Strategy Component 5 – Human Resource Requirement for MCO. It estimated that the staff requirements are about eighteen people encompassing the head and assistant head. In addition the some estimates are made for the office area size requirements.
8. Strategy Component 6 – Capacity Building and Training Programmes. The following topics are recommended for the Training Program: Basic Computer Training; Databases (Access and MRI); GIS (MapInfo); MCIMS; Mining Cadastre Office working principles and routines, and basic management courses. Planning of the training courses should consider the timing of the Verification Plan., ensuring that the staff involved in this project are all provided the necessary skills prior to the implementation of the Verification Plan.
9. It is estimated that a minimum of fourteen months period is require for the implementation of the Mining Cadastre Strategy – without considering any delays. A breakdown table provides the details.

10. The procurement comprises three groups: (1) MCIMS including hardware, software, development and related users' training; (2) Equipment, furniture, locally provided; and (3) Consultancy services for institutional strengthening, training, and study tour. It is recommended to prepare one Tender document for the whole MCIMS. The procurement process is a "Procurement of Goods" standard Tender. It is recommended to use local shopping for providing necessary equipment in domestic shops; this procurement process can be implemented in two years.
11. It is recommended that a Service Contract be signed with an international company with a proven record in administration of mineral rights, MCIMS, and training.
12. It is recommended that domestic training in IT software, systems or basic computer skills is organised by the Service Contractor and in co-operation with local provider,
13. The following detailed costs are estimated: MCIMS: c US 420,000 \$; Capacity building and training: US 180,000 \$; other goods: US 160,000 \$.
14. A List of Prospective Suppliers from the Nordic countries is provided.

1. Introduction

Reporting Task 7 is structured in two main parts: Report 7.1, Presentation and Recommendation of Three Alternative Mining Cadastre Development Strategies”, in which the most appropriate strategy is proposed – Strategy Model B – on the basis of an analysis of all project findings. In Report 7.2, Implementation of a Mining Cadastre Development Strategy (MCDS) details the implementation plan for Strategy Model B.

2. Implementation Plan – Model B

2.1 The Mining Cadastre Strategies Model A, B and C – in Brief

The goals set out in the Mineral Policy, calls for the implementation of a Mining Cadastre Strategy. The Report 7.1 details three alternative Mining Cadastre Strategies, composed by the development of following five key strategy implementation components,

1. Legal framework: Either amendments or simplification or reforms.
2. Changes in the institutional framework and the administrative practice
3. Establishment of a transparent MCIMS system (Open Title Registry)
4. Resources
5. Implementation of a capacity building plan and training programmes

The legislation is the hub of any mining cadastre strategy, and consequently the Component 1 is *the* determining component with respect to the *design* of each strategy. The additional Strategy Implementation Components will have to be tuned according to Component 1 and to the desired speed of implementation.

Component 1. Either *Amendment or simplification or reforming of the legal framework*, could take one of the three routes set out below,

Model A: Mining Act Amendments. The structure/framework of the Mining Act (1998) and Regulations (1999) remains, but amendments are undertaken considering,

- Adding incomplete and missing information to the Act
- Amendments of inconsistent and ambiguous sections
- Adjustments of the Regulations (1999) accordingly

Model B: Mining Act Simplification. The basic structure of the Mining Act (1998) and the Regulations (1999) remains, but certain sections are to be reformulated and certain sections being suppressed, considering e.g.

- Amendments in accordance with Model A, where appropriate
- Reducing the number of types of rights (reducing types of licenses and reducing types of minerals)
- Rights to be granted according to objective criteria (as opposed to discriminatory criteria)
- Exclusivity of all mineral rights
- Open mining cadastre and title registry
- Environmental requirements adapted to various phases of a project
- Adjustments of the Regulations (1999) accordingly

Model C: Mining Act Reform. Formulation of a new Mining Act, considering the implementation of liberal free market principles applied in some mining acts (i.e. Peru, Madagascar), such as

- Rights to be granted strictly on objective criteria
- Open mining cadastre and title registry
- One licensing scheme, providing the security of a tenure from exploration to mining
- All licenses has status a registered right
- Free transferability of mineral rights
- License areas based on a uniform national block system (relinquishment not possible)
- Simple financial maintenance requirements for mineral rights
- Environmental requirements adapted to various phases of a project
- Formulation of new Regulations

All the additional Strategy Implementation Components will differ depending on the strategy to be chosen. Hence any changes being introduced in the legal framework will be the prerequisite for the design of the additional Strategy Implementation Components, though the content of each of the Component 2 to 5 varies, depending on the type of Component 1. In other words Component 1 is defining the type of strategy and the additional Components are setting the speed, for implementation of a MICM, but all leading to the same goals for the mineral sector set out in the Mineral Policy.

The basic principles of the three strategies are defines as follows,

Strategy A: Component 1 – Model A; additional component designed accordingly

Strategy B: Component 1 – Model B; additional component designed accordingly

Strategy C: Component 1 – Model C; additional component designed accordingly

2.1.1 Strategy Recommendations

The Consultant finds that Strategy Model A, based on an amended version of the Mineral Act (1998) carries the risk that a second round of amendments must be called for in a few years time.

Strategy Model B is based on the principles which are widely considered to be the best international practices and supported by a modern, open mining cadastre and tile registry and transparent administration. The Consultant finds that the Strategy Model B supports the goals set out in the Mineral Policy.

Strategy Model C involves a very liberal mining act, which in addition to the principles outlined for Strategy Model B, involves principles such as a single license system ensuring the licensee the right covering all steps from exploration through exploitation; simple annual obligations to maintain the mineral rights; and all licenses are equi-dimensional and defined by a national grid system. It is the view of the Consultant that Strategy Model C will not allow adequately support to artisanal and small-scale mining activities, and hence does not support the Mineral Policy of Tanzania.

2.2 Implementation of Strategy Model B

The principles in Strategy Model B are detailed in Report 7.1.

- Encompassing the strategy components and elements listed below:

2.2.1 Component 1 – Writing Mining Act B and Regulations B

The Report 2.2 provides the details for amendments and simplifications to the Mining Act, 1998, along the lines set out in the recommended strategy (Report 7.1).

Preparing the amendments and simplification of the Mining Act, 1998 and the subsequent adjustment of the Regulations, 1999, consists of the following phases,

Work Planning – Component 1

A special task force should be organised, with the responsibility to (Task a) undertake the planning the project with regard to timing and resources, and to (Task b) undertake the writing process of the Mining Act B and Regulations B. As given in Table 2, Task b includes working seminars and presentations to ensure that all aspects and consequences of the Mining Act B and Regulations B are comprehensively considered. The working seminars should be empowered to direct the project.

The task force must be staffed with senior officers of MEM, some being legal experts and some having the hands on experience from the current administration. It should be considered to draw on the expertise represented among the Zonal Mines Officers and the Tanzania Geological Survey. In addition it is recommended to call on one external legal expert (preferably from the Ministry of Justice) and not less than one expatriate consultant with strong know-how of international mining laws. An Assistant Commissioner should chair the task force.

To ensure the best possible results and the effectiveness of this task force, it is recommended to allocate two rooms and appropriate facilities for the project, and to free the MEM staff members of the task force from any other duties.

Table Fejll Ukendt argument for parameter.. *Task force organisation and estimated duration of the*

Recommended task force	Number	Period (Months)
Senior geologists/engineers from MEM	: 2	13
Legal experts from MEM	: 1	13
External legal expert	: 1	3
External mining law expert	: 1	3
Secretary	: 1	13

Table Fejll Ukendt argument for parameter.. *The Task Force and time schedules for undertaking the revision of the legislative framework.*

Project Phase	Estimated duration (Month)
Project Planning	1
Writing Draft 0 Mining Act B	1
Working Seminar 1 presentation/assessments	0.5
Writing Draft 1 Mining Act B	1
Working Seminar 2 presentation/approval	0.5
Presentation to the Minister	0.5
Writing Draft 0 Regulations B	0.5
Working Seminar 1 presentation/assessments	0.5
Writing Draft 1 Regulations B	0.5
Working Seminar 2 presentation/approval	0.5
Presentation to the Minister	0.5
Political approval of the Legal Framework B	4.5

Working Seminars are included in the process to ensure that all aspects and consequences are considered. The participants in such seminars may be senior officers from MEM, including ZMO/RMO and TGS; it should additionally be considered to arrange a seminar for “the users”, such as governmental stakeholders and representatives of the mining industry.

It is recommended to undertake the writing up of the Mining Act B as the first step, and await any work on the Regulations B until the Minister for Energy and Minerals has approved the principles of the Mining Act B. The subsequent work of the Regulations B follows the receipt of the act, and when approved by the Minister the Mining Act B and the Regulations B are ready for presentation to the political system. The duration of this part of the project is arbitrarily set to six month, but this estimate is of course very uncertain.

The process of writing a new simplified Mining Act B and Regulations B is estimated (Table 1) to about 13 month. It is assumed that the Task Force is operational throughout this period, and hence that the MEM members are allocated to the project during the entire thirteen months period; however it is anticipated that the external legal expert and the external mining expert will be required for only three months.

In the timing of the entire implementation process the printing and distribution of the Mining Act B and Regulations B should be considered.

2.2.2 Component 2 - Changes of the Institutional Framework and the Administrative Practice

In the countries where the mining laws have been reformed, the mining sector's institutional framework is also restructured and composed by the following bodies:

1. A Ministry of Minerals to co-ordinate the various institutional functions specific to mining, and to interface with other governmental ministries, agencies and institutions to assure policy consistency.
2. A Mining Cadastre Office to administer all aspects of the licensing and monitoring functions based on an open, transparent and efficient basis through a public registry of mining rights.
3. A Geological Survey to develop, analyse and publish scientific and technical information on the basic geology of all regions of the national territory and to promote the country's investment potential.
4. A Mining Environmental Office to develop sector/specific technical norms and guidelines, evaluate environmental assessments and operating plans, and monitor environmental compliance and impacts.
5. Mining Safety Office to develop norms and guidelines, and to monitor safety complaints.

The Institutional Arrangement of the Mining Cadastre Office (MCO)

In Tanzania the Ministry of Energy and Minerals undertakes the tasks related to overall coordination. The Licensing Unit is accommodated as a sub/section within MEM. However, the Mining Act, 1998 and the Regulations, 1999, encompasses sections on environment and safety, and is responsible for monitoring compliance with all aspects of the framework. In addition the Licensing Unit is responsible for issuing brokers and dealers licenses.

It is recommended to re-organise the Licensing Unit as follows:

- Name: Tanzania Mining Cadastre Office (MCO)
- Establish MCO as an independent Division under the Ministry of Energy and Minerals, with the sole responsibility to grant mineral licenses and to administer such rights, encompassing also the maintenance of the Mineral Rights Inventory. (It is recommended to transfer the issue of brokers and dealers licenses to i.e. Ministry of Commerce.)
- The Head of MCO refers directly to the Permanent Secretary
- Locate the MCO outside the premises of the MEM head-office to flag the independent status, to minimise unwanted interference in the mineral rights administration, and to make it easily accessible to the public.
- To staff the MCO with adequately trained professionals and technicians.
- To equip the MCO with the appropriate computers and equipment to undertake the tasks.

It is further recommended that MCO is the sole institution undertaking granting of mineral rights. When the MCO is up and running it may be considered to establish satellite offices, enabling on-line applications.

Responsibilities of Mining Cadastre Office (MCO)

MCO is responsible for all aspects of the licensing functions and the assurance that the administration complies with the principles of open, transparent and efficient bases through a public registry of mineral rights. Moreover the MCO is responsible for maintaining the Mineral Rights Inventory.

The MCO should not be responsible for undertaking assessments with regard to financial, fiscal, safety and environment. However, MCO is responsible dispatching any type of relevant information to the responsible units of MEM and other institutional stakeholders, and hence is responsible for dispatching copies of compulsory company reports to the responsible units depending of the type of report, such as,

- Mining Environment
- Mining Safety
- TGS, for assessment of the geological information
- Any other stakeholders according to agreements with MEM

The Mineral Right Application Process Routines

The general process for License application can be revised according to new Laws, Regulations and organisation. It could be summarised as follows:

For PML/PPL applications the following procedure applies:

1. All applicants for a PML/PPL have to fill a standard "Application Form" in ZMO or MCO. The acceptability of the PML / PPL application is verified in the ZMO (nationality, completely filled form, eligibility) before registering the entry in the computer and delivering a receipt to the applicant.
2. The form and the co-ordinates are then entered in the online MCIMS by the ZMO in chronological order of registration of applications. After the technical control of the form data, ZMO uses MCIMS to check online the co-ordinates and verify that the area requested by the applicant is available.
3. If the area is partly of fully the computer (existing Licenses to be extracted) calculates unavailable, corrective co-ordinates. The new total area cannot exceed the total area of the application. A document is printed out with approved co-ordinates (as required if available or adjusted) to be delivered to and signed (approved) by the applicant. If the applicant will change the limits, he must apply again with new date, time and co-ordinates. ZMO can assist the applicant using MCIMS.
4. When the applicant signs the extract with co-ordinates, it is registered in MCIMS as an "approved by the applicant" application.
5. MCO is informed of the validity of the application and the Head of MCO controls (conflict of interest, eligibility), then confirms using MCIMS (final acceptance). ZMO is informed online. The final License is printed out in ZMO comprising the necessary information on the applicant, application, complete co-ordinates of the limits, information on existing Licenses included into the area.
6. The License is signed by ZMO Head of the office and delivered to the Applicant.

For PL /ML applications the following procedure applies:

1. All applicants for a Mineral Right have to fill in a standard "Application Form" in MCO. MCO fills in the Data Entry Form. The acceptability of the PL/ML application is verified in the MCO (all documents provided, completely filled form) before registering the entry in the computer and delivering a receipt to the applicant.
2. The form and the co-ordinates are then entered in the online MCIMS by the MCO in chronological order. After the technical control of the form data, MCO uses MCIMS to check the co-ordinates and verify that the area requested by the applicant is vacant.
3. If the area is partly or fully unavailable, corrective co-ordinates are proposed by the computer (existing Licenses to be extracted). The new total area cannot exceed the total area of the application. A document is printed out with approved co-ordinates (as required if available or adjusted)
4. The application is studied in accordance with the Act and Regulations, including payment of fees. If necessary, the Application Section may ask for an independent body to provide advice on environmental, safety or technical matters. The Application Section signs two copies of a checklist and proposes recommendations. The complete application with reports is going to the Head of MCO for decision.
5. The Head of MCO decides on the action (refused, accepted, additional information requested), signs the checklist documents and the application returns to the Application Section for processing.
6. If the application is accepted or refused, it is registered in the MCIMS. The resulting letter is printed out. The draft License is printed out with necessary information on the applicant, application, and complete co-ordinates of the limits, with co-ordinates of existing Licenses included into the area. A chronological License number is created.
7. In case of additional information request, the Application Section complete the information, inquiring the applicant if necessary.
8. The Head of MCO signs the documents produced by MCIMS with one signed checklist. The application is send to the Archive with the reference number of the License written on the heading page.
9. The applicant is informed to pay the fees and to collect his License.

It should be noted, that according to the Mining Act B, all decisions are made on a non-discriminatory basis, and thus the assessment of the application is mainly a question of checking if all relevant information are submitted/available.

Renewals, management of expiry and cancelling Licenses are following a process with the same principles:

- PML and PPL are managed at the ZMO, but the Head of MCO should approve – via the MCIMS mail system - before delivering the License;
- PL and ML are managed and decided by the MCO. Independent advisers may be required;
- The Archive Section is separated from the Application Section and file all documentation, including confidential files.
- MCO and ZMO are online using full resources of MCIMS;
- MCO and ZMOs are acting as public information service.

It is important that the establishment of the MCO is planned in detail and to ensure the involvement of all potential groups of civil servants. It is recommended to organise a Special Task force to undertake the detailed planning, timing and budgeting.

2.2.3 Component 3 – The MCIMS

The MCIMS is defined as hardware, standard software, application system and network installation, based on the configuration selected in Report 4 “MCIMS”.

The MCO and the ZMOs should share the same up-to-date information on applications and licenses. The Information System and Information Technology Architecture is based on a network installation for communicating between MCO and ZMOs, with databases providing a registration access to MCO and information on the appropriate area to ZMOs. Major issues as data-security and -safety, control of external access to the database or queries, possible future extensions are taken into consideration.

The hardware and standard software is listed in the Report. Suggestions are Microsoft products at 15 desktop computers with Windows 2000 and Windows Office XP. The server software is Microsoft Windows Server 2000 and ISA Server 2000 to handle the firewall and external communications (Proxy server).

The database environment is also Microsoft (Access or SQL), where Access is chosen as the best choice at the moment and SQL Server at a later stage. The database handles all entries and only in the database are data kept.

The GIS should be a component to the database and MapInfo software is proposed, being a suitable and high quality GIS system for the given needs and the database environment envisaged.

2.2.4 Component 4 - Implementation of the Mineral Right Inventory and the Verification Plan

The status of the Mineral Rights Inventory must be rectified irrespectively of how the modernisation of the Mining Law and Regulations proceed. To achieve the overall goal of all the activities dealt with in this project, it is strongly recommended to immediately start the implementation of the Verification Plan according to the phases outlined in Table 3. The detailed procedure for the Verification Plan is given in Report 3, Chapter 4. The time schedule of the Verification Plan is given in Table 3.

Table Fejll Ukendt argument for parameter.. *The phases and the estimated human resource requirements for implementing the Verification Plan.*

Phase	Task	Staff requirement	Number
A	Project Planning and Pilot Test	Head of MCO Assist. Head of MCO Senior MCO Officer MEM lawyer Technician External Consultant	1 1 4 1 2 1
B	Notification of the public		
C	Suspension of relevant parts of the Mining Act (no applications accepted and no applications processed)	Head of MCO Assist. Head of MCO MEM lawyer External Consultant	1 1 1 1
D	Organisation of adequate set-up with regard to facilities (hard-ware, soft-ware photocopier, telephone etc), process manuals, offices, training of the officers, work-plans, archive facilities etc	Same phase as organising the MCO	
E	Meetings with all licensees and recording of data – including first step data assessments (organised Zone by Zone)	Senior MCO Officer Assist. Senior Officer Supervisor MCO Registrar Assist. MCO Registrar Archive Officer Assist. Archive Officer Min. Right Reg. Officer Assist. Min. Right. Reg. Officer Secretary Assist. Secretary External Consultant	4 11 3 3 3 2 2 3 3 3 3 3 1
F	Quality control of all data gathered – including overlap check	Senior MCO Officer Assist. Senior Officer Supervisor MCO Registrar Assist. MCO Registrar Archive Officer Assist. Archive Officer Min. Right Reg. Officer Assist. Min. Right. Reg. Officer Secretary Assist. Secretary External Consultant	4 11 3 3 3 2 2 3 3 3 3 3 1

G	Entry of all data to the new Mineral Rights Inventory	Min. Right Reg. Officer	3
		Assist. Min. Right. Reg. Officer	3
H	Negotiations with licensees regarding overlap	Head of MCO	1
		Assist. Head MCO	1
		Senior MCO Officer	2
I	Issuing of new License Certificates	Head of MCO	1
		Assist. Head MCO	1
		Senior MCO Officer	2

2.2.5 Component 5 - Human Resource Requirement for MCO

Strategy Model B assumes an efficient open title registry based on a modern mining cadastre and computerised mineral right recording system. Moreover the Mining Act B provides for granting of mineral rights on the basis of objective criteria. Both elements are in favour of a small and efficient organization.

In order to assess the workload of the MCO the following assumptions are made:

- Small-scale mining license applications (Division D): about 1,000 applications annually
- Prospecting License applications (Division A): About 200 applications annually
- Mining License applications (Division B): About 25 applications annually,

The above guesses are roughly equivalent to 6 licenses per working day. To accomplish this workload not less than four senior officers are required for processing the applications, supported by technicians for registrations, filing, area checking, registrations in the Mineral Rights Inventory, totalling a staff of eighteen and two managers (Table 4). In addition two contact officers are allocated to undertake clients inquiries. The staff calculations are based on the assumption that administration of MCO is undertaken elsewhere by MEM, and therefore no accountant is included.

Table Fejll Ukendt argument for parameter.. *Staffing the MCO*

<i>Title</i>	<i>Qualifications</i>	<i>Quantity</i>	<i>Duties</i>
Head of MCO	Lawyer	1	Overall responsible
Assistant Head, MCO	Mining Engineer	1	Liaison and application process
Senior MCO Officer	Geol./Mining Eng.	4	Application Processing
Contact Officer	Geol./Mining Eng.	2	Clients Contact Point
MCO Registrar	Technician	3	Registration
Archive Officer	Technician	2	Archive/filing
Min. Right. Reg. Officer	Technician	3	Mineral Rights Inventory
Secretary/Clerk	Secretary	2	Administration/photocopying

It is recommended (Report 6) to establish MCO as an independent office under the Permanent Secretary, Ministry of Energy and Minerals. The proposed structure is shown in Fig. 1. The boxes shown for MCO are the individual task offices, not Sub-Sections as for the Mines Section and the Mineral Development Section.

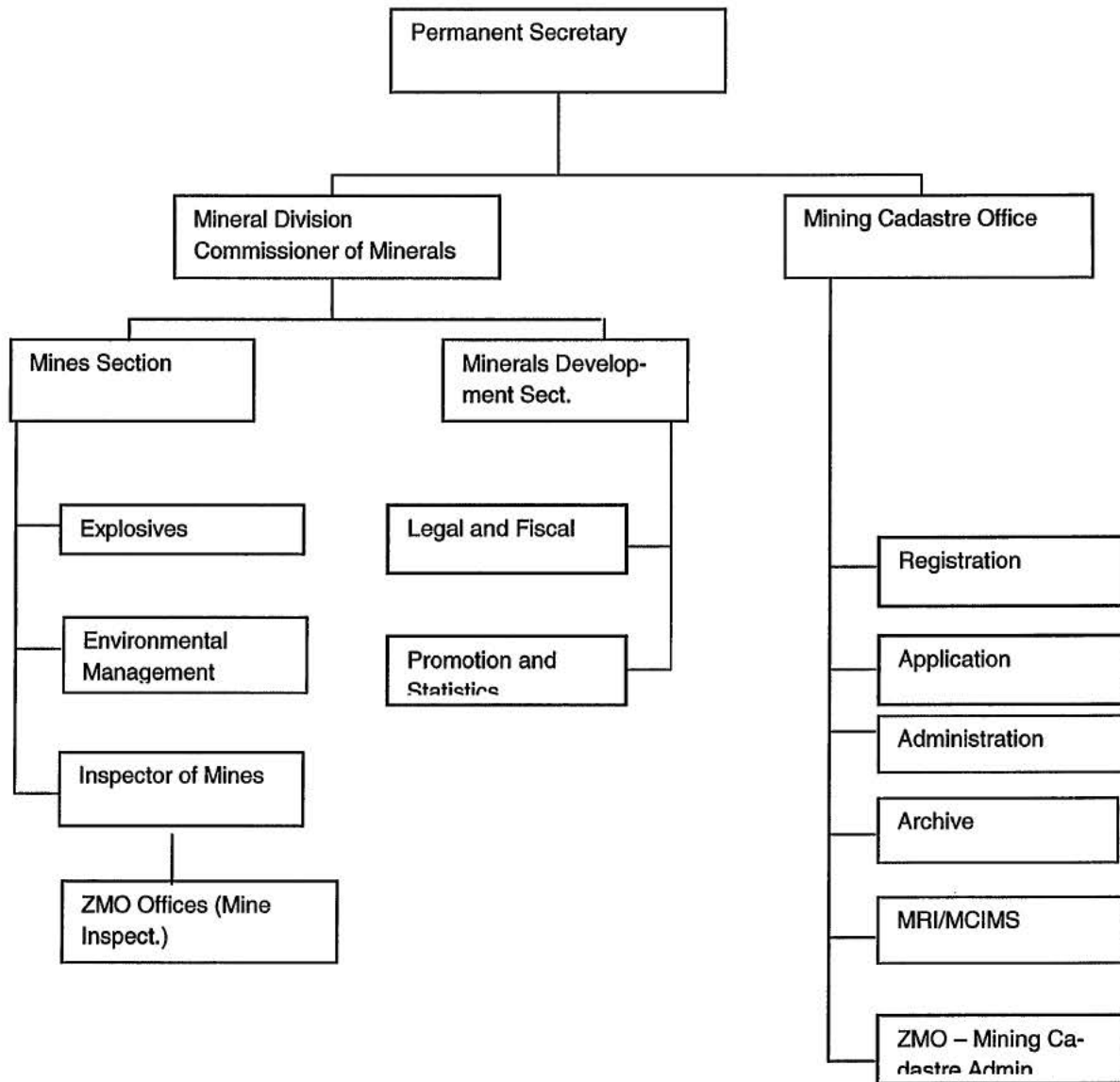


Figure Fejl! Ukendt argument for parameter.. *Organisation diagram for the Mining Cadastre Office (MCO). The MCO boxes are in the text referred to as "Sections".*

The requirements for the MCO with regard to offices are given in Table 5. It should be noticed that the area figures are only recommendations. However, sufficient space and rooms

are recommended to ensure a convenient and efficient working process, and moreover to ensure that the restricted access to certain rooms can be fulfilled.

Table Fejll Ukendt argument for parameter.. Facility requirements for MCO

Title	Quantity	Specifications
Managers Office	1	No specifications
Assist. Man. Office	1	No specifications
Senior Officers Office	2	Not less than 20 sq. m; restricted access
Registering Office	1	Not less than 20 sq. m; restricted access
Client Inquiries Office	1	Not less than 20 sq. m
Secretary Office	1	Not less than 20 sq. m; restricted access
Min. Right Inventory	1	Not less than 20 sq. m; air conditioned; fire-safe; restricted access
Archive	2	Not less than 60 sq. m; fire-safe; restricted access
Safety room	1	Specifications not available.

The office equipment requirements for the MCO are estimated on the basis of the anticipated workload, functions and numbers of staff, considering also the efficiency of task duties. Estimated quantities are given in Table 6.

Table Fejll Ukendt argument for parameter.. MCO office equipment requirements

Item	Quantity	Specifications
PC's	15	Specification in Report 5
Min. Rights Invent Computer	2	Specification in Report 5
MS Office	15	Specifications in Report 5
Printer	4	A4 Laser Printer
Printer A3	1	Colour A3 Printer
Plotter A0	1	Colour plotter
Photocopier	1	Standard – up to A3 size
Fax machine	1	For A4 paper
Telephone landline	2	2 lines and 10 extensions

Internet connections	1	To all PC (- but not for Min. Rights Inventory)
Network		Connecting all PC in accordance with the re-recommendations outlined in Report 5.

In addition to the equipment mentioned in Table 6 appropriate office furniture should be acquired; an estimate of such requirements is given in Table 6.

Table Fejll Ukendt argument for parameter.. Furniture requirements for MCO

<i>Item</i>	<i>Quantity</i>	<i>Specifications</i>
Office desk	18	No specification
Office chairs	25	No specification
Shelf	18	No specification
Filing Cabinet – pending files	10	Standard – with lock
Filing Cabinet - archive	50	Fire proof – with lock
Filing Cabinet - maps	5	Fire proof – with lock

2.2.6 Component 6 - Capacity Building and Training Programmes

The recommended training courses are detailed in Report 6, but a summary of the recommended training courses is given in Table 8. Planning of the training courses should consider the timing of the Verification Plan, ensuring that the staffs involved in this phase are all given the necessary skills in advance of the project. Training of the staff involved in this phase should therefore be organised as a pilot training course, enabling also adjustments of the overall training plan components to be made.

Table Fejll Ukendt argument for parameter.. Training Plan overview.

<i>Course</i>	<i>Content</i>	<i>Participant</i>
BCT 1	Basic Computer Training	Only one level for all participants
DB 1	MS Access and MRI	Managers/Head of Sub-Section Professionals
DB 2	MS Access and MRI	Technicians
MI 1	MapInfo	Managers/Head of Sub-Section
MI 2	MapInfo	Professionals Technicians
MCIMS 1	Mining Cadastre Information Management System	Managers/ Head of Sub-Section
MCIMS 2	Mining Cadastre Information Management System	Professionals Technicians
MCO 1	Mining Cadastre Office – working principles and routines	Managers/Head of Sub-Section

MCO 2	Mining Cadastre Office – working principles and routines	Professionals Technicians
MCO3	Mining Cadastre Office – working principles and routines	Secretaries
BM 1	Basic Management	Managers/Heads of Sub-Section

3. Time Schedules

The time schedules for the implementation of the Mining Cadastre Project is detailed in MS Project (and the file attached). The estimated duration of the implementation of the Strategy Components is fifteen months (Table 9). The estimate does not take in to account any delays in the implementation phase of the Project. A detailed table is attached at the end of the report.

The most critical part of the plan with respect to timing is to recruit the necessary staff and organise the required training prior to the initiation of the Verification Plan.

Table Fejll Ukendt argument for parameter.. Estimated duration of the implementation of the six Strategy Components

Component	Task	Approximate duration (months)
1	Writing Mining Act B and Regulation B	11
2	New Institutional Framework - MCO	4
3	Establishing the MCIMS	7
4	New Mineral Rights Inventory encompassing the implementation of the Verification Plan	14
5	Resource Requirements	5
6	Capacity Building and Training	6

Table Fejll Ukendt argument for parameter.. Detailed time estimates for the implementation of the Mining Cadastre Strategy

	Working days	Period	
WRITING THE MINING ACT B (Strategy Component 1)	220d	06-01-03	07-11-03
Work Planning for the Act and Regulation	30d	06-01-03	14-02-03
Writing Draft 0 - Act B	30d?	17-02-03	28-03-03
Working Seminar 1	10d	31-03-03	11-04-03
Writing Draft 1 - Act B	20d?	14-04-03	09-05-03
Working Seminar 2	10d	12-05-03	23-05-03
Presentation to the Minister	10d	26-05-03	06-06-03
WRITING REGULATIONS B	40d?	09-06-03	01-08-03
Writing Draft 0 Regulations B	20d	09-06-03	04-07-03
Working Seminar 1	5d	07-07-03	11-07-03
Writing Draft 1 Regulations B	10d	14-07-03	25-07-03
Working Seminar 2	5d	28-07-03	01-08-03
APPROVAL OF THE NEW MINING ACT AND REGULATIONS	70d	04-08-03	07-11-03
Presentation to the Minister	10d	04-08-03	15-08-03

Presentations in the Parliament	30d	18-08-03	26-09-03
Approval of the Mining Act B and Regulations B	30d	29-09-03	07-11-03

NEW INSTITUTIONAL FRAMEWORK - MCO (Strategy Component 2)

	59d?	18-03-03	06-06-03
Staff Recruitment	60d	03-02-03	25-04-03
Implementation	30d	28-04-03	06-06-03

ESTABLISHMENT OF THE MCIMS (Strategy Component 3)	210d	03-02-03	21-11-03
Planning phase	30d	03-02-03	14-03-03
Tendering phase	60d	17-03-03	06-06-03
Procurement phase	60d	09-06-03	29-08-03
Installation and tests	180d	01-09-03	21-11-03

NEW MINERAL RIGHT INVENTORY (Strategy Component 4)	281d	03-02-03	01-03-04
Planning phase	30d	04-02-03	17-03-03
Notification of the public	60d	18-03-03	09-06-03
Suspension of parts of the Mining Act	360d	04-02-03	21-06-04
Organisation of the set-up	30d	04-02-03	17-03-03
Data gathering	160d	18-03-03	27-10-03
Quality Control	160d	18-03-03	27-10-03
Entering data to the Mineral Rights Inventory	160d	18-03-03	27-10-03
Negotiations with licensees	60d	28-10-03	19-01-04
Issuing new certificates	30d	20-01-04	01-03-04

HUMAN RESSOURCE REQUIREMENT (Component 5)	44d?	03-06-03	01-08-03
	60d	03-06-03	25-08-03
	30d	26-08-03	06-10-03

CAPACITY BUILDING AND TRAINING (Component 6)	120d?	09-01-03	25-06-03
BCT 1	40d	09-01-03	05-03-03
DB 1a (Pilot)	3d	06-01-03	08-01-03
DB 1b	3d	03-03-03	05-03-03
DB 1c	3d	06-03-03	10-03-03
DB 2a (Pilot)	6d	09-01-03	16-01-03
DB 2b	6d	11-03-03	18-03-03
MI 1a	1d	11-03-03	11-03-03
MI 1b	1d	12-03-03	12-03-03
MI 2a (Pilot)	6d	17-01-03	24-01-03
MI 2b	6d	13-03-03	20-03-03
MCIMS 1a (Pilot)	3d	30-01-03	03-02-03
MCIMS 1b	3d	27-01-03	29-01-03
MCIMS 1c	3d	30-01-03	03-02-03
MCIMS 2a	6d	04-02-03	11-02-03
MCIMS 2b	6d	12-02-03	19-02-03
MCO 1a (Pilot)	3d	27-01-03	29-01-03
MCO 1b	3d	20-02-03	24-02-03
MCO 1c	3d	25-02-03	27-02-03
MCO 2a (Pilot)	4d	28-02-03	05-03-03
MCO 2b	4d	06-03-03	11-03-03
MCO 3a	3d	12-03-03	14-03-03
BM 1a	6d	02-06-03	09-06-03
BM 1b	6d	10-06-03	17-06-03
BM 1c	6d	18-06-03	25-06-03

4. Procurement of Goods and Services.

4.1. Procurement strategy

There are three types of procurement:

- MCIMS including hardware, software, development and related users' training;
- Equipment, furniture, locally provided.
- Institutional Strengthening, training, study tour;

It is recommended to prepare one Tender document for the whole MCIMS, not to divide into hardware / software or training, that create unmanageable risks of inconsistency, delay due to co-ordination issues and finally costly solution. The procurement process is a "procurement of Goods" standard Tender. The development and service to be provided is considered as a minor component in term of costs. The evaluation process should however take into consideration the quality of the service. It is proposed to evaluate the less expensive proposal (as required in the guidelines), with an "evaluated cost" adjusted to take into consideration the quality of the service (for example 10% for the training proposal, 20% for the methodology). The Bidder should then provide detailed proposal for the organisation of the training and for the methodology of development of the MCIMS functionalities.

It is recommended to use Local shopping for providing necessary equipment in domestic shops. This process induces a selection of the less expensive of minimum three quotations. This should be done with national budget, managed by the Project staff and well documented. It is recommended to order a complete set of equipment by step. The best solution should be to fully equip MCO at the first stage, then one or two ZMO, operating as a pilot installation to identify difficulties, then all others ZMOs in two or three stages. This procurement process can be implemented in two years.

It is recommended that a Service contract is signed with an International Company specialised in Mining, prospecting and training. This contract should use a Quality-Cost Evaluation Method, with 80% weight for the quality, then 20% for the cost. The quality, which is a priority issue, could be evaluated based on criteria provided to the Bidders. It is proposed that evaluation criteria could be: CV of trainers 60% (with 30% to the Team Leader), Training organisation and methodology 40%. The trainers should include specialists of all disciplines required by the training. A contract for "Consulting Services, small Assignments, Lump sum payments" should be selected to simplify the contract monitoring and give flexibility to the assignment of experts.

It is recommended that domestic training in IT software, systems or basic knowledge is organised by the Service Contract team leader using and evaluating domestic companies base on Local Shopping processes.

4.2 Prospective suppliers

Suppliers for Bid on a MCIMS are limited to Nordic companies with international experience in implementing IT advanced systems with network, Databases and GIS. An experience in cadastre is required.

The Nordic companies are:

- Denmark:** COWI
Parallelvej 2, DK-2800 Lyngby, Denmark
- Rambøll
Bredevej 2, DK-2830 Virum, Denmark
- Finland:** FM International OY
P.O. Box 14, FIN-00511 Helsinki, Finland
- Iceland:** TrackWell Software
Sudurlandsbraut 24, IS-108 Reykavik, Iceland
- HNIT Consulting Engineers
Haaleitisbraut 58-60, IS-108 Reykjavik, Iceland
- Norway:** Blom ASA
Høybråtenveien 13b, NO-1055 Oslo, Norway
- Norconsult
Vestfjordgate 4, NO-1338 Sandvika, Norway
- Sweden:** Carl Bro Sverige AB
Långholmsgatan 34, Box 9611, S-11791 Stockholm
- SwedeSurvey AB
SE-80182 Gävle, Sweden

Concerning Institutional Strengthening, comprehensive experience with respect to mineral exploration, mining, mineral rights administrative systems, and capacity building is required. The Nordic companies are:

- Denmark:** Geological Survey of Denmark and Greenland (GEUS)
Oster Voldgade 10, DK-1350 Copenhagen K, Denmark
- Finland:** Geological Survey of Finland (GTK)
P.O.Box 96, FIN-021251 Espoo, Finland

Norway: Geological Survey of Norway (NGU)
Leiv Eirikssons vej 39, N-7491 Trondheim, Norway

Sweden: Geological Survey of Sweden (SGU)
P.O. Box 670, S-75128 Uppsala, Sweden

4.3. Estimated Costs

The detailed costs of the MCIMS are provided in a table to be distributed on the Presentation Meeting 23rd October, 2002, and included in the Final Report. The costs relate to a quotation based on Technical Specifications defined in the Tender Document for Goods in the Report 7.3.

The Institutional Strengthening cost is evaluated based on foreign and domestic man-month allocated to these tasks in accordance with Terms of references described in the Tender Document for Service Contract in 7.3.

Additional cost for furniture and local supplies and facilities, including reparations, network installation, is evaluated based on a fixed amount of 10,000USD per ZMO and 30,000 USD for MCO.

The total cost of the project is evaluated as follows (in USD):

MCIMS:	
Hardware, Basic Software	280,000
Development software	100,000
Margin 10%	40,000
Total	420,000
Institutional Strengthening including local Training	180,000
Furniture, supplies, facilities (MCO and ZMO)	160,000
10% margin for the total cost	80,000
Total cost of the Project	840,000

This cost includes the counterpart funds to be allocated in the National Budget, mainly local facilities and domestic training. The total evaluated is 180,000 or 20% of the total cost of the Project.

