



**REPUBLIC OF THE  
UNION OF MYANMAR**  
**MINISTRY OF PLANNING  
AND FINANCE**



**MYANMAR MINERAL AND  
GEMSTONES CADASTRE SYSTEM  
CONCEPTUAL DESIGN**

**CONTRACT No. MEITI-CS 003/2017**

**INTERMEDIATE DIAGNOSTIC REPORT**  
**EXECUTIVE ABSTRACT**



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(CONSULTANT)  
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## **ACKNOWLEDGEMENTS**

During his visit the Consultant met officials from Ministry of Planning and Finance (MPF) linked to the EITI-Myanmar and all relevant units linked to mineral licensing activities within the Ministry of Natural Resources and Environmental Conservation (MONREC) and related agencies. The Consultant wishes to express their gratitude for the excellent cooperation of these Government officials and consultants and take this opportunity to thank all concerned staff for the assistance and hospitality given to the Consultant during his stay in Republic of the Union of Myanmar (see the list of visited agencies and officials in ANNEX I). Additionally, the Consultant benefit also of the data compiled by previous works and reports (see the list of reports in ANNEX II).

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## INTROCUCTION

Mr Enrique Ortega, Mineral Rights Cadastre Expert, visited The Republic of The Union of Myanmar from 30<sup>th</sup> October to 11<sup>th</sup> November 2017 and from 11<sup>th</sup> to 23<sup>rd</sup> February 2018 to undertake the consultancy for the conceptual design for the **MYANMAR MINERAL AND GEMSTONES CADASTRE SYSTEM**, working closely with Ministry of Planning and Finance (MPF) and the Ministry of Natural Resources and Environmental Conservation (MONREC). The main purpose of these two missions was to develop a preliminary diagnostic on the status of the system and methodology for licensing mineral rights in the Republic of the Union of Myanmar and to suggest solutions for improvement. In accordance with the prescriptions detailed in the Terms of Reference (TOR), the diagnostic was to cover an assessment of the following:

- a) Review the cartographic and geodetic basis supporting the delimitation and positioning of the mineral rights.
- b) Review the institutional organization responsible for licensing activities.
- c) Evaluation of human and technical capacities (staffing, equipment and infrastructure)
- d) Review the legal and regulatory framework prescribing and management of the mineral rights.
- e) Evaluation of the structure of the Mineral rights
- f) Review the licensing procedures in comparison with the best international practices.
- g) Evaluate the situation of cadastral information, data and files. Assess the present computerized system in reference to other systems commonly used for licensing management.

During the second mission, the main activities have been focused on:

- To visit the decentralized units of MONREC in Mandalay and Mogok, including field visits to several mining sites.
- To visit again the MONREC departments in order to improve the knowledge and understanding on the licensing procedures.
- To interact with civil society organizations and consultants developing activities related to the Myanmar mining sector.
- To explain the main findings in diagnostic and proposed solutions to the Myanmar political authorities.

This executive report contains the main findings and conclusions detected during the two missions developed in Myanmar. All the questions and problems raised here are developed and analysed in detail in separate report.

The Consultant would like to stress that this is a diagnostic report. As such, the report highlights weaknesses in the current system, detecting the most relevant issues and recommending the best solutions according to the needs of the minerals industry, the particularities of the Republic of the Union of Myanmar mining sector, and international best practice. This does not mean a simple transfer of experience from other countries to the Republic of the Union of Myanmar, because solutions adopted in one country are not directly exportable to another. In fact, the practical application of general and universally valid mineral rights cadastre principles (e.g., transparency, efficiency, non-discretion, etc.) must be carefully adapted to the circumstances of each country.

This report contains an evaluation of the Republic of the Union of Myanmar's cadastral system, cadastral organization, cadastral procedures, and available cadastral infrastructure; it is not an examination of the team engaged in the system or in the application of procedures. All the qualifications included in the report are related to the system and procedures themselves and not to the staff. The diagnostic is focused on a path for the Republic of the Union of Myanmar to implement a modern, computerized mineral rights cadastre. Given that computerization is closely related to legal, organizational, and administrative matters, the report explores relevant aspects of these issues.

Finally, the Consultant would like to remind also the meaning of the term "cadastre" for an adequate understanding of this report, because this word is still not used in the present Republic of the Union of Myanmar legal texts. In the international context, the word "cadastre" means all activities linked with licensing, including the applications, registry, granting, issuing, management, mapping, and field delimitation of mineral rights. In this report, the term "cadastre" (as well as the terms "cadastral activities," "cadastral procedures," "cadastral organization," "cadastral practice," etc.) is applied consistently with the internationally accepted concept.

## CARTOGRAPHIC AND GEODETIC INFRASTRUCTURE

The topographic maps used in Myanmar for licensing are very old, they are not compatible with GPS and the existing algorithm for transformation of coordinates is not enough accurate. The solution for these problems requires the immediate migration of the mineral rights perimeters towards a unified and modern map, where the potential overlapping can be checked without error and where it would be possible to have a complete overview of the cadastral situation of the country for all the types of licenses. This migration would imply:

1. To adopt the 1:50.000 UTM as official cadastral maps
2. To improve the accuracy of the available transformation algorithms between maps (Lambert and UTM) and GPS coordinates, using the methodology based on

polynomial transformation, facilitating the positioning of the mineral licenses on the field.

To acquire this capacity and based on the international experience in countries where faced the same type of problems, it is necessary to check if the available high accuracy geodetic network is enough to calculate the algorithm with the required accuracy. On this respect, it has been already approved by the MEITI cadastre sub-committee to propose to MONREC, with cooperation of the Survey Department, the implementation of the following sequence of activities:

1. To check if the accuracy of the presently available transformation can be improved by the calculation of a new algorithm using polynomial methodology, without additional fieldwork and merely using the existing data in the same way that it has been recently realized in Mozambique, Zambia, Nigeria, Burkina Faso and Guinea Conakry.
2. If it is not sufficient, to realize field measurements of additional points belonging to the primary geodetic network.
3. Calculation of a new algorithm.
4. Transformation and migration of the existing Lambert cadastral maps towards the new UTM maps.

All these activities should be developed under close cooperation with the Survey Department as institutionally responsible for the Myanmar geodetic network. It should be highlighted that Survey Department already accepted to cooperate in the proposed planning under condition of previous authorization of MONREC's minister.

Finally, it shall be taking into consideration that the availability of accurate transformation algorithm will represent an immediate improvement not only for licensing purposes and the improvement of the mining sector management, but also for any GPS user in the country (forest, environment, agriculture, civil works, geological mapping, etc.). Furthermore, it should be also mentioned that the proposed solution would be totally convergent and compatible with the objectives of the ONEMAP project.

## THE INSTITUTIONAL ORGANIZATION

The present institutional organization of MONREC, as ministry responsible for the management of the mining sector and in relation to licensing mineral rights, does not fulfil the international standards of separation between monitoring the activities and granting the mineral rights.

As consequence, there are potential conflicts of interest and it is not possible to guarantee the objectivity, the transparency, the equity and the fairness in decisions affecting the granting of mineral rights. This comment is applicable to the entire mining sector, but it is specially indicated to the gemstones, where the MGE commercial interests and responsibilities are intermixed with licensing and regulatory responsibilities. The only solution to correct these problems is to modify the present organization of MONREC under the following principles:

- a) To create a new unit named “Mineral Rights Cadastre” with exclusive responsibilities for licensing, including the reception and registration of applications, the verification of eligibility, checking the overlapping, evaluating for granting or submission to granting authority and maintenance of the mineral rights (renewal, transfer, extension, expiration, etc.).
- b) To take out the licensing activities from their present institutional position in DGSE, DOM and MGE, being transferred to the new “Mineral Rights Cadastre”.
- c) The unified integration of licensing procedures within the “Mineral Rights Cadastre” does not must imply a single procedure for the licensing of each mineral right, that must preserve the differences established in the present laws for standard mineral in laws.
- d) In addition, it must be established different procedures for exploration and mining rights.
- e) The statements c) and d) above, must no avoid the availability of integrated cadastral information in a unified cadastral database, SIG and cadastral maps.

## TECHNICAL AND HUMAN CAPACITIES

The present cadastral management of mineral rights in the Republic of the Union of Myanmar is far away from the international standards. In fact, many of the detected problems are closely related to the inadequate institutional organization, the ambiguous regulatory framework, the complexity of the procedures and the lack of equipment. This situation affects seriously the operational capacity of the existing resources and the quality of the management. The licensing methodology needs a deep revision in practical aspects related to the codification and filing and furthermore, the computer equipment and human skills are in need of upgrading in regard to the licensing matters. The efforts to improve capabilities must be focused on:

- Adequate use of the computer tools, mainly for database and GIS exploitation.

- Understanding of institutional cadastral concepts and modern cadastral management rules.

In the opinion of the Consultant, the required training must be developed on two different levels:

- On the job training, specifically applied to the Myanmar licensing procedures.
- Study tours to countries that have succeeded in reforming the mining sector over the past two decades and where the positive impacts derived from these reforms—where the Mineral Rights Cadastre played an essential role—have been appreciated by mining investors and led to strong sector growth. These countries must be selected based on features and scales where the experience could be transferable to Republic of the Union of Myanmar.

Based on the observations realized during the second mission, it can be stated that under the present conditions, it is impossible the accomplishment of all the inspection duties that would be required for guaranteeing the fulfilling of the mandatory obligations by the miners because the inspection capacity is very limited. International experience demonstrates that lack of adequate field control and inspection produces systematic violations of the legal prescriptions as well as a marked tendency to decrease the value of the declared mineral production (and logically, the royalties to be paid), resulting in important losses to State income and a decrease in the credibility and the security of tenure. Such limitation has also incidence in the licensing procedures, not in the case of application for new titles but for extensions or renewals, where it is necessary to demonstrate the fulfilment of the obligations prescribed in law.

Finally, it must be also highlighted that the visits realized to the MONREC offices in Mandalay and Mogok does not allowed to learn about the decentralized steps in the licensing procedures, because such activities are exclusively executed in the region / states administrations. In order to complete properly the diagnostic, this evaluation must be unavoidably developed during the third mission, especially after the recent approval of the regulations, where it the partial decentralization of some licensing responsibilities.

## THE LEGAL FRAMEWORK

The analysis of the existing legislation is strictly required in order to know the basis for current licensing conditions and to suggest the required solutions to the issues detected in the present diagnostic. From the conceptual point of view, the evaluation of the legal texts represents a substantial part of the cadastral system evaluation, not merely for procedural aspects, but also for any legal prescription affecting the mineral rights, the security of tenure and the attractiveness for investments.

In relation to the management of the mining sector, the main difference between the Myanmar legal framework and the international standards is the existence of two different laws, one for the normal minerals and other for gemstones. It should be highlighted that other gemstone producer countries (as they are for instance Madagascar, Mozambique, Tanzania, South Africa, Namibia, Colombia or Brazil) have not such legal differentiation and the gemstone are managed by a single and unified act, normally called as minerals and mining bill or mining code.

The presently enacted legal texts (laws and rules) have substantial gaps and ambiguities in relation to the international standards, making impossible an efficient and modern management of the licensing activities and affecting the transparency as well as the security of tenure and the attractiveness of the Myanmar mining sector for investments. Nevertheless, the present situation, where the recently amended laws have been not yet complemented with regulations, open an excellent opportunity to correct some of the detected gaps and to modernize the licensing methodology introducing corrections and improvements in the draft rules under preparation. In addition, this situation would give the opportunity to integrate the licensing procedures for gemstones and minerals in a unified scheme, allowing the coordination and harmonization and avoiding overlapping problems. In the Consultant's opinion and based on the international experience, the aspects or items below (restricted to the issues related to licensing and cadastre) that can be corrected or improved in new regulations are listed:

- To introduce of clear institutional definitions of the Minerals Rights Cadastre, describing in detail their functions and responsibilities, and establishing the "Cadastre" as the unit with exclusive responsibilities for licensing, including the reception and registering of applications, the cadastral evaluation of the application and communication with applicants and holders in relation to any matter related to the mining rights, correcting the present situation where responsibilities are ambiguously split between several departments.
- To declare explicitly that information concerning the mineral rights (including the positioning on the maps) should be public and transparent, open for public consultation.
- To introduce objective criteria to be applied for evaluation of the applications to the mineral rights, in order to avoid subjective and discriminatory decisions for granting or refusal (as for instance minimum spend rules depending on size of concession as a minimum amount of dollars to be spent per year in each granted hectare), increasing the security of tenure.
- To remove the ambiguities about the application of tender bids, prescribing in detail when a license should be granted by auctioning or by first come, first served, and giving details also about the procedures to be followed for bidding. For instance, tendering will be applicable in the special cases of the areas where the resources have been discovered by the State or where the



information corresponds to the public domain. Regulations must provide also details about when and how to initiate auctioning, how to organize auctions and the requirements which should be published in advance in order to guarantee the transparency. In addition, as one of the standard licensing procedures, it should be the Mineral Right Cadastre's responsibility to initiate, develop, and grant the corresponding license.

- To introduce a better differentiation between licensing procedures for prospection / exploration and mining because they have very different requirements, needs and conditions (registration of priority, duration, receivability, risk of violation of confidentiality, etc.).
- To introduce specific cadastral procedures for creation of gemstone tracts and reserved zones, preserving the rights of existing titleholders and previous applicants.
- To prescribe standard conditions for the licenses (duration, exclusivity, fees, state participation, etc.), avoiding negotiations for agreements. International experience demonstrated that standard prefixed conditions are the best solution to avoid discretion, subjectivity and corruption, increasing transparency and security of tenure.
- To establish the obligation to submit applications personally and the mandatory use of a paper registry (ledger or log-in book) exclusive for cadastre purposes, where only the applications for mineral licenses should be registered, including the double signature (applicant and cadastre agent).
- To determine without ambiguities the conditions (minimum data and information) for considering receivable an application, avoiding ambiguities and discretionary decisions.
- To restrict the application of Mineral Feasibility Study Permit to the holders of exploration permits and the areas explored during the period validity of the license.
- To introduce different level of activities (large, medium or small scales) also to facilitate the possibility the exploration projects. Under the present regime, all the scales are mixed under the same procedure, avoiding the adequate treatment and monitoring in relation to the size of the granted area and the scale of the operation. Furthermore, the present types of license, the activity is practically restricted to the areas where the presence of gems is known since decades ago and there are not exploration activities searching for new deposits or new potential areas.
- To include the cartographic and geodetic bases for the precise positioning of the mineral rights, prescribing the technical parameters to be used

(coordinates, projection, spheroid and datum) in order to guarantee their uniform positioning, to avoid overlapping conflicts and to optimize the land management, adopting the 1:50.000 maps as cadastral maps and the UTM as cadastral coordinates.

- To introduce geometry restrictions for licenses, permits, tracts and blocks, avoiding the application and granting of aberrant or inadequate geometries, as for instance polygons containing empty spaces or polygons linked by their respective corners.
- To precise details about the procedures to be followed in several cadastral operations which are frequently required in the management of the mineral rights, as for instance the amalgamation between adjacent licenses or the division (splitting) of one licence in several titles, because the present legal framework is silent about such possibilities.

In the Consultant's opinion, it is extremely difficult to correct adequately the deficiencies listed above by simple amendments and it would be advisable to consider as option (if really it is desired to develop the mining sector) to consider the possibility for drafting a complete new legal framework, unifying gems and minerals in a single context, establishing the institutional basis for a mineral rights cadastre and implementing licensing procedures consistently to the international standards.

## STRUCTURE OF THE MINERAL RIGHTS

The structure of the minerals rights in Republic of the Union of Myanmar is far away from the international standards and the present situation is artificially complex, making difficult the cadastral management, affecting the security of tenure and constraining the attractiveness of the country for investments. Unfortunately, the recently amended laws and the existing draft regulations are not correcting the detected problems.

However, taking into consideration that the law is silent in relation to these issues which are prescribed in the regulations, it would be relatively simple to improve the mineral rights structure by improvement of the draft rules in the following items:

- a. To increase the maximum size of the prospection licenses, allowing the development of modern large - scale prospection based on high - tech technology as airborne geophysics or remote sensing.
- b. To increase the minimum size of the small scale mining and gemstone licenses, adopting the international standards for a prefixed cadastral grid.
- c. To increase maximum allowed validity period for the exploration permits until 9 – 10 years, consistently to the world average duration for an exploration project and reducing the risk linked to advance the decisions

for transformation into mining project.

## THE CADASTRAL PROCEDURES

The present methodology for licensing does not guarantee the rights of applicants and titleholders because is not transparent, is not efficient and do not preserve the priority. This situation creates double damage: for the administration (because of loss of credibility and rigor) and for the applicant because there are risks of losing priority and the discovery rights. The present bad practices may be undoubtedly the origin of cadastral problems and conflicts, and furthermore is affecting very negatively the attractiveness of the Republic of the Union of Myanmar for investments. Consequently, it is strongly recommended to modify the present licensing sequence in line with international standard methodology.

It should be reminded that some of procedural problems are created by the legal vagueness resulting from the Law and regulations; in particular the lack of specific criteria for evaluation of applications before granting introduces serious risks for security of tenure. Gaps in the institutional organization and the legal texts are transferred to the present licensing practice, and decisions for rejecting or granting are taken in the absence of precise guidelines on how to avoid subjective or potentially discretionary criteria. Additionally, the licensing procedures would be easily improved in conceptual and practical matters by implementation of simple changes, totally compatible with the existing legislation, as they are for instance:

- To make accessible to the public the cadastral maps and cadastral information, allowing to the applicants to know in advance the vacant areas available for new applications.
- To implement different procedures for the application for prospection, exploration and mining rights.
- To implement improvements in the registration methodology, introducing a model of Registry book able to be signed by the applicant and the Administration representative.
- To concentrate all the cadastre documents in a single and exclusive archive, where all the documents related to the licenses should be stored. For the normal daily work, the required information should be accessed digitally from the databases (when available), and when it is required to check or to consult the paper dossiers, such consultation should be realized in the archive, without withdrawing any document.
- To issue an application certificate immediately after the registration in order to provide to the applicant an official acknowledgement of receipt, duly stamped and signed, transmitting security on the chronology of the application.

- To improve de design of the licensing procedures, fixing deadlines in the intermediate steps in order to avoid unlimited waiting periods and avoiding also that MONREC loss of control when the dossier is transferred to the of the region / states administration.
- To improve de design of the licensing procedures, guaranteeing the respect of the legal texts and avoiding discretionary decisions without legal basis, as for instance the differentiation between large scale and small scale exploration licenses, or the arbitrary interpretation of articles 83 and 84 in Regulations, making mandatory the signature of a joint venture implying a “Production Shared Contract” and the acceptance of gratuity in the State participation. This mandatory condition has not legal basis and in practical represents an additional tax and the violation for the security of tenure, discouraging investments.
- To concentrate the cartographic position of all the existing rights in a single, unified and updated cadastral map based on UTM coordinates, allowing the adequate verification of overlapping. Such map must contain furthermore all the pending applications, as well as the areas restricted to the mining activities and the reserved zones (which presently are only the tracts for gemstones).
- To establish predefined deadlines for the intermediate steps in procedures, avoiding undefined waiting periods, uncertainties and discouragement of investors.
- To adopt an adequate codification methodology based on a single and unique numeric sequence, integrating all the types of licenses, and the file all the cadastral documents in single archive, being classified following this numeric code.

## STATUS OF THE CADASTRAL DATA AND LICENSING SITUATION

Table I shows the information corresponding to the whole of mineral rights existing presently in Myanmar, integrating the gemstone permits and the standard mineral licenses. The total number of permits (16,625) may give the impression that, consistently to the international standards, it is an intermediate scale cadastre, with a number of licenses adequate in relation to the size of the country.

However, a detailed analysis of the percentages distribution for each type of license shows (by comparison with the international standards) extremely anomalous values:

- The number of licenses for large scale exploration of standard minerals is only the 0.1 % of the existing permits.

- The number of mining licenses for standard minerals is more than two times the number of exploration licenses. In addition, more than two thirds of the mining licenses correspond to small scale permits.
- The gemstones permits are nearly the 95 % of the licenses, but such extremely high percentage represents merely 118 km<sup>2</sup>, i.e. less than the 0.0002 % of the country.

License	Type	Number	%	% Total
Prospection		0	0,0	0,0
Exploration	Large scale	24	1,9	0,1
Exploration	Small scale	368	29,6	2,2
Mining	Large scale	153	12,3	0,9
Mining	Small scale	633	50,8	3,8
Mining	Subsistence	39	3,1	0,2
Mining	Feasibility	28	2,2	0,2
<b>Total Standard Minerals</b>		<b>1.245</b>	<b>100,0</b>	<b>7,5</b>
Gem	Private	15.016	97,6	90,3
	Joint venture	364	2,4	2,2
<b>Total Gems</b>		<b>15.380</b>	<b>100,0</b>	<b>92,5</b>
<b>TOTAL</b>		<b>16.625</b>		<b>100,0</b>

Table I

This situation and these percentages are really unusual and very different by respect the standard values. The distribution of the different types of licenses evidenced a very anomalous situation of the licenses, with a great predominance of the small scale activities, a very low rate of exploration projects and minimum occupancy of the available territory. In the Consultant's opinion this situation is clearly related to the inadequacy of the present structure of the mineral rights (too short duration for exploration and too small size of the permits) and the lack of security of tenure of the present licensing procedures. The combination between these parameters creates a low attractiveness atmosphere for the development of the mining sector and gives rise to the present regrettable situation, where the Myanmar territory remains underexplored and the development of the mining sector is not proportional to the geologic and metallogenic potential.

In relation to the status of the cadastral data and documents, based on the previous statements and taking into consideration also the analysis realized in chapter 8, it can be concluded that the situation of the cadastral information is secured from the physical point of view, because the documents and the information are properly surveyed and maintained, and consequently there is no risk for losing or damaging documents. However, the methodology applied for coding and filing documents

impedes the adequate, efficient and modern management and exploitation of the available information.

#### ADDITIONAL COMMENTS

As complementary information and in order to access to a more complete vision of the Myanmar mining sector, the Consultant revised also other documents, directly or indirectly linked to the licensing activities:

- The MEITI reconciliation report 2014-2015 (draft version 240118), commenting the absence of legal basis for mandatory joint ventures and the problems linked to the tender bids if they are adopted as standard method for granting.
- The Draft mining policy, including comments about the role of the State in exploration activities and the scale of the information to be acquired, the needs for differentiation between exploration and mining activities, the required caution in relation to the use of the term “online” in public websites, and the need of stable resources to guarantee the sustainability and the adequate management of the mining sector.
- To illustrate the best international experience to conciliate the relationships between cadastral information and ownership beneficiary. The design and the conception of the cadastral database must facilitate the access, in a transparent way, to the information related to the ownership beneficiary as required by EITI concepts, including the shareholders names and their respective percentage of participation, as well as the total number of existing shares.
- The NRGi Myanmar Resource Briefing on natural resource federalism, commenting the needs to differentiate adequately in the analysis the differences between exploration and mining activities, especially in relation to the licensing and potential interferences with land-use.
- To suggest the conceptual basis to conceive a strategic plan for the Geology Department, in order to reorient its institutional responsibilities towards the present social demands, considering also the needs for a clear and unambiguous policy for data diffusion.

#### PRELIMINARY IDEAS ABOUT THE ROADMAP TOWARDS THE NEW COMPUTERIZED CADASTRE

The situation of the licensing activities and the cadastral information in Myanmar requires urgent changes in several essential components affecting the application and granting of the mineral rights, as they are:

- a) To provide an accurate and reliable cartographic basis. This work is convergent with the on-going ONEMAP project.
- b) To integrate the cadastral information in a depurated and unified database (pre-cadastre). This work is convergent with the on-going NRG I project.
- c) To improve the draft regulations.
- d) To improve the institutional organization, creating a specific unit named “cadastre”.
- e) To develop and to implement new licensing procedures
- f) To computerize the new procedures

However, the required changes cannot be implemented simultaneously and taking into consideration the particular situation of Myanmar and the present circumstances of the different departments participating in licensing activities, it is recommended to implement a progressive and sequential approach.

However, the final design of the implementation sequence as well as the required implementation strategy will be conditioned by the level of commitment at political level to adopt the proposed changes. Obviously, the final cadastre design and new procedures cannot be the same if the new Cadastre department is created or no. However, during the present mission it has been stated the favourable position at uppermost level in MONREC in relation to the creation of this cadastre unit and it has been agreed to accelerate the access to an accurate and reliable cartographic basis and to initiate immediately the Pre – Cadastre activities. The objective of the pre – cadastre is to create a complete and “clean” database (graphic and alphanumeric, linked into a GIS) where it should be properly loaded and codified all the existing mineral rights, as well as the pending applications. All the information will be properly re-codified and filed.

Based on the practical experiences in other countries, the more operational methodology to prepare the databases and to develop the activities described above is to create a working group, selecting the adequate members among the agents presently engaged in licensing activities (GSED, DOM and GED departments). These agents should be released of all the present responsibilities and duties and be devoted exclusively to the pre-cadastre activities. The selected agents must be experienced in licensing activities, having a deep knowledge of the present procedures. In addition, at least one of them must have knowledge or capacity on database and GIS software, topography or surveying (including use of GPS) and analysis of legal and regulatory texts

Complementarily, it would be advisable to have the support of an external expert, hired in Myanmar or in the region, experienced in design and configuration of

computerized applications based on PC platforms with data base applications integrated with of data banks and geographical information system (GIS) applications related to the integrated treatment of alphanumeric and graphic data for mining or earth's sciences in a GIS. The presence full time of this expert is not required, but he must visit periodically the local working group.

In order to facilitate the activities of the pre-cadastre working group, it will be habilitated a working space (pre – cadastre office) where they will have access to the required office tools (furniture, boards, copy machine, etc.) and computers linked by a local network, internet access and printer. It will be required within this working space a copy of the essential licensing documents for each title or pending application, as for instance the application form, granting letter, etc. The activity of the pre-cadastre working group will be developed in two steps:

- Phase 1, focused in all the licenses or pending applications for standard minerals and gemstone existing outside the gems tracks.
- Phase 2, focused on the gemstone licenses and pending applications inside the tracks. It would be advisable, in order to avoid duplications and to make shorter the creation of the database, to harmonize this activity with the work presently being developed by NRGi on this respect.

The development of the pre-cadastre activities will be profited as “training on the work” and, as well as the proposed reorganization of MONREC will be achieved and the new Cadastre department will be created, the pre-cadastre team will be assigned to the new department, and the licensing responsibilities presently under responsibility of GSED, DOM, GED, Mineral I and Mineral II departments will be transferred to the new cadastre department.



# **ANNEX I**

## **VISITED AGENCIES AND OFFICIALS**

### **PARLIAMENT**

- U Soe Thura Tun, Chairman, Committee for Resources and Environmental Conservation.
- U Kyaw Thiha, Chairperson, Committee for Resources and Environmental Conservation, Upper House.
- Sa. Khin Zaw Linn, Secretary, Committee for Resources and Environmental Conservation, Upper House.

### **MPF**

- Khin Khin Lwin, Director, MPF
- Sun Win, Deputy Director, MPF

### **MONREC**

#### **Department of Geological Survey and Mineral Exploration**

- Ye Myint Swe, Director General
- U Kyaw Din, Deputy Director General
- Toe Aung Kyaw, Director
- Toe Aung Kyaw, Specialist
- Myint Soe, Director
- Zaw Lin Aung, Director
- Kyi Shein, Deputy Director
- Tun Tun Oo, Deputy Director
- Athar Hlaing, Deputy Director
- Aung Naing Oo, Assistant Director
- Zaw Min Lwin, Assistant Geologist

#### **Department of Mines**

- Khin Latt Gyi, Director General
- Kyaw Thet, Deputy Director General
- Ahnt Soe Yin, Deputy Director
- AungMyat Thu, Deputy Director, Mining Enterprise No 1
- Aye Min Tan, Geologist, Mining Enterprise No 1
- Zaw Myint Oo, Geologist, Mining Enterprise No 2
- Kyaw Zaw Htun, Assistant Geologist
- Hla Win, Head of Account Office, Mining Enterprise No 1
- Daw Ngo Ngo Lai, Account Officer, Mining Enterprise No 2

**Department of Mines (Mandalay Regional Office)**

- Soe Aung, Deputy Director
- Sitt Sane, Mining Engineer

**Myanmar Gems Enterprise**

- Ye Htut, Director (Nay Pyi Taw)
- Myo Naing, Director (Yangon)
- Than Zaw Oo, Deputy Director, Emporium
- Thet Khaing, Deputy Director, Licensing
- Min Kyi, Deputy Director, Emporium (Nay Pyi Taw)
- Min Thu, Deputy Director, Commerce (Jade)
- Khun Htay Kyaw, Deputy Director, Management
- Htate Tin Naing, Deputy Director Budget and Audit
- Thein Soe, Assistant Deputy Director Licensing
- Tin Yu, Assistant Deputy Director Licensing
- Aung Myint, Assistant Deputy Director, Commerce (Jade)

**Myanmar Gems Enterprise (Mongok sub-region office)**

- That Zaw Oo, Deputy General Manager
- Ko Ko Win Myint, Assistant General Manager

**Survey Department**

- U Than Hlaing, Director General
- Thet Oo, Deputy Director General
- Aung Moe, Director Geodetic & Survey Division
- Thant Sin Oo, Deputy Director
- Htay Hlaing, Deputy Director
- Mg Mg Latt, Assistant Director

**Forest Department**

- Myat Su Mon, Assistant Director RS & GIS Section

**MYANMAR EITI**

- Aung Khine, Deputy National Coordinator
- Kyaw Thet, Deputy Director General, Department of Mining
- Shwe Win, Alternate, Myanmar Gems Enterprise
- Saw Mi Bway, Doh Tun, CSO (MATA)
- Naing Lynn Htut, CSO (MATA)
- Aung Kyaw Hlaing, Private Company Representative
- Khin Maung Han, Private Company Representative

- Htoo Aung, Observer, MATA
- Khin Pa Pa Khaing, Assistant Director, MPF
- Shwe Yi Win, Staff Officer, MPF
- Shona Kirkwood, Consultant, World Bank
- Tinzar Tun, National Consultant, World Bank
- Soe Win, National Coordinator, NCS
- Aung Khine, Deputy National Coordinator, NCS
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- Pyay Thar Kyaw, IT & Outreach Officer, NCS
- Thinn Yadanar Su, Communication Manager, NCS
- Aye Chan Wai, Communication Assistant, NCS
- Kyaw Thinn Maung, Program Assistant, NCS
- Soe Thiha Naing, Admin Officer, NCS
- Khin Saw Htay, NRG
- Hosana, NRG
- May Mya Thet, NRG

#### **NRGI**

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- Hosana Chay, Myanmar Associate
- Daw Khin Saw Thay, Myanmar Associate

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#### **ADVANCING LIFE & REGENERATING MOTHERLAND (ALARM)**

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#### **ONEMAP MYANMAR**

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#### **MYANMAR CENTRE FOR RESPONSIBLE BUSINESS**

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- La Min Win, Director, Valentis.
- Lachlan Foy, Head Commercial Affairs, Valentis.

# **ANNEX II**

## CONSULTED DOCUMENTS

- **Adam Smith International.**- Institutional and Regulatory Assessment of Regulatory Industries in Myanmar
- **Artieda, J.**- Baseline report on Mineral Cadastre in Myanmar.
- **Artieda, J.**- Mining Cadastre Myanmar EITI Support
- **Artieda, J.**- Artieda Proposed Methodology and Roadmap for Cadaster Development.
- **Chorn Nak** - Assessment of Myanmar - Mineral Cadastre Management and Data Quality.
- **MCRB.**- Myanmar Mining Sector Wide Impact Assessment (Limestone, Gold and Tin).
- **MEITI** reconciliation report 2014 - 2015 (draft)
- **NRGI.**- Myanmar Resource Briefing. Natural resource Federalism (considerations for Myanmar).