Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Mozambique Office: November, 2025

Country Name	The project on Capacity Development in Mineral Resources Sector
Republic of Mozambique	

I. Project Outline

Background	In Mozambique, private companies have played a leading role in developing mineral resources, especially coking coal in Tete Province and natural gas in the Rovuma gas field, located in offshore of Palma in Cabo Delgado Province. The country had a high potential of mineral resources that had not yet been developed on a large scale. While the main development projects had been carried out by foreign investment, the country's governmental agencies lacked the knowledge and systems to promote and manage such development since large-scale development had not been carried out for a long time. In addition, due to the country's limited capacity for education and human resource development in the field of natural resources, foreign companies had to hire overseas personnel because of the shortage of domestic engineers. Therefore, it was essential to develop human resources in the public, academic and private sectors that would contribute to sustainable resource development and management to achieve economic growth.		
Objectives of the Project	Through i) clarification of direction for education and study, ii) installation of equipment for education, iii) implementation of education and study based on the clarified policy, the project aims at progress of the level of professional courses at Eduardo Mondlane University (Universidade Eduardo Mondlane: UEM) and Higher Polytechnic Institute of Tete (Instituto Superior Politécnico de Tete: ISPT) to the global standard, thereby contributing to improvement of technical level of geologists and mineral resources engineers in Mozambique to the global standards and reaching its effects to all quarters. 1. Overall Goal: Technical level of the geologists and the mineral resources engineers in Mozambique meets to the global standard, and its effects consequently reach to all quarters. 2. Project Purpose: Level of professional courses at UEM and ISPT are progressed to the global standard.		
Activities of the Project	1. Project Site: UEM and ISPT 2. Main Activities: i) Developing contents and activity plan for domestic/overseas training and education, ii) Selecting and installing equipment for education and study environment, iii) Implementing domestic and overseas trainings, and so on. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 14 persons 2) Trainees received: 19 persons 3) Equipment: Stereo microscopes, Mirror stereo stereoscopes, Laboratory constant temperature, Electronic muffle furnace, Chemistry apparatus, Simultaneous Themogravimetry, Differential thermal analyzers, and so on. Mozambiquan Side 1) Staff allocated: More than 8 persons 2) Facility: Office space, existing equipment		
Project Period	(ex-ante) 2014 – 2019 [60 months] (actual) April 2015–December 2019 [57 months]	Project Cost (Japanese side only)	(ex-ante) 190 million yen, (actual) 254 million yen
Implementing Agency	Ministry of Mineral Resources and Energy (MIREME), UEM and ISPT		
Cooperation Agency in Japan	Japan Coal Energy Center (JCOAL, renamed to Japan Carbon Frontier Organization in April 2023), Mistubishi Materials Techno Corporation (MMTEC)		

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

[Verification of the achievement level of the Overall Goal]

The Indicator 3 for the Overall Goal is “employment rate of relevant companies” without clear definition including the numerator and the denominator. Therefore, the indicator was verified by the number of employments in each related company.

[Verification of continuation status of the project effects]

Indicator 1 for the Project Purpose was verified as factors affecting the achievement level of the Indicator 1 for the Overall Goal. The Indicator 2 for the Project Purpose was verified as a part of the institutional/organizational aspect of Sustainability and the Indicator 3 for the Project Purpose was verified as a part of the financial aspect of Sustainability.

1 Relevance/Coherence

[Relevance]

<Consistency with the Development Policy of Mozambique at the Time of Ex-Ante Evaluation >

The project was consistent with the development policies of Mozambique, such as the “Five-Year Plan” (2010-2014) aiming to promote of sustainable mineral resource development and exploration at the national level, and “The MIREME Strategy for Human Resource Development in the Mineral Resources Sector” (2010-2020) prioritizing capacity building and human resource development, including in educational institutions, at the time of ex-ante evaluation.

<Consistency with the Development Needs of Mozambique at the Time of Ex-Ante Evaluation >

The project was consistent with the development needs of Mozambique at the time of ex-ante evaluation. As mentioned in the

"Background", although Mozambique has high potential of mineral resource development, it depended on not only foreign direct investment but also foreign engineers because of the shortage of domestic engineers. Therefore, it was essential to develop human resources in the public, academic and private sectors that would contribute to sustainable resource development and management to achieve economic growth.

<Appropriateness of Project Design/Approach>

The project design/approach was appropriate. The project approach was appropriate in the sense to lead capacity building by training future lectures and build-up research capacity at the Department of Geology. With regards to human resource capacity training, the Department of Geology has been given opportunities to select proper candidates according to the interest and availability of the personnel. No problem attributed to the project design/approach was confirmed.

<Evaluation Result>

In light of the above, the relevance of the project is ③[1].

[Coherence]

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy to Mozambique at the time of ex-post evaluation. In February 2012, the governments of Japan and Mozambique agreed to strengthen their relationships in the natural resources sector. Based on the agreement, both countries have been supporting human resource development in the public and private sectors through the "Five-Year Plan for the Development of Mozambique's Coal Industry". In addition, at the Japan-Africa Ministerial Conference on Natural Resources and the Fifth Tokyo International Conference on African Development (TICAD V) as well as during the Prime Minister Abe's visit to African countries including Mozambique in January 2014, the government of Japan expressed its support for human resource development in the mineral resource sector in Africa[2].

<Collaboration/Coordination with JICA's other interventions>

The collaboration/coordination between the project and the JICA's other intervention, "the Human Resource Development and Human Network Strengthening in the Mining Sector for Sustainable Mining Development (the KIZUNA Program)" was planned at the time of ex-ante evaluation and was implemented, the positive effects were confirmed at the time of ex-post evaluation. Long-term trainees under the Program were trained as candidates of teaching staff for mineral resource development. The KIZUNA program has worked well with laboratory analytical facility enhancement at UEM.

<Cooperation with other institutions/ Coordination with international framework>

Any cooperation/coordination with other institutions was not clearly planned at the time of ex-ante evaluation or during the project period.

<Evaluation Result>

In light of the above, the coherence of the project is ③.

[Evaluation Result of Relevance/Coherence]

In the light above, the relevance/coherence of the project is ③.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the Time of Project Completion>

At the time of project completion, the Project Purpose was partially achieved. The number and type of study on campus increased at ISPT but not increased at UEM (Indicator 1). Also, the number of instructors and technical staff on campus increased at ISPT but not increased at UEM (Indicator 2). In terms of on campus budget (Indicator 3), UEM increased their budget for collaborative research, training and mobility activities funded by several donors while ISPT did not increase their budget.

<Continuation Status of Project Effects at the Time of Ex-Post Evaluation>

By the time of the ex-post evaluation, the project effects have been continued. The joint research projects between UEM or ISPT with other domestic universities, overseas universities and domestic companies have been continuously conducted.

<Status of Achievement of the Overall Goal at the Time of Ex-Post Evaluation>

At the time of ex-post evaluation, the Overall Goal has been partially achieved. While UEM increased the number of collaborative research project with domestic universities and company as well as overseas universities for the period from 2019 to 2022,

ISPT decreased the number of collaborative research projects for the period from 2019 to 2020 due to the COVID 19 but the number increased in 2021 and 2022 (Indicator 1). In terms of the number of research outputs at the academic societies (Indicator 2), UEM constantly published the papers on an upward trend and ISPT increased papers despite of the lack of data. In terms of employment of graduates in the relevant companies (Indicator 3), ISPT increased it for the period from 2019 to 2022 but UEM did not have data.

<Other Impacts at the Time of Ex-Post Evaluation>

Some positive impacts related to gender were observed at the time of ex-post evaluation. At UEM, one female staff who was engaged in the project obtained Ph.D. degree through the project. According to ISPT, the number of female students in the Mining Engineering courses at ISPT increased because the project promoted gender diversity in the mining field.

No negative impact on natural environment was confirmed.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is ②.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results	Source
(Project Purpose) Level of professional courses at Universidade Eduardo Mondlane	Indicator 1 Increase rate of number and type of study on campus	Status of the Achievement (Status of the Continuation): partially achieved (continued) (Project Completion) - UEM: There was no additional Curriculum development	Answers to the questionnaire by UEM and ISPT

[1] ④ : very high, ③ : high, ② : moderately low, ① : low

[2] "Japan's Assistance Package for Africa at TICAD V", Project Outline Sheet

(UEM) and Instituto Superior Politécnico de Tete (ISPT) are progressed to the global standard.		supported by the project - ISPT: the number and type of face-to-face studies increased at ISPT, reflecting the positive impact of the complementary curriculum modified by the project during the implementation. (Ex-Post Evaluation) Refer to the Indicator 1 for the Overall Goal	
	Indicator 2 Increase rate of instructor and technical stuff on campus	Status of the Achievement (Status of the Continuation): partially achieved (continue) (Project Completion) - UEM: Not hiring new staff for more than five years - ISPT: The number of instructors or teachers increased within the scope of this project, not just the number of teachers but instructors with master's degrees and trained for laboratory practical classes, as well as teaching and research. (Ex-Post Evaluation) Refer to the institutional/organizational aspect of Sustainability.	Answers to the questionnaire by UEM and ISPT
	Indicator 3 Increase rate of on campus budget	Status of the Achievement (Status of the Continuation): partially achieved (continued) (Project Completion) - UEM: collaborative research, training and mobility activities funded by several donors. The main funding come from SIDA, EU-ERASMUS +, FNI (Mozambican Research Foundation) - ISPT: The budget for face-to-face class/research activities at ISPT did not increase during the project due to numerical insufficiencies (Ex-Post Evaluation) Refer to the financial aspect of Sustainability.	Answers to the questionnaire by UEM and ISPT
(Overall Goal) Technical level of the geologists and the mineral resources engineers in Mozambique meets to the global standard, and its effects consequently reach to all quarters.	Indicator 1 Increase rate of number and type of inquiry for collaborative study and research from domestic/overseas universities, institutes and/or the related companies	Status of the Achievement: partially achieved (Ex-Post Evaluation) - UEM: Collaborative research with domestic university and overseas university increased 1 in 2019 to 3 in 2022, respectively. - ISPT: The number of collaborative projects decreased from 22 in 2019 to 2 in 2020 and 8 in 2021 due to the pandemic of COVID 19 but increased to 12 in 2022.	Answers to the questionnaire by UEM and ISPT
	Indicator 2 Increase rate of research output at international academic societies and/or the related associations	Status of the Achievement: achieved (Ex-Post Evaluation) - UEM: The number of publications with UEM co/authorship remained 1-3 per year for the period from 2019 to 2022 but on upward trend. - ISPT: Although there is no data available, research output in national academic societies and related associations has increased significantly due to the project.	Answers to the questionnaire by UEM and ISPT
	Indicator 3 Employment rate to relevant companies	Status of the Achievement: partially achieved (Ex-Post Evaluation) - UEM: No data available but in general, the number of employment in Mozambique decreased on last 2 years on the extractive industry - ISPT: The number of alumni employed in mining relevant companies increased from 100 in 2019 to 315 in 2022 because of improvement of the quality of teaching at ISPT as a result of the project.	Answers to the questionnaire by UEM and ISPT

3 Efficiency

The project cost exceeded the plan (the ratio against the plan: 134%) due to the combined factors, but the project period was within the plan (the ratio against the plan: 95%).

	Project Cost (Japanese side only, yen)	Project Period (months)
Plan (ex-ante)	190 million	60
Actual	254 million	57
Ratio (%)	134%	95%

Outputs were produced as planned/ partially produced/ not produced.
In the light above, the efficiency of the project is ③

4 Sustainability

<Policy Aspect>

"The Ministerial Diploma nr. 63/2020" (November 2020) approving the Internal Regulations of the Ministry of Mineral Resources and Energy", determines that the ministry's human resources department shall propose the resource development policy of human resources in the sector. According to the mineral resources policy and strategy, one of the main objectives of this policy is the development of human resources increasing the number of trained staff equipped with skills compatible with demand and reduce the dependence on expatriate labor. Based on this objective, it was defined as one of the main lines of action within the scope of this policy: ensure the training of specialized professionals in the mining sector, especially geologists, geophysicists, geochemists, mining engineers, of oil exploration and processing, as well as in auxiliary areas such as contract negotiation, auditing and administration of the legal regime and taxation of the mineral resources sector.

<Institutional/Organizational Aspect>

(UEM)

It is capable to manage the faculty both at academic and administrative realms. At same time it is capable to envisage the mid and long -term development of the faculty of within the context of "UEM 2018-2028 Strategic Plan". UEM offers undergraduate and post-graduate courses in Natural Sciences, Mathematics and Computing remain highly attractive to society and therefore it is designing new courses to respond to the current market demands. The lecturers and technical staff on their daily duties shave responsibility to promote the Department/faculty activities. Currently, the Department of Geology has a total number of 21 lecturers. UEM is developing a HR Development Plan which will be implemented as one of the pillars for its transformation into a Research University. It also should be noted at Faculty level there is a program supported by Sweden for training its staff to MSc and PhD level. The network with other universities creates opportunities for it to access funds and resources available from the international donors/funding agencies.

(ISPT)

ISPT changed the organizational structure during the project. Previously, the beneficiary laboratories were contracted by the scientific research center for technological resources and were transferred to the Mining Engineering Division. This change was made to align the laboratories' functionalities with the Division's specific objectives. Furthermore, there is an additional prospect of building a dedicated warehouse for laboratory accommodation, demonstrating an ongoing commitment to the infrastructure necessary for the sustainability of the activities related to the project. However, it is not possible to receive a number greater than or equal to 5 though the laboratory previously received more than 15 students. With the pandemic of the COVID 19, there were difficulties in receiving intern students, as well as finalists to the end the course due to covid19. but even so to overcome the fact that reduces the number of users and interspersed to guarantee everyone's participation, both for teaching (laboratory practical classes) and research. It is likely that the current organizational structure will be sustained in the future, mainly due to the direct integration of laboratories into the Mining Engineering Division, which optimizes functionality and aligns activities with the institution's objectives. The imminent construction of the warehouse will complement this integration, providing a dedicated and improved environment for laboratory practices. This is expected to not only strengthen operational sustainability, but also bring additional benefits to the institution, promoting effectiveness and excellence in activities related to the system/model introduced by the project. There are (5) laboratory technicians divided (2) for the Mineral Processing Laboratory and (3) for the Chemistry Laboratory. ISPT has a number of teachers who have received scholarships for master's and doctoral programs, both inside and outside of the country. The network with other institutions has contributed positively to the process of technical training for teachers and laboratory technicians, enabling the quality of teaching. In September 2025, a new Master's degree course on "Sustainable Mining" which includes partnership with Akita university and universities in Zambia and South Africa was established by effort of teachers who studied through KIZUNA program.

<Technical Aspect>

(UEM)

The lecturers and technical staff trained by the project have sustained the knowledge and skills. The skills obtained by the project have been transferred among lecturers and students. There are instruction manuals that have been used to operate the instrument. Additionally, based on these manuals tutorial hand notes have been prepared to help users on their work. The manual will assist on the knowledge transfer from lecturers to students.

(ISPT)

The competencies of the staff cover activities carried out in laboratories, as well as in other fields of teaching and research. This ensures a comprehensive approach and planning in the ongoing promotion of project initiatives. Their skills and technical knowledge are likely to be sustained, as staff dedicated to teaching and research, especially in practical laboratory activities, are continually ensuring they are updated. Participation in various training programs related to the subject guarantees the maintenance and continuous improvement of their skills, thus ensuring the sustainability of skills to promote and maintain project-related activities in the long term. Ongoing education and training programs have been established to ensure the effective operationalization of laboratory practices. In addition, a procedure manual for the equipment was created to provide a practical and detailed references that support the necessary technical level, skills and knowledge. These initiatives reinforce the commitment to maintaining and constantly improving the team's skills, which contribute to the sustainability of the project-related activities. Due to firm institutional commitment, evidenced by allocated resources and ongoing support, the training system is highly likely to be sustained. Training programs have been constantly adopted to changes in laboratory practices and incorporate iterative feedback in order to ensure the continued relevance of acquired skills. Periodical reviews of the equipment procedure manual reflect attention to technological evolution. Regular performance reviews and effective onboarding of new members are key to a proactive approach to technical knowledge sustainability. The manuals were used and continue to be an essential tool that are regularly consulted by users of the equipment in constant practice.

<Financial Aspect>

(UEM)

UEM has a Centre for Communications and Marketing (CECOMA) that has been responsible for disseminating about the activities,

projects and programs. CECOMA is fully funded by the state's annual budget. As a public university, UEM receives funds from the government of Mozambique. Additional funds have been obtained through research and extension projects. Also, as mentioned above, UEM has obtained external funds for research projects from development partners.
(ISPT)
The budge of ISPT has been allocated from the state's annual budget which clearly affects the sustainability of the project effects as it is not a dynamic and flexible process. Although there are no prospects for solutions, it constitutes a challenge for the ISPT. The budget will positively boost the quality of its teaching and enable ISPT to meet the demands of academic society in terms of learning and private companies, thus ensuring the development of its institution in general.
<Environmental and Social Aspect>
No issue on environmental and social aspect has been observed, and it has not been necessary to take any countermeasures.
<Evaluation Result>
In light of the above, slight problems have been observed in terms of the policy and financial aspects of the implementing agency. Therefore, the sustainability of the project effects is ③.

5 Summary of the Evaluation

The project partially achieved the Project Purpose to improve the level of professional courses at UEM and ISPT and the Overall Goal to improve the technical level of technical human resources in the mining sector in Mozambique. The joint research projects between UEM or ISPT with other domestic universities, overseas universities and domestic companies have been continued since the project completion.
Considering all of the above points, this project is evaluated to be satisfactory.

IV. Recommendations & Lessons Learned

Recommendations for Implementing Agency:
It is recommended to UEM and ISPT to ensure the necessary conditions through policies/plans as model for continuation of activities implemented in the project and its sustainability, including proper use of equipment.
Lessons Learned for JICA:
The project has led to ongoing collaboration/ good relationship between the two universities in Mozambique and Akita University. For example, Akita University has accepted 10 KIZUNA program students from Mozambique and most of them are from UEM and ISPT. Effective collaboration and/or coordination between a technical cooperation project and other JICA's program to support human resource development enables benefitable networking between organizations of the recipient country and Japan involved in the activities related to the project which enhance sustainability of project effects. In particular, UEM recognized that short-term training was beneficial for their staff and technicians. However, more specific selection of the courses would be more effective.

Short-term training in Japan

Practical training for measurement