

Country Name	<b>The Project for Capacity Development for Solid Waste Management in Tiznit Commune and Neighboring Communes</b>
The Kingdom of Morocco	

**I. Project Outline**

Background	<p>In Morocco, it was estimated that the amount of solid waste would increase from 5 million tons in 2008 to 6.2 million tons in 2012 along with its foreseen economic growth. However, most of the solid waste was not properly managed and was merely dumped in open spaces without any treatment. As a result, waste scattering, leachate, odors, gas from the dumping sites had been hazardous to the surrounding residents and the environment. It would become worse at any rate due to the increased amount of municipal solid waste in urban areas coupled with population growth as well. The Government of Morocco had considered solid waste management (SWM) to be urgently reinforced. By the effort, SWM had been partly improved with the participation of the private sector in urban areas of large cities. Nevertheless, undertakings at the level of medium and small towns and villages were largely sluggish due to insufficient operational capacity in SWM as well as lack of funding. Also, scarcity of sanitary landfills was critical, thus, the reduction of total waste amount became an urgent issue in those towns.</p>		
Objectives of the Project	<p>Through the establishment of a SWM system to the extent to concretize 3R (reduce, reuse and recycle) in Tiznit commune and neighboring communes, the project aimed at improving SWM in Tiznit Province, and thereby contributing to the improvement of SWM in Tiznit Province and sharing the SWM model in Tiznit Province with other provinces in Morocco.</p> <ol style="list-style-type: none"> <li>Overall Goal: <ol style="list-style-type: none"> <li>Solid Waste Management (SWM) in Tiznit Province is improved</li> <li>The model of SWM in Tiznit Province is shared with other provinces in Morocco</li> </ol> </li> <li>Project Purpose: Capacity for Solid Waste Management in Tiznit Province is improved.</li> </ol>		
Activities of the Project	<ol style="list-style-type: none"> <li>Project Site: Tiznit Commune and 3 other communes (Aglou, Reggada, Arba Sahel)</li> <li>Main activities: <ol style="list-style-type: none"> <li>Compiling issues of SWM in Tiznit Province, 2) modernization of waste collection and transport system and 3R in Tiznit Commune, 3) improving the capacity of Tiznit Commune for planning and management of existing dumping sites and new disposal facilities, 4)improving capacity for planning and management of waste collection and transport as well as existing dumping sites in the 3 target communes, 5) improving capacity for implementation of intercommunal waste management, 6) awareness-raising activities for the people about SWM at the pilot activity sites in Tiznit Commune.</li> </ol> </li> <li>Inputs (to carry out the above activities)</li> </ol>		
	Japanese Side		Moroccan Side
<ol style="list-style-type: none"> <li>Experts: 6 persons</li> <li>Trainees received in Japan: 10 persons</li> <li>Equipment: Track scale, bulldozer, high-pressure washing machine for bulldozer, printer, copy machine, PC, projector, GIS data.</li> </ol>		<ol style="list-style-type: none"> <li>Staff allocated: 16 persons</li> <li>Land and facilities: Office for the experts in Tiznit Commune</li> <li>Equipment: 3 Dump trucks</li> <li>Local cost: Administrative and operational expenses</li> </ol>	
Project Period	April 2013 – March 2016	Project Cost	(ex-ante) 300 million yen, (actual) 275 million yen
Implementing Agency	Tiznit Commune		
Cooperation Agency in Japan	EX Research Institute Ltd.		

**II. Result of the Evaluation**

< Special Perspectives Considered in the Ex-Post Evaluation >

The issues of the project design

- According to the project design, the achievement of Project Purpose was entirely based on the premise that new disposal facilities were to be constructed in a timely manner in order to form the intercommunal system of SWM. However, the construction itself was under the responsibility of the Moroccan side and was beyond the scope of the project. As the concerned facilities were not yet constructed at the time of the ex-post evaluation, it was evidently proven to be a precarious assumption to account for any of the achievement of the Project Purpose as well as the Overall Goal in the evaluation framework.
- No directly applicable indicator was assigned to confirm the Overall Goal 2, namely “the model of Solid Waste Management in Tiznit Province is shared with other Provinces in Morocco.” Despite conceivable regional differences and socioeconomic obstacles and resistance to change more or less entrenched practices of SWM, it had been assumed that SWM in Tiznit Province was to become a showcase example, thereby to hold model adequacy to other provinces in Morocco to automatically replicate it. However, it was no premeditated indicators to identify or measure such a cascade effect on the other provinces.

**1 Relevance**

<Consistency with the Development Policy of Morocco at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Morocco’s development policies as it has considered proper management of solid waste as a critical issue, and thus, enacted the “Law 28-00 on Solid Waste Management and Disposal” in 2006 and launched the “National Program for Solid Waste Management” (PNDM) in 2008. PNDM consisted of ensuring the waste collection rate from 70% to 90% within the 15years to implement appropriate final disposal with the rehabilitation of disposal facilities, through the improvement of the operation and

maintenance system for the facilities as well as the establishment of segregation and recycling system.

<Consistency with the Development Needs of Morocco at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Morocco’s development needs as it was expected that the amount of solid waste would increase from 4.7 million tons in 2008 to 7.0 million tons in 2015 of which 5.56 million tons estimated in the urban area accompanied by its foreseen economic growth. However, most of the solid waste was not properly managed and was merely dumped in open spaces without any treatment. As a result, waste scattering, leachate, odors, gas from the dumping sites had been hazardous to the surrounding residents and the environment. It would become worse at any given rate due to the increased amount of municipal solid waste in urban areas coupled with population growth as well. There was no change in the needs by the time of project completion.

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

The project was consistent with the” Country Assistance Program to Morocco” (2012) that was to assist “reinforcement of economic competitiveness and sustainable economic development.” In particular, to support sustainable growth, it was to utilize Japan’s technology to promote environmental measures and resource management.

<Appropriateness of Project Design/Approach>

From the perspectives of both the effectiveness and sustainability of the project effects, the project suffered from the underlying issues of land acquisition although it had been preconditioned for the construction of the new facilities. As a result, a major discrepancy accrued to the project against what it initially aimed for. In addition, the delay in the construction of the new disposal facilities has resulted in reduced opportunities for utilizing technology transferred to the Moroccan side, particularly concerning sanitary landfill and the safety closure of open dumping sites. Thus, after project completion, there were only a few substantial bases to measure the achievement of the project in terms of the Project Purpose and the Overall Goal. It was thus concluded that there was a flaw in the original plan and assumption of the project.

<Evaluation Result>

In light of the above, the relevance of the project is fair

## 2 Effectiveness/Impact

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

The Project Purpose was not achieved by the project completion. According to the project completion report, since the planned new disposal facilities were not constructed, the detailed contents of the intercommunal system were not established, and the feasibility of the system proposed by the project was not verifiable. Thus, it could not be achieved (indicator 1). The authorities of Tiznit Province had regularly advised Tiznit Commune and three neighboring communes in the implementation of the intercommunal SWM system through training and seminars. However, it was only partial in nature as the new facilities were not constructed and could not upgrade to the extent of the intercommunal SWM system by the project completion (indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued since the project completion. As above, new disposal facilities have not yet been constructed and advice on the system has not yet been able to be substantiated for the conceived intercommunal system. However, according to the survey results, Tiznit commune has notably utilized the methods and tools developed by the project in order to further improve the SWM system and extend the cleaner environment in the commune.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has not been achieved at the time of ex-post evaluation. According to the survey results, the rate of solid waste collection has been slightly improved in a limited number of communes in Tiznit Province (Indicator 1). Only 1 open dumping site was rehabilitated out of 25 communes in the Province (Indicator 2). The rate of solid waste disposal in a sanitary landfill was not improved as the sanitary landfill was not yet put in place despite the original plan (Indicator 3). No official approval on guidelines to implement SWM M/P by the Governor of Tiznit Province (Indicator 4).

<Other Impacts at the time of Ex-post Evaluation>

Due to the lack of a consensus-building mechanism with local communities and landowners, land acquisition for the new disposal facilities utilizing a sanitary landfill turned out to be a long-standing contentious issue that negatively affected the project.

<Evaluation Result>

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

### Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) The capacity for Solid Waste Management in Tiznit Province is improved.	(Indicator 1) The intercommunal system for the new disposal facilities is established among Tiznit Commune and three neighboring communes.	Status of the Achievement: Not achieved (partially continued) (Project Completion) The framework of the intercommunal SWM was still under discussion, and the rule for sharing the costs among the related communes had not been established. Since the planned new disposal facilities were not constructed, the detailed contents of the intercommunal system were not established. As long as the new facilities were not in place, the feasibility of the system proposed by the Project couldn’t be verified to assess the status of the achievement. (Ex-post Evaluation) New disposal facilities have not yet been constructed because of the time-consuming bidding process, site selection, and modification of technical specifications; therefore, the intercommunal system has not been established among Tiznit commune and the neighboring communes. In Tiznit commune, however, a series of methods adopted for the collection and transportation of SWM have been continuously used and improved. In terms of waste collection, it has upgraded its collection vehicles to have better access to the “old city” area by utilizing the Action Plans and the developed tools and materials during the project period. The activities for awareness-raising have continued to be implemented, and a new division in charge of the collection areas has been

		established. In effect, black spots have been eradicated, mainly in “old city.” Also, some neighborhoods have even started sorting waste.																																																													
	(Indicator 2) Authorities of Tiznit Province advise Tiznit and the three neighboring communes in the implementation of the intercommunal SWM system.	Status of the Achievement: Partially achieved (partially continued) (Project Completion) The authorities of Tiznit Province had regularly advised Tiznit Commune and three neighboring communes in the implementation of the intercommunal SWM system through training and seminars, etc. However, the intercommunal SWM system was not realized because the new disposal facilities were not constructed on time. Thus, de facto advice on the system was inevitably limited at the introductory level. (Ex-post Evaluation) The situation remained unchanged as new disposal facilities were not yet constructed. Any advice has not yet been practical to the extent of actual operation and management of the system. However, the intercommunal system has been placed as a priority in the master plan, as well as in the national strategies to promote SWM: the PNDM in particular.																																																													
(Overall Goal) 1) Solid Waste Management (SWM) in Tiznit Province is improved  2) The model of Solid Waste Management in Tiznit Province is shared with other Provinces in Morocco	(Indicator 1) The rate of Solid Waste collection is improved in Tiznit Province.	(Ex-post Evaluation) Partially achieved  Table 1: the average amount of daily waste collected, and the rate of solid waste collection <sup>1</sup> in target communes in Tiznit Province Unit: ton/day <table border="1"> <thead> <tr> <th>Commune</th> <th>2014 Baseline</th> <th>2015</th> <th>2016</th> <th>2017</th> <th>2018</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Tiznit</td> <td>59.4</td> <td>62</td> <td>65</td> <td>67</td> <td>70</td> </tr> <tr> <td>88%</td> <td>88%</td> <td>89%</td> <td>90%</td> <td>90%</td> </tr> <tr> <td rowspan="2">Arbaa Sahel</td> <td>0.6</td> <td>0.6</td> <td>0.7</td> <td>0.5</td> <td>0.7</td> </tr> <tr> <td>86%</td> <td>86%</td> <td>78%</td> <td>71%</td> <td>78%</td> </tr> <tr> <td rowspan="2">Reggada</td> <td>2.1</td> <td>2.3</td> <td>2.1</td> <td>1.9</td> <td>2.5</td> </tr> <tr> <td>95%</td> <td>92%</td> <td>91%</td> <td>95%</td> <td>96%</td> </tr> <tr> <td rowspan="2">Aglou</td> <td>3.3</td> <td>3</td> <td>3.5</td> <td>3.5</td> <td>4</td> </tr> <tr> <td>94%</td> <td>88%</td> <td>95%</td> <td>90%</td> <td>89%</td> </tr> <tr> <td rowspan="2">Total</td> <td>65.4</td> <td>67.9</td> <td>71.3</td> <td>72.9</td> <td>77.2</td> </tr> <tr> <td>88%</td> <td>89%</td> <td>89%</td> <td>90%</td> <td>90%</td> </tr> </tbody> </table> <Source > data provided by Tiznit Province	Commune	2014 Baseline	2015	2016	2017	2018	Tiznit	59.4	62	65	67	70	88%	88%	89%	90%	90%	Arbaa Sahel	0.6	0.6	0.7	0.5	0.7	86%	86%	78%	71%	78%	Reggada	2.1	2.3	2.1	1.9	2.5	95%	92%	91%	95%	96%	Aglou	3.3	3	3.5	3.5	4	94%	88%	95%	90%	89%	Total	65.4	67.9	71.3	72.9	77.2	88%	89%	89%	90%	90%
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	(Indicator 2) The number of open dumping sites that are rehabilitated is increased in Tiznit Province.	(Ex-post Evaluation) Not achieved Each of the 25 communes has its open dumping site, however, only 1 open dumping site of Tiznit commune was rehabilitated in Tiznit Province. (However, the rehabilitation of the dumping site of Tiznit Commune is considered to have benefited a proportionately large portion of the population of Tiznit Province, given that the population of this commune alone accounts for 36.1% of the population of the province as a whole, and 92% of the urban population of the same province as of 2014.)																																																													
	(Indicator 3) The rate of solid waste disposed of in a sanitary landfill is improved in Tiznit Province.	(Ex-post Evaluation) Not achieved. There is no sanitary landfill put in place.																																																													
	(Indicator 4) Guidelines to implement SWM M/P are approved by the Governor of Tiznit Province	(Ex-post Evaluation) Not achieved There is no official approval granted by the Governor of Tiznit Province in this regard.																																																													

Source: Answered questionnaire provided by Tiznit Province and Tiznit Commune.

Population data 2014 from the website of the Haute Commission de Planning (HCP) in the country below.

[https://www.hcp.ma/region-agadir/Caracteristiques-de-la-population-RGPH-2014-Province-Tiznit\\_a52.html](https://www.hcp.ma/region-agadir/Caracteristiques-de-la-population-RGPH-2014-Province-Tiznit_a52.html)

### 3 Efficiency

Both the project cost and project period were within the plan (ratio against the plan: 92% and 100%, respectively). The outputs were mostly produced as planned; however, it was partly affected by new disposable facilities which were not constructed during the project period. Thus, the efficiency of the project is high.

### 4 Sustainability

#### <Policy Aspect>

The promotion of SWM has retained its importance in the national policy of the Government of Morocco as notably manifested in the “National Program for Solid Waste Management”(2008-2023). The “Law 28-00 on Solid Waste Management and Disposal” has been valid to date since 2006. Further, “Stratégie Nationale du Développement Durable” (2017-2030) has reinforced and operationalized an instrument of convergence of the sectoral policies. In other words, the variety of projects initially launched and designed to confront urgent cross-cutting issues have been grouped into a social project that needed to be addressed in a coherent context. The National Program for Solid Waste Management is one of the policies under this strategy when it comes to waste management.

#### <Institutional Aspect>

The major role of the Ministry of Interior (MOI) has continued to ensure and supervise the nation-wide promotion of SWM. Tiznit

<sup>1</sup> It is equivalent of the percentage of the amount of daily waste collected in the amount of daily waste generated.

province has remained engaged in monitoring of SWM within the province. In addition to the follow-ups of the project, Tiznit commune has continuously held itself responsible for the actual execution of SWM. According to the survey results, 2 staff have been assigned in each of three organizations and they are all ex-counterpart staff trained through the project, they all perceive that manpower has been insufficient for the ever-increasing required workload and lack of human resources. In Tiznit Commune, the organization will be reformed and plan to recruit several technicians in 2020.

<Technical Aspect>

According to the survey results, although training was conducted for Tiznit commune and the other target communes during the project period, due to the absence of communication among communes and lack of financial resources, no training was conducted to sustain or promote the acquired technical level in Tiznit Province after the project completion. However, training of trainers on SWM has been occasionally organized by the MOI at the central and/or the regional level. In Tiznit Commune also, they have conducted training of trainers on it since the project ended, but they perceive that it needs to be done on a regular basis to further promote the SWM.

<Financial Aspect>

Although financial support and budget allocation from the central government have not been sufficiently disbursed in a timely manner, Communes have independently requested financial support to partners and donors at their discretion. For example, the National Initiative for Human Development (Initiative Nationale pour le Développement Humain: INDH), a programme launched in 2005 with the purpose of supporting the socio-economic development of the country, provided in-kind support of one waste collecting vehicle to Tiznit Commune. Then in 2019, Tiznit Commune submitted a request of 5 million Dhs to the Fonds d'Equipement Communal (FEC), a financial institution dedicated to public infrastructure development at the local level, to fund the renewal of new engines to replace the old ones. As for prospects for the public funding, the Government of Morocco announced SWM as one of the priorities in the environmental sector in the national budget 2019, but the disbursement was not confirmed yet.

<Evaluation Result>

Therefore, as there has been a major problem in the financial aspect, the sustainability of the effects through the project is low.

5 Summary of the Evaluation

The project has not achieved the Project Purpose and the Overall Goal. As for sustainability, it has institutionally understaffed to the improvement of SWM. It has also been technically challenged to sustain the technical level. Although prospects are better in the financial aspect, the necessary budget has not yet been sufficiently secured for achieving the intended effect.

Considering all of the above points, this project is evaluated to be unsatisfactory.

**III. Recommendations & Lessons Learned**

Recommendations for Implementing Agency:

Although SWM had been developed in Tiznit Commune by the project, as the targeted intercommunal system was not established without planned new facilities, it failed to optimize the scale merit of SWM. Once the new facilities are put in place, the Moroccan side (MOI, Tiznit Province, and Tiznit Commune) should expedite the establishment of the intercommunal SWM in order to disseminate good practices and lessons learned of the intercommunal system with the new facilities. In terms of the dissemination to other provinces, it requires concerted efforts to institutionalize a working mechanism among MOI and provincial governments for the purpose to make coordination between communes and private enterprises concerned in SWM through effective information sharing.

Lessons Learned for JICA:

Although the introduced technical approach for SWM was much needed and pertinent in the project, the project design and scope were not appropriate particularly new disposal facilities were the basic premise for the outcome and impact. This may even have superficially devalued the actual contribution of the project in the field, specifically in Tiznit Commune. Thus, with the given scope, the project design should have been as unaffectedly valid as possible even under the envisaged adverse conditions in the partner country. If needed to ensure the externality to be included as a consequence of the main project effect, at least it should have fully taken into consideration various socioeconomic and administrative factors involved in the decision-making, such as in the case of required land acquisition in the country. It should be also noted that all the stakeholders should have been clear and fully committed about what is their role and responsibility in the project at the time of planning.



Waste sorting in one of the neighborhoods in Tiznit Commune



The bulldozer provided by JICA within the framework of the project