



Capacity Building Project for Solid Waste Management in Tiznit Commune and Neighboring Communes

Project Results

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This project is part of a cooperation between the Moroccan and Japanese governments.

- Goal: building capacity for household and similar waste management in the province of Tiznit.
- Period: 3 years (April 2013-March 2016).
- Target area: Tiznit Commune and the surrounding communes.

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Project Objectives

Solid Waste Management Capacity in Tiznit Province is improved.

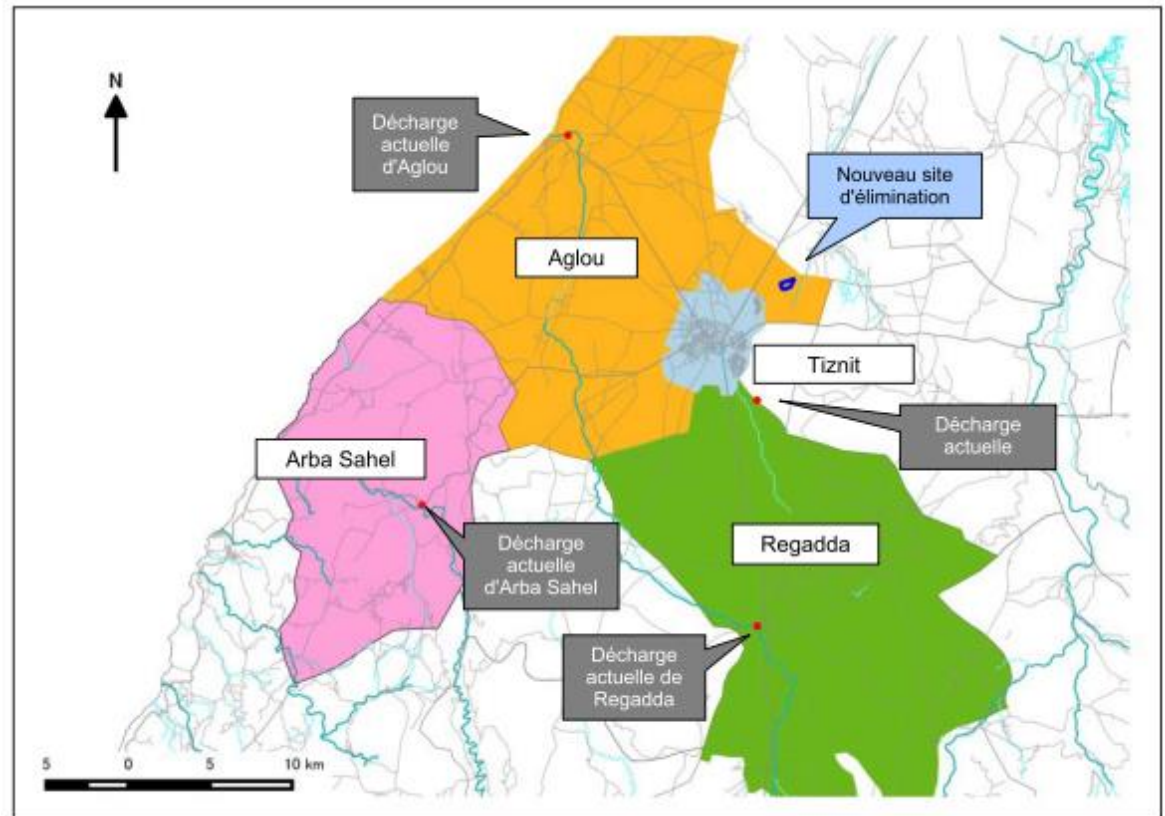
The guidelines of the provincial master plan for household waste management are implemented

PNDM recommendations are fulfilled

Pilot Communes

4 communes to serve as a model

Tiznit, Aglou, Regadda, et Arba Sahel were selected.



Activities carried out under the project

Institutional Analysis of SWM

	Title/contents	Year of promulgation
Law n° 28–00	Law on Waste Management and Disposal	2006
Law n° 10–95	Law on Water	1995
Law n° 78–00	Law on municipal charter	2002
Law n° 11–03	Law on the protection and enhancement of the environment	2003
Law n° 12–03	Law on environmental impact studies	2003
Law n° 13–03	Law on air pollution	2003
Law n° 54–05	Law on delegated management of public services.	2006
Decree n° 2–07–253	Decree on the classification of waste and the list of hazardous waste	2008
Decree n° 2–09–284	Decree setting administrative procedures and technical requirements for controlled landfills	2009

Activities carried out under the project

Analysis of the economic and financial situation of SWM

Unit: DH			
Category	2011	2012	2013 (Estimate)
1. Staff costs (payroll)	2,697,559.14	3,601,840.57	4,167,353.13
Full time staff	1,603,308.90	2,261,840.57	2,567,353.13
Occasional staff	1,094,250.24	1,340,000.00	1,600,000.00
2. Fuel/oil	643,441.41	627,410.85	356,315.52
3. Spare parts	529,393.28	627,410.85	356,315.52
4. Insurance	372,598.45	225,191.47	238,598.69
Staff insurance	192,526.00	-	-
Vehicle insurance	180,072.45	-	-
5. Work uniforms	119,563.00	-	-
6. Rental costs for transport equipment and machinery	129,851.00	-	-
TOTAL	4,492,406.28	5,429,135.94	5,582,978.74
Expenditure per ton of waste (54 tonnes / day)	228	275	283

**Costs of solid waste treatment in Tiznit
commune (2011 - 2013)**

Review of the situation of SWM in the communes.



Review and analysis of the quantity and composition of solid waste.



Organization of workshops to train staff on SWM

Counterparts from the communes of Aglou, Regadda and Arba Sahel participated in several trainings.



Training on time-motion study
(measuring the efficiency of collection)



Training on reducing black
spots

Analysis of current conditions of existing landfills.



Social SWM awareness survey at least 3 times



Households



Shops



Schools

Conducting pilot activities on the waste collection and transportation system in the city of Tiznit.

A pilot project to reduce black spots is implemented with the aim of improving the collection efficiency and making the city cleaner.



Black spots



Marking where to install signboards



Signboard

Setting up a pilot activity on the 3Rs in selected areas in Tiznit Commune

School recycling pilot project is implemented with the aim of reducing the waste and also to raise awareness among students.



Recyclable materials collected by primary school children

Project Results

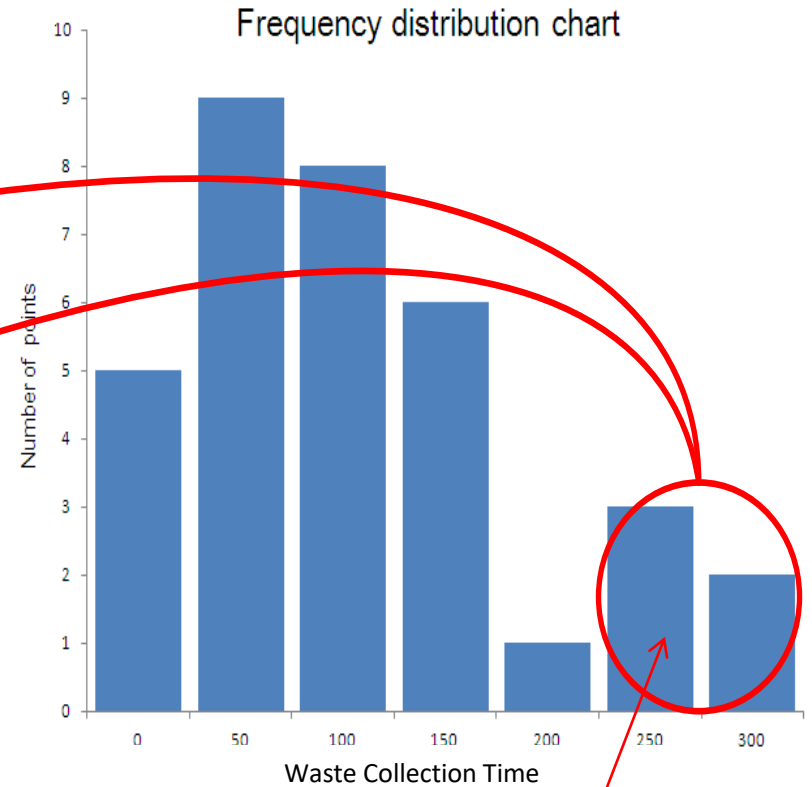
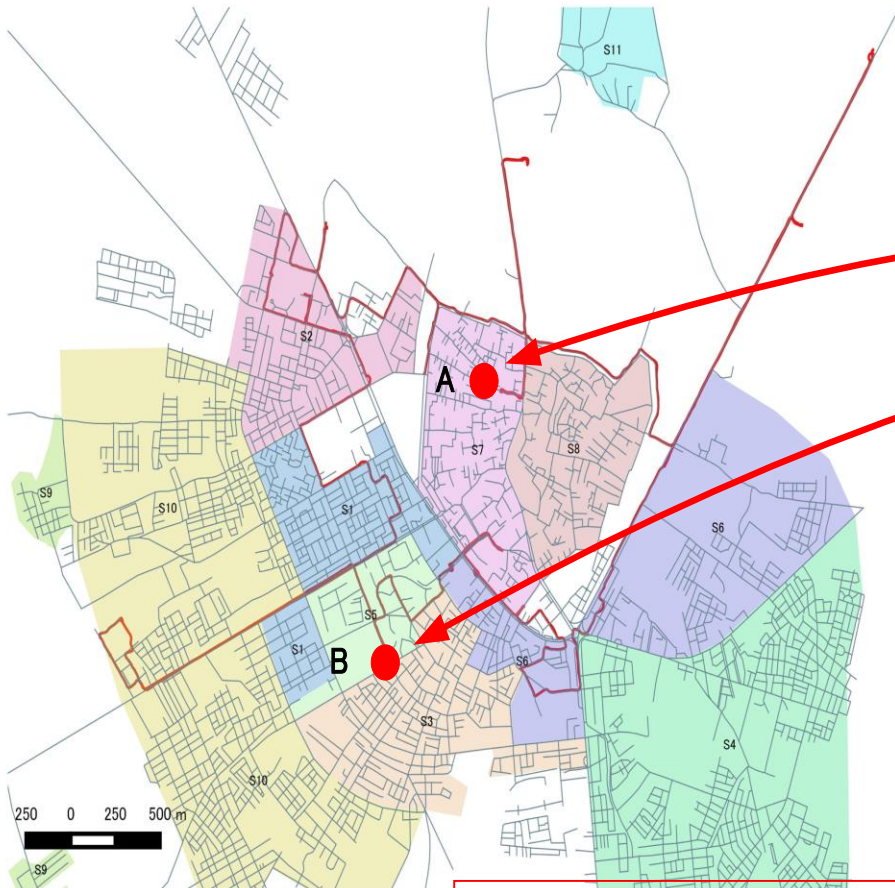
REVIEW AND ANALYSIS OF QUANTITY AND COMPOSITION OF SOLID WASTE.

Item	Household and Similar Waste			Business		Institution Business	Market	Street cleanup
	High revenue	Medium revenue	Low revenue	Restaurant	Other			
Kitchen waste	69.40%	76.10%	70.20%	71.50%	35.00%	28.00%	82.90%	51.30%
Paper	17.40%	11.90%	9.00%	19.80%	35.60%	57.40%	9.20%	22.70%
Fabric	0.60%	0.80%	3.10%	0.00%	3.80%	0.40%	0.60%	2.20%
Plants/wood/Bamboo	0.10%	0.10%	0.20%	0.50%	0.60%	0.10%	0.20%	1.60%
Plastic	8.80%	7.80%	12.20%	5.10%	21.30%	9.60%	5.80%	14.60%
Rubber/leather	0.30%	0.00%	0.60%	0.00%	2.60%	0.00%	0.00%	0.80%
Metals	0.70%	0.50%	1.80%	0.60%	0.60%	0.30%	0.20%	0.80%
Bottles/glass	1.70%	2.00%	1.90%	1.40%	0.20%	3.90%	0.40%	3.10%
Stone/clay/pottery	0.60%	0.20%	0.10%	0.50%	0.00%	0.10%	0.00%	1.80%
Other	0.40%	0.70%	0.80%	0.40%	0.30%	0.20%	0.70%	1.00%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

The proportion of household organic waste is high (around 70%).

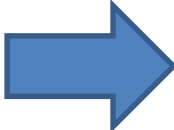
OPTIMIZATION OF COLLECTION ROUTES

Results of the time-motion study



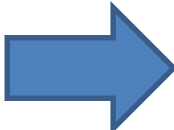
Pinpointing inefficient collection points

Point A



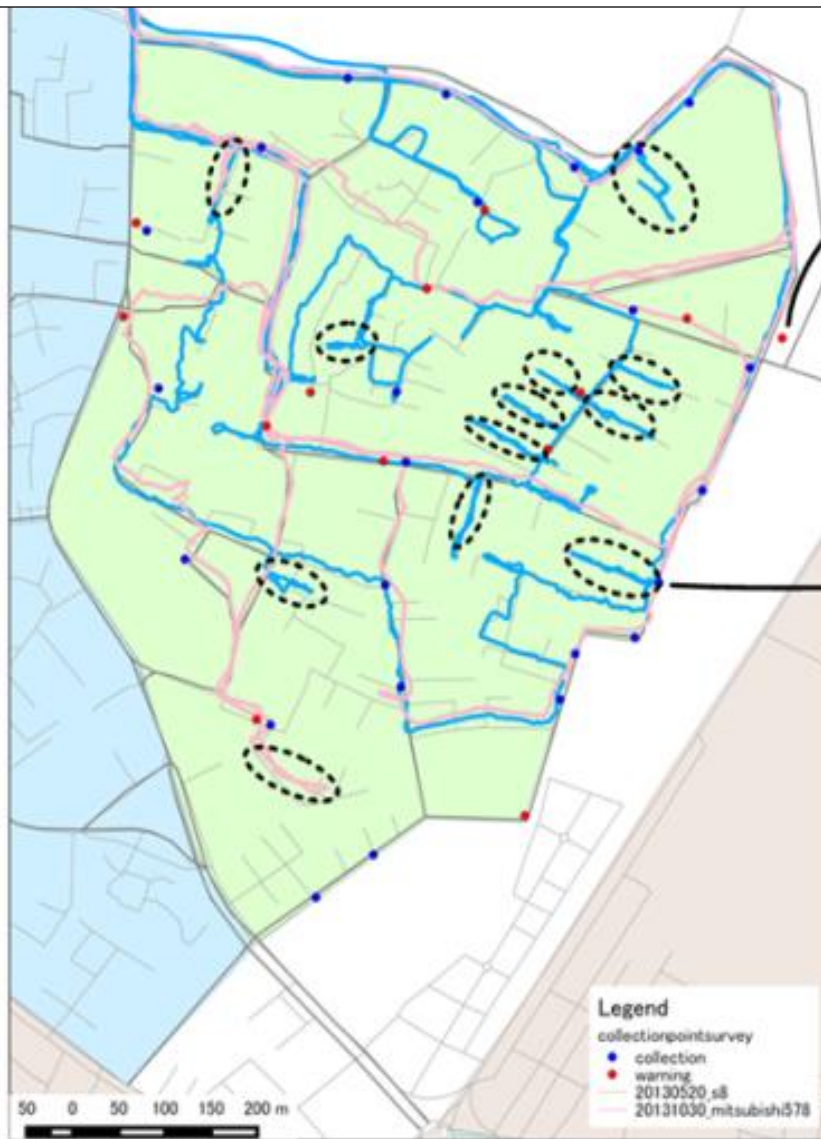
Elimination of containers

Point B



Elimination of containers

Results of the time-motion study



**THE CAPACITY TO MANAGE AND UPGRADE
THE EXISTING LANFILL IN THE TIZNIT
COMMUNE IS IMPROVED.**

BEFORE the pilot project:

There was fire, many flies, plastic bags and bad smells...



AFTER the pilot project:

After the improvement works with the bulldozer, there was less fire, less flies, less plastic bags flying about and less bad smells...



DEVELOPING TOOLS AND MATERIALS TO INCREASING AWARENESS



Magnetic cards on the rules of waste disposal



Educational material (comic) about waste and the 3Rs

Raising awareness in the black spot reduction project



Workshop to educate citizens about waste disposal rules in collaboration with associations



Door-to-door distribution of leaflets

Raising awareness about recycling with the school project



Lessons about the 3R



Collecting Recyclable materials



Workshop with hands-on activities using recyclable materials

Conclusion

- In general, the activities went as planned.
- Implementation of a rehabilitation plan for the current landfill.
- Selection of waste treatment and valorisation method (new disposal and valorisation center for household and similar waste).
- Reflection on sharing the project experience and sending feedback to the PNDM.