



Ministry of Natural Resources and Environmental Conservation  
Environmental Conservation Department



# Management of Hazardous Waste in Myanmar Project

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**Pollution Control Division**

# Hazardous Waste Management Project

## Area

The Whole Myanmar

## Duration

December 2015 to March 2019

## Outcomes

- Improved management of Hazardous Waste
- Proposed regulatory framework for the management of Hazardous Waste in Myanmar, including for the implementation of the Basel Convention
- Proposed Master plan for Hazardous Waste Management in Myanmar

## Intermediate Outcome

Strengthened Capacity within MONREC / Environmental Conservation Department (ECD), other relevant Ministries, City Development Committees, industry and relevant stakeholders on management of Hazardous Wastes

### *Specific Objectives*

- (1) To contribute to the development of a draft legal framework for hazardous waste
- (2) To prepare a draft National Implementation Plan for the implementation of the Basel Convention
- (3) To prepare a draft National Master Plan for hazardous waste management

## *Project's Outcomes*

### **Improved management of Hazardous Waste (HW)**

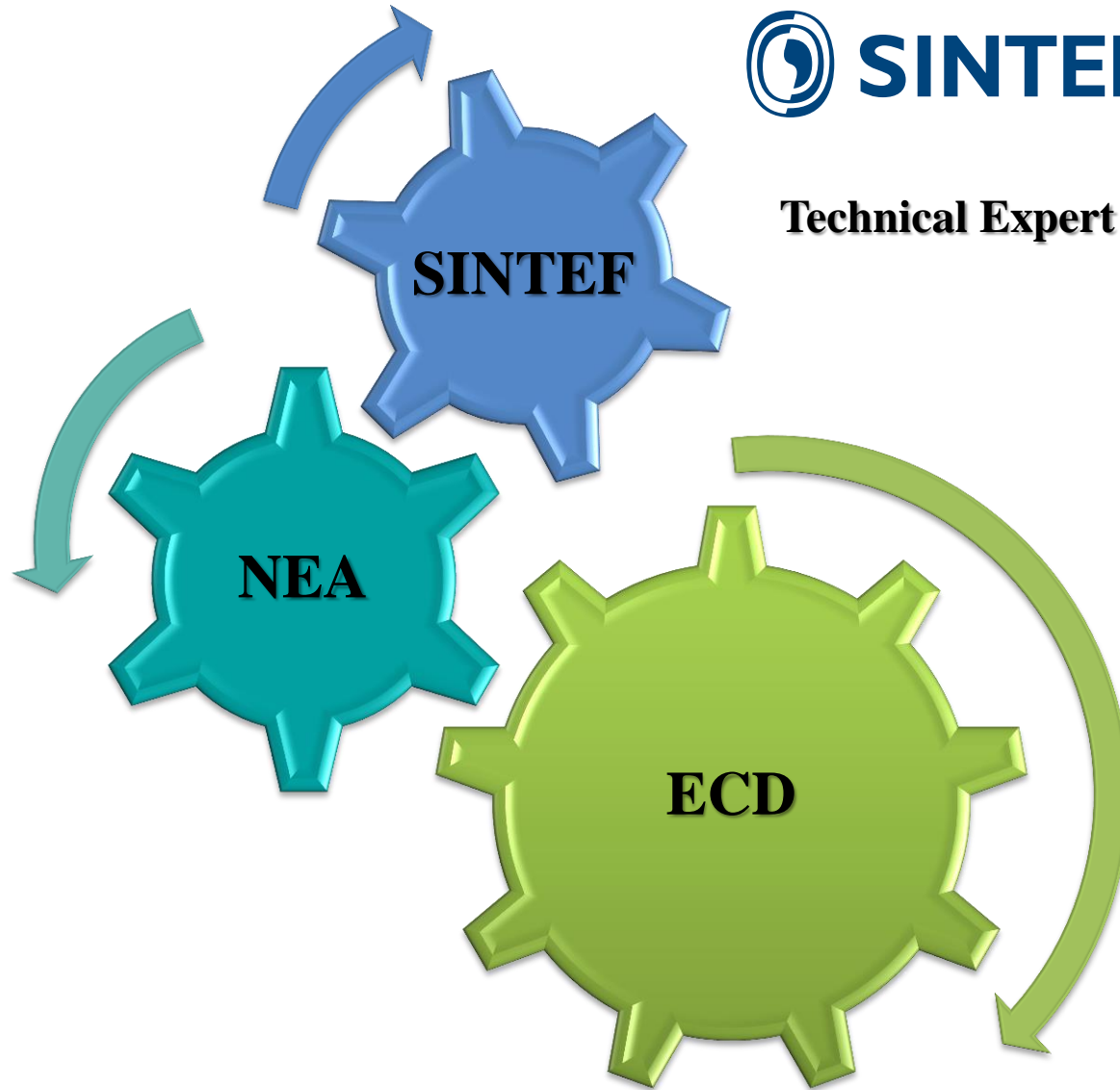
- **Regulatory framework for the management of hazardous wastes in Myanmar**, including for the implementation of the Basel Convention is developed.
- **Master plan for Hazardous Waste Management** in Myanmar is developed

### **Intermediate Outcome:**

- **Strengthened Capacity** within MONREC/ ECD, other relevant Ministries, City Development Committees, industry and relevant stakeholders on management of hazardous waste.



**Technical Expert**



**Legal Expert**



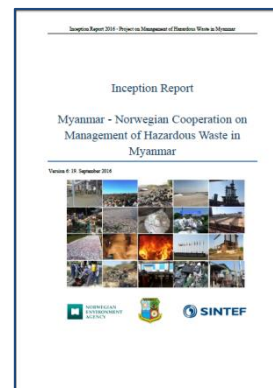
**Environmental Conservation Department**

# Major Activities

- **Activity 1**      **Inception Phase**
- **Activity 2**      **Baseline for existing regulatory framework and institutional arrangement for hazardous waste in Myanmar**
- **Activity 3**      **Technical baseline study of hazardous waste in Myanmar**
- **Activity 4**      **Technical feasibility study for different hazardous waste treatment solutions**
- **Activity 5**      **Strengthen capacity to improve the management of hazardous waste in Myanmar**
- **Activity 6**      **Development of a policy and regulatory framework for hazardous waste and a plan for the implementation of the Basel Convention**
- **Activity 7**      **Master Plan for Hazardous Waste Management in Myanmar**

## Activity 1: Inception Phase

1. **Kick-off Meeting** in Yangon (February 2016)
2. Organization of the work in the project – **Establishment the formal groups (PMG, RWG, TTFT)**
3. Development of TORs and hiring of local consultants (ECD, SINTEF and the Norwegian Environment Agency)
4. **Inception Report** is finalized



# Establishment of formal groups for the Project





# Activity 2: Baseline study on existing regulatory framework and institutional arrangements for HW in Myanmar

## Regulatory Working Group Meeting

1<sup>st</sup> meeting 16.8.2016

2<sup>nd</sup> meeting 21.10.2016

3<sup>rd</sup> meeting 13.12.2016

4<sup>th</sup> meeting 8.6.2018

5<sup>th</sup> meeting 25.9.2017

6<sup>th</sup> meeting 27.11.2017

7<sup>th</sup> meeting 15.2.2018

8<sup>th</sup> meeting 25.5.2018

9<sup>th</sup> meeting 12.11.2018



## Meetings with relevant ministries

(conducted by NEA and ECD);

- Department of Mine
- Ministry of Commerce
- Ministry of Industry
- Ministry of Health and Sport
- Ministry of Electric Power and Energy
- Ministry of Agriculture, Livestock and Irrigation
- Ministry of Planning and Finance
- Mandalay City Development Committee
- Yangon City Development Committee
- Thilawa SEZ Management Committee
- Ministry of Transport and Communication



- **Baseline Report on Existing Policies, Legislation and Institutional Arrangements for Hazardous Waste in Myanmar (final draft)**

## Consultation Meeting

- 30.8.2018 at Grand Amara Hotel Consultation Meeting on “**study on existing regulatory framework and institutional arrangements for HW in Myanmar Report**”
- 31.8.2019 at Yangon, Novotel Consultation Meeting on “**study on existing regulatory framework and institutional arrangements for HW in Myanmar Report**”



# Activity 3: Technical baseline study on hazardous waste

ECD and SINTEF have organized

## **Meeting in Yangon**

12.8.2016 at UMFCCI

19.9.2016 at MIA, Ygn

18.11.2016 at Novatel Hotel

23.2.2017 at Jasmine Palace Hotel

23.8.2017 at Summit Parkview Hotel

19.3.2018 at Myanmar Engineering Society

## **Meeting in Mandalay**

18.8.2016 at Hotel Mandalay

14.9.2016 at MRCCI

10.11.2016 at Hotel Mandalay

29.3.2017 at Mandalay Swan Hotel

20.3.2018 at Hotel Mandalay

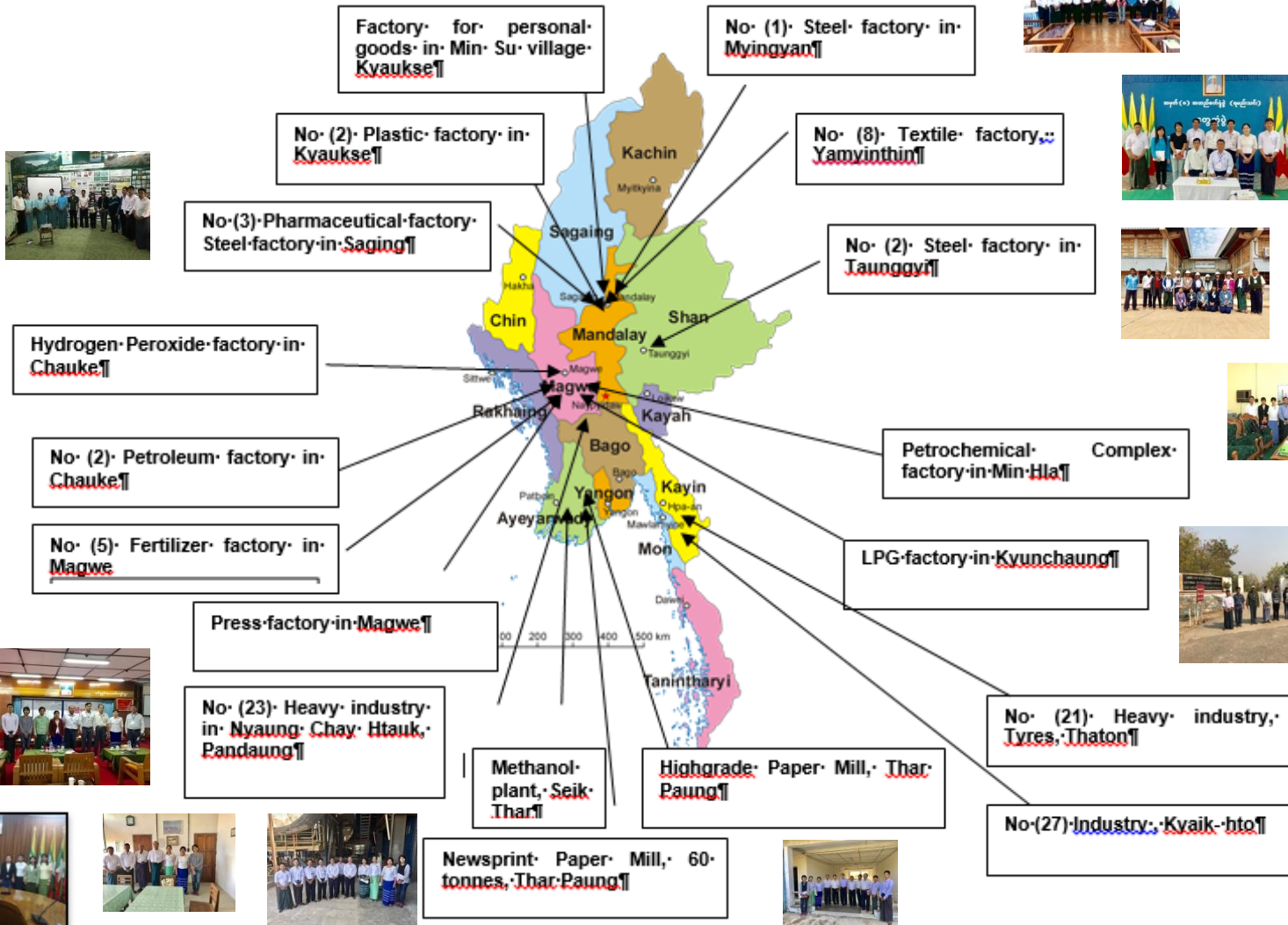
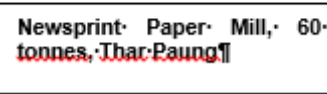




- **Inventory**
- Approximately 200 industries are surveyed in Yangon and Mandalay; and ~ 26 SoEs around Myanmar.
- Two Gold mining areas in Mandalay has been visited.
- Oil Refineries and Petrochemical industries has been visited.
- Oil and Gas sector in Dawei area has been visited.
- Automobile services in Yangon has been visited.
- General Hospital and Private Hospital has been visited.



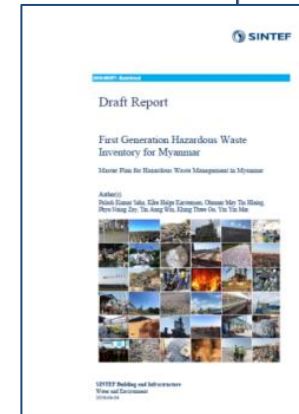
## 26 SoEs around Myanmar



## Photo Record



## Reports





# Hazardous Waste Inventory

ရင်းမြစ်	တိုးတက်မှုနှုန်း (%)	ဘေးအန္တရာယ်ရှိစွန့်ပစ်ပစ္စည်းစွန့်ပစ်မှုအလားအလာမျိုးပမာဏ (tonnes/year)				
		လက်ရှိ	ကာလတို	ကာလလတ်	ကာလရှည်	
		၂၀၁၇	၂၀၂၀	၂၀၂၅	၂၀၃၀	
ပုဂ္ဂလိကစက်မှုကဏ္ဍ						
ရန်ကုန်	၆.၇	၁၈၇၀	၂၂၇၂	၃၁၄၂	၄၃၄၅	
မန္တလေး	၆.၇	၉၈	၁၁၉	၁၆၅	၂၂၈	
အခြား ပြည်နယ်နှင့် တိုင်းဒေသကြီး	၆.၇	၁၆	၁၉	၂၇	၃၇	
ပုဂ္ဂလိကစက်မှုကဏ္ဍ စုစုပေါင်း		၁၉၈၄	၂၄၁၀	၃၃၃၃	၄၆၁၀	
ဥပဒေအောက်ရှိ လုပ်ငန်းများ (State Owned Enterprises-SOEs)						
စက်မှုဝန်ကြီးဌာနအောက်ရှိ လုပ်ငန်းများ/စက်ရုံများ	၆.၈	၈၂	၁၀၀	၁၃၉	၁၉၃	
လျှပ်စစ်နှင့်စွမ်းအင် ဝန်ကြီးဌာန အောက်ရှိ လုပ်ငန်းများ	၆.၇	၁၂၂၉၀၀	၁၄၉၂၅၉	၂၀၆၄၇၅	၂၈၅၅၅၅	
ဥပဒေအောက်ရှိ လုပ်ငန်းများ စုစုပေါင်း		၁၂၂၉၈၂	၁၄၉၃၅၉	၂၀၆၆၁၄	၂၈၅၇၄၈	
အထူးစီးပွားရေးဇုန်များ (Special Economic Zones -SEZs)						
သီလဝါ SEZ			၁၆၀	၁၅၀၀	၇၅၀၀	၇၅၀၀
ထားဝယ် SEZ			၀	၀	၉၇၂	၅၃၅၀
ကျောက်မြူ SEZ			၀	၀	၃၆၀	၁၉၈၀
အထူးစီးပွားရေးဇုန်များ စုစုပေါင်း			၁၆၀	၁၅၀၀	၈၈၃၂	၁၄၈၃၀
အခြား						
ကျွန်းမာရေးစောင့်ရှောက်မှုဝန်ဆောင်မှု လုပ်ငန်းများ	၁၀	၃၆၇၂	၄၈၈၇	၇၈၇၁	၁၂၆၇၇	
သတ္တုကဏ္ဍ	၆.၇	၉၈၆၈၄	၁၁၉၈၇၈	၁၆၅၇၉၁	၂၂၉၂၉၀	
ကုန်းတွင်းနှင့်ကမ်းလွန် ရေနံနှင့်သဘာဝဓာတ်ငွေ့ တူးဖော်ထုတ်လုပ်ရေး လုပ်ငန်းများ	၆.၇	၄၄၂၀၆	၅၃၇၀၀	၇၄၂၆၇	၁၀၂၇၁၁	
ရေနံနှင့်သဘာဝဓာတ်ငွေ့ပြိုက်လဲလှယ်လုပ်ငန်းများ	၆.၇	၇၅	၉၁	၁၂၆	၁၇၄	
ဆိပ်ကမ်းများ (ရန်ကုန်ဆိပ်ကမ်း)	၇.၅	၃၃၉	၄၂၁	၆၀၅	၈၆၈	
မော်တော်ယာဉ်ပြင်ထိန်းသိမ်းရေး ဝန်ဆောင်မှု လုပ်ငန်း (Car and light vehicles)	၁၀	၅၂၃	၆၉၆	၁၁၂၁	၁၈၀၆	
အီလတ်ထရောနစ်စွန့်ပစ်ပစ္စည်းများ (သို့မဟုတ်) WEEE	၁၀	၅၉၂၀	၇၈၈၀	၁၂၆၉၀	၂၀၄၃၇	
ကြာရှည်စွာ မပျက်စီးတည်မြဲနေနိုင်သည့် အော်ဂဲနစ် ဓာတ်ခြပ်ပစ္စည်းများ (POPs and PCBs)		၂၄၀၃	၂၄၀၃	၂၄၀၃	၂၄၀၃	
အခြားစုစုပေါင်း		၁၅၅၈၂၂	၁၈၉၉၆၅	၂၆၄၈၇၅	၃၇၀၃၆၆	
အားလုံးစုစုပေါင်း		၂၈၀၉၄၈	၃၄၃၂၆၁	၄၈၃၆၅၃	၆၇၅၅၃၃	

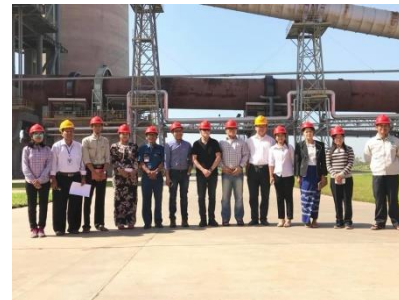


Sources: report of First generation Hazardous waste Inventory for Myanmar



# Activity 4: Conduct a Feasibility Study for Different HW Treatment Solutions

- All current waste treatment options available in Yangon, Mandalay and Nay Pyi Taw has been visited.
- All current health care waste treatment options available in Yangon, Mandalay and Nay Pyi Taw has been visited.
- Cement factory in Mandalay regions and Mon state has been visited.
- Golden Dowa Eco-System Myanmar Co. Ltd. In Thilawa SEZ in Yangon has been visited.
- Waste to Energy Plant in Shwe Pyi Thar Township, Yangon has been visited
- Feasibility Study to Double Rhinos and Alpha Cements plants in 29<sup>th</sup> November 2017





- Evaluation of feasible treatment options for hazardous wastes



- Healthcare Waste Management in Myanmar



- Pre-feasibility of Alpha Cement and Double Rhinos Cement in Mandalay Region for Co-processing of Wastes

# Activity 5: Intermediate Outcome: Strengthen the capacity to improve management of Hazardous Waste

- Study tour to Norway (2016), Thailand (2017) and South Korea (2019)
- National Workshop on Hazardous Waste Management in Nay Pyi Taw
- Two city level workshops in Yangon and Mandalay Industrial Zones
- consultation meeting and a co-processing workshop for the Myanmar cement industry in Mandalay





- “Seminar on the Management of Waste on the Oil and Gas Sector” in Nay Pyi Taw
- Capacity Building Program regarding on Hazardous waste Management Project in PCCD, YCDC, Yangon (18<sup>th</sup> September 2017)
- Seminar on Hazardous Waste Management and co-processing in Royal Mingalar Hotel, Mandalay (28<sup>th</sup> November, 2017)



- Seminar on Hazardous Waste Management in Myanmar at Mandalay Technological University (November 28th 2017)
- Delivered the first Course at Yangon Technological University (YTU)
- Seminar on the Procedure on Transboundary Movement of Hazardous Waste in Myanmar in Grand Amara Hotel, Nay Pyi Taw (16<sup>th</sup> February, 2018)
- Site Visit to Thilawa Special Economic Zone to promote the Capacity Building as part of the study of No. (10) and (11) On Job Training Program of Environmental Conservation Department's new staffs regarding to the Environmentally Sound Management of Hazardous Waste in Myanmar, Thilawa SEZ, Yangon.



- Study on abroad “Certificate course of Environmental Engineering Management in AIT, Thailand” (3 staffs from ECD)
- ISO 14001:2015 Awareness, Internal Audit and Documentation Training
- ISO 14001:2015 Lead Auditor Training
- Occupation Safety & Health Assessment and Risk Management Course

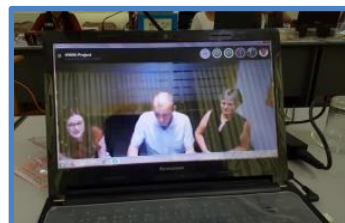
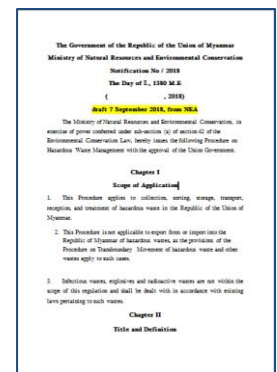
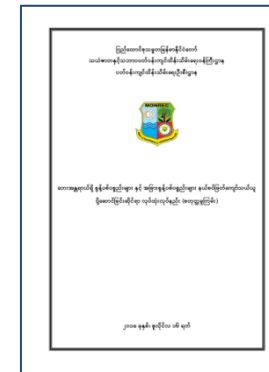
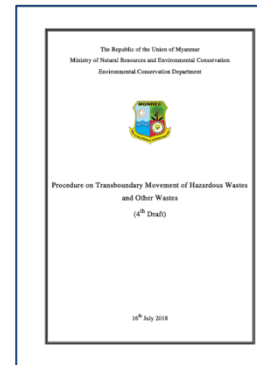




# Activity 6: Development of a policy and regulatory framework for hazardous waste and a plan for the implementation of the Basel Convention

- Procedure on the Transboundary Movement of HW (final draft)
- Hazardous Wastes Management Rules (second draft)
- Notification on Specifying types of Hazardous Wastes (Fitst draft)

Consultation Meeting on  
“Procedure on Transboundary Movement of  
Hazardous Wastes and Other Wastes”  
at 14.7.2018 (Horizon Lake View Hotel, Nay  
Pyi Taw)



# Activity 7: Master Plan for Hazardous Waste Management in Myanmar

## First Consultation Meeting

- 29.9.2018 at Grand Amara Hotel (Nay Pyi Taw)

## Second Consultation Meeting

- 8.11.2018 at Marvel Hotel (Mandalay)
- 9.11.2018 at Novotel Yangon Max Hotel (Yangon)

## Final Consultation Meeting

- 13.2.2019 at Grand Amara Hotel (Nay Pyi Taw)





## % of HWM project Work Plan

120.000

100.000

80.000

60.000

40.000

20.000

0.000

◆ % of HWM project Work Plan

J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
0.	0.	0.	1.	1.	1.	3.	6.	10	12	14	17	20	23	26	29	33	37	40	44	48	52	56	59	63	66	69	73	76	80	82	85	88	90	91	94	96	98	10

**Thank You**