

**Malé Declaration Joint Training
on Regional Refresher Training Workshop
CPCB, India from 18-21 November 2010**

IRAN Report

By:

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Introduction:

Dehloran station has been established for monitoring transboundary air pollution in Islamic Republic of IRAN. Site selection was performed based on *Malé Declaration on Control and Prevention of Air Pollution and Its Likely Transboundary Effects for South Asia* was endorsed by ministers of environment of South Asia. Monitoring of transboundary air pollution was begun in Dehloran station in 2004. The monitoring site has a building and other equipments for measuring and analyzing of the samples.

Climatic conditions of Dehloran:

Dehloran is located in the south of Ilam province 910km far from Tehran enjoying an arid and semi-arid climate. The annual mean of temperature is 25.5°C and air temperature in the summer exceeds to 50°C. The rate of mean precipitation is 268.2mm and the mean of evapotranspiration is 217.2mm. The average of wind speed is 10.7m/s and maximum wind speed is 18m/s.

Dehloran monitoring station:

Dehloran monitoring station has been established in 2004 based on criteria of Malé Declaration. This station is located in 40km far from south of Dehloran city and 5.5km to common boundary Iran – Iraq near to Chamsari village. The access to site is possible by Dehloran – Chamsari Asphalt road.

Station name	Chamsari
Area	1 hectarea
Geographic position	32° 23' of north latitude 47° 30' of east longitude
Altitude	197m above sea level

DEHLORAN Transboundary Station



Site activities and facilities:

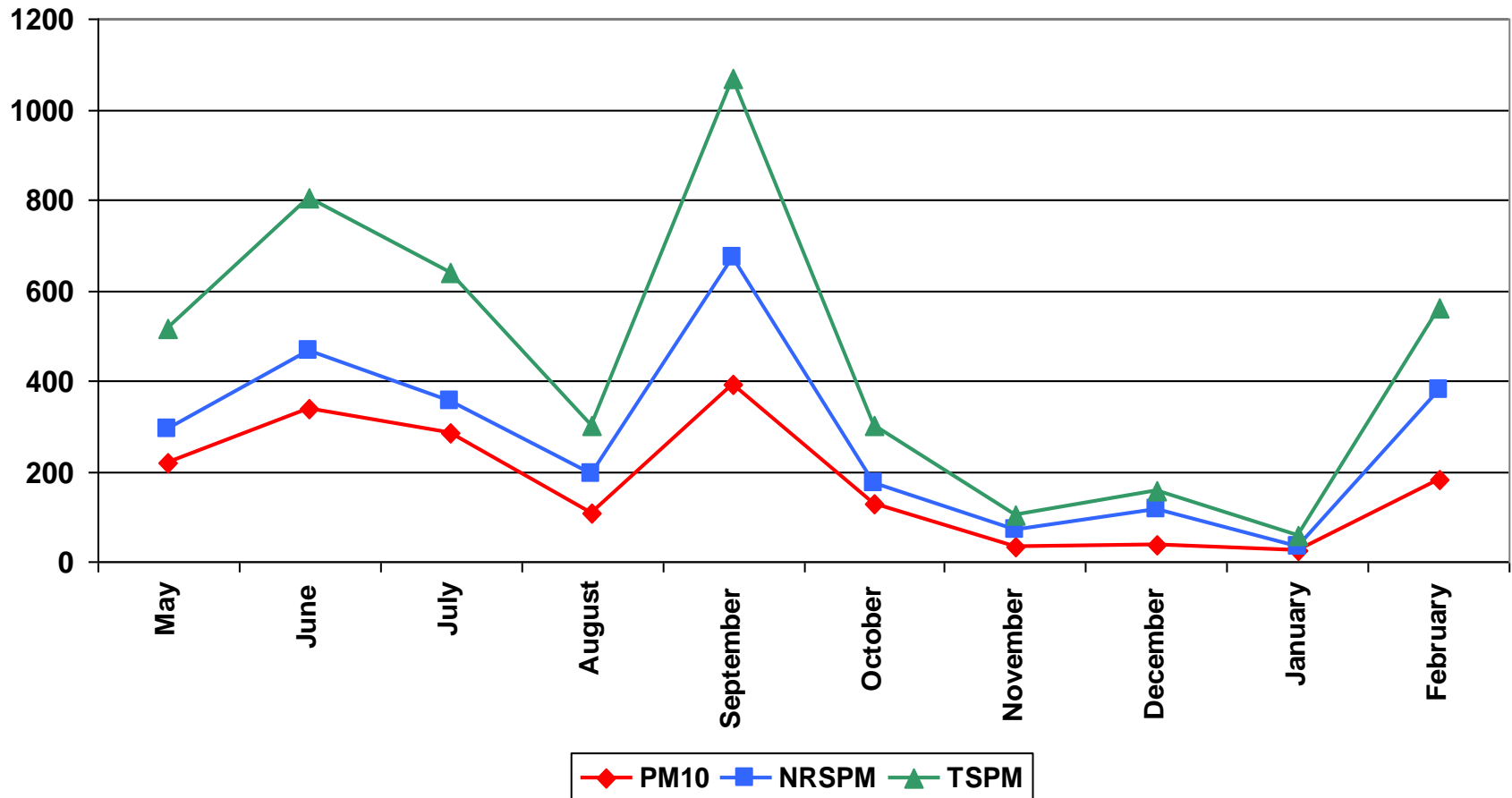
The station contains a laboratory and other equipments such as High Volume Sampler, Wet Only Collector, Bulk Collectors and Passive Samplers. Electricity power has been transferred to station. Water supply has been done by an air pump in the site place. Sample preparing and simple tests (such as pH, EC ...) are done by a technician in the site laboratory. Other tests (such as NO_3 , NH_4 ...) are done by an expert in the Chemical Laboratory in Ilam Environmental office.

Laboratory area	60 m ²
High Volume Sampler	Upon the station roof
Wet Only Collector	Upon the station roof
Bulk Collectors	Around the station
Passive Samplers	Around the station

Data report:

1. Dust Measuring in DEHLORAN station (Male station)

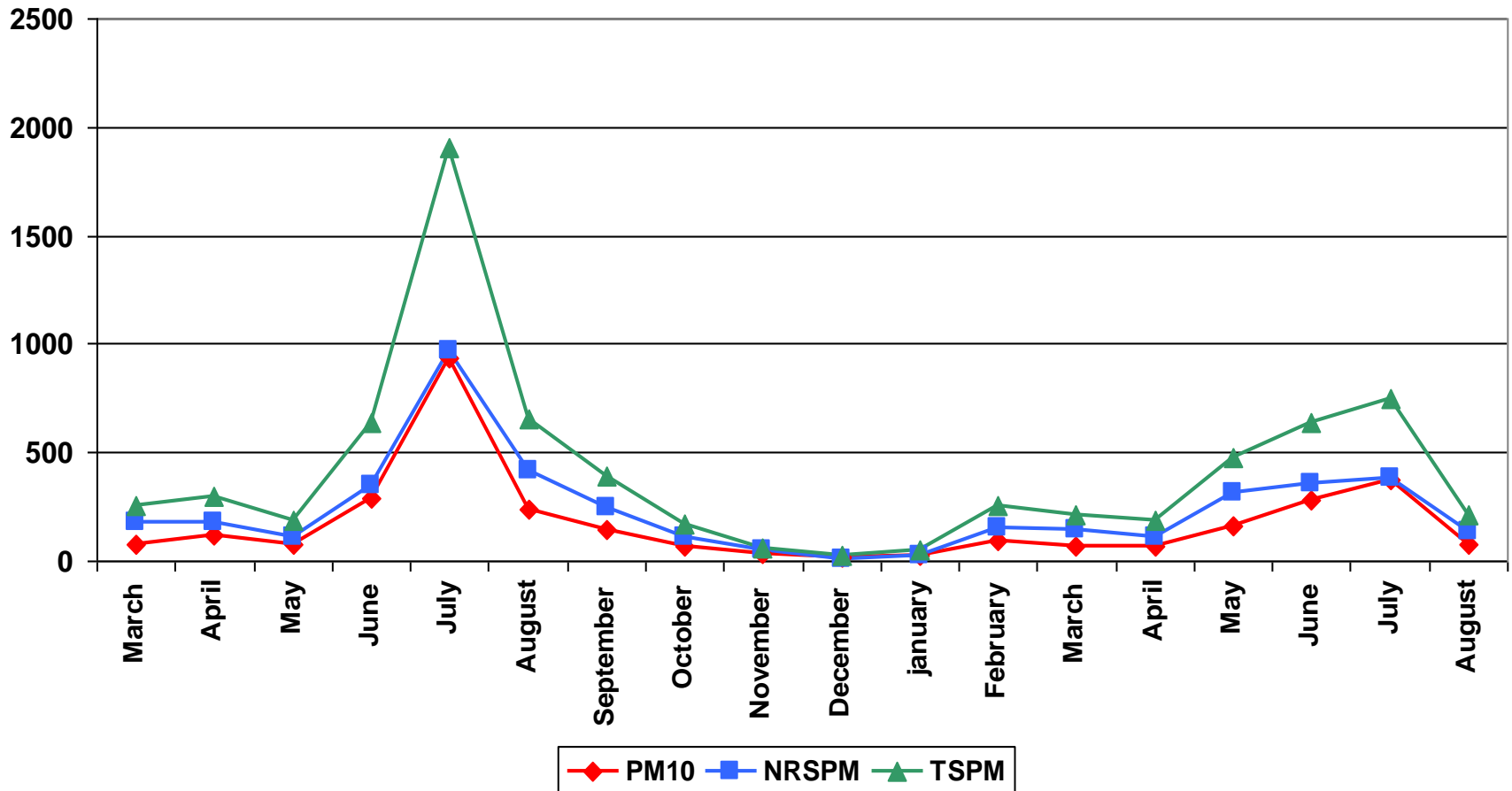
(May 2008 - February 2009)



Data report:

1. Dust Measuring in DEHLORAN station (Male station)

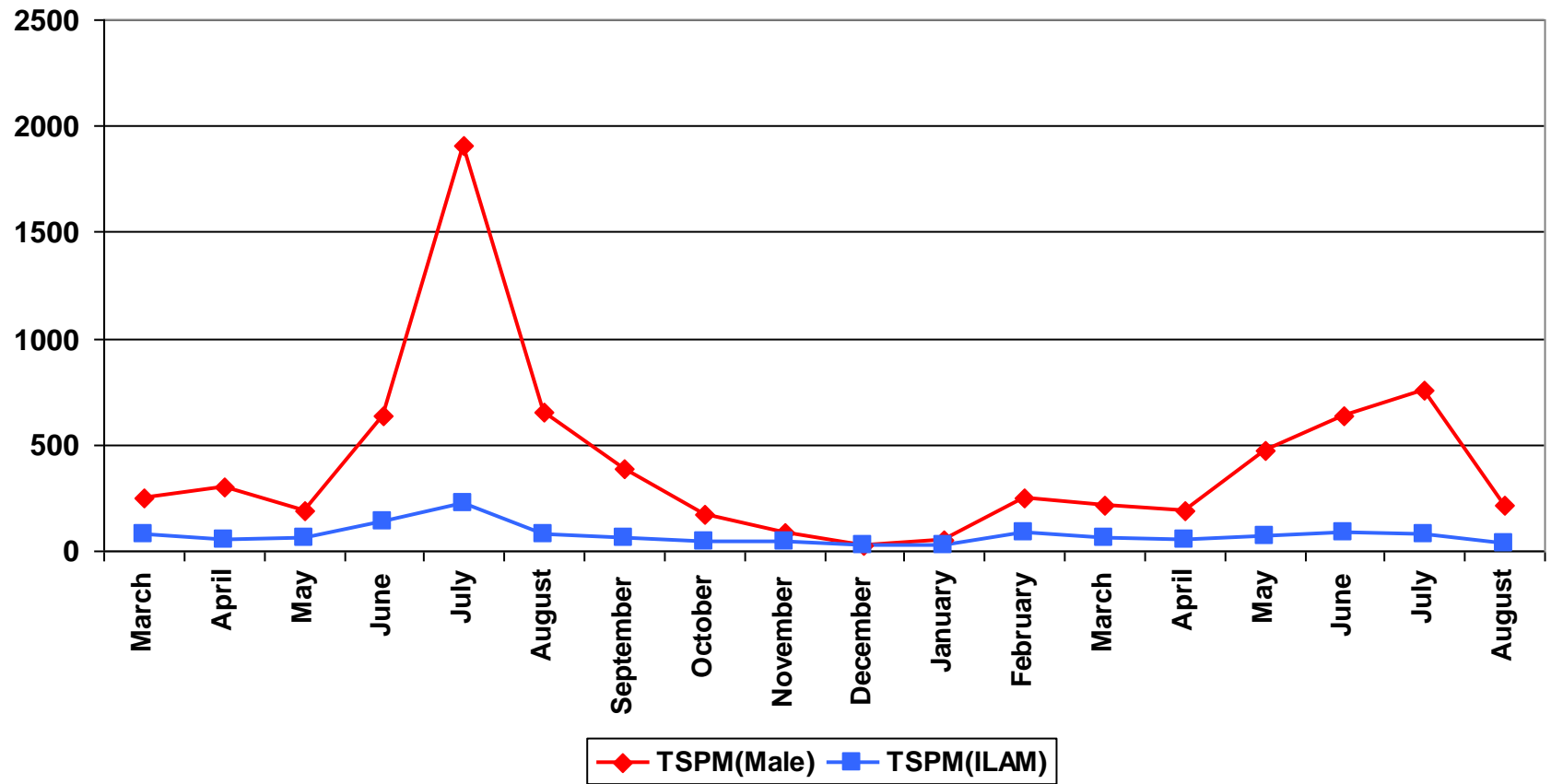
(March 2009-October2010)



Data report:

2. TSPM comparison between ILAM and DEHLORAN station

(March 2009-October 2010)



Data report:

2. Wet Bulk Collector

(March 2009-October2010)

Sample No.	Sampling period				Date of analysis	Amount of sample ml	EC mS/m	pH	Anion		
	Start		End						SO ₄ ²⁻ μmol/l	NO ₃ ⁻ μmol/l	Cl ⁻ μmol/l
	Date	Time	Date	Time							
1	2009/4/1	10:25	2009/4/10	17:15	2009/4/12	180	19.8	7.45	195.25	22.24	56.03
2	2009/4/1	10:25	2009/4/10	17:15	2009/4/12	172	21.9	7.41	63.75	24.01	112.35
3	2009/12/13	10:00	2009/12/19	10:00	2009/12/21	640	9.81	7.21	42.94	19.34	56.03
4	2009/12/13	10:00	2009/12/19	10:00	2009/12/21	570	7.31	7.23	40.8	20.79	56.03
5	2010/2/23	13:00	2010/3/2	10:30	2010/3/3	285	22.7	7.41	303.04	31.11	281.31
6	2010/2/23	13:00	2010/3/2	10:30	2010/3/3	265	17.5	7.70	98.32	36.10	112.35

Data report:

2. Wet Bulk Collector

(March 2009-October2010)

Sample No.	Sampling period				Date of analysis	Amount of sample ml	Cation				
	Start		End				NH ₄ ⁺ μmol/l	Na ⁺ μmol/l	K ⁺ μmol/l	Ca ²⁺ μmol/l	Mg ²⁺ μmol/l
	Date	Time	Date	Time							
1	2009/4/1	10:25	2009/4/10	17:15	2009/4/12	180	88.88	139.1	71.79	581	16.66
2	2009/4/1	10:25	2009/4/10	17:15	2009/4/12	172	5.55	134.8	66.66	661	20.83
3	2009/12/13	10:00	2009/12/19	10:00	2009/12/21	640	94.43	8.69	23.07	467.5	109.14
4	2009/12/13	10:00	2009/12/19	10:00	2009/12/21	570	72.21	8.69	12.82	507.5	111.64
5	2010/2/23	13:00	2010/3/2	10:30	2010/3/3	285	83.32	17.38	253.13	565.0	42.90
6	2010/2/23	13:00	2010/3/2	10:30	2010/3/3	265	66.66	0.43	58.97	637.5	23.32

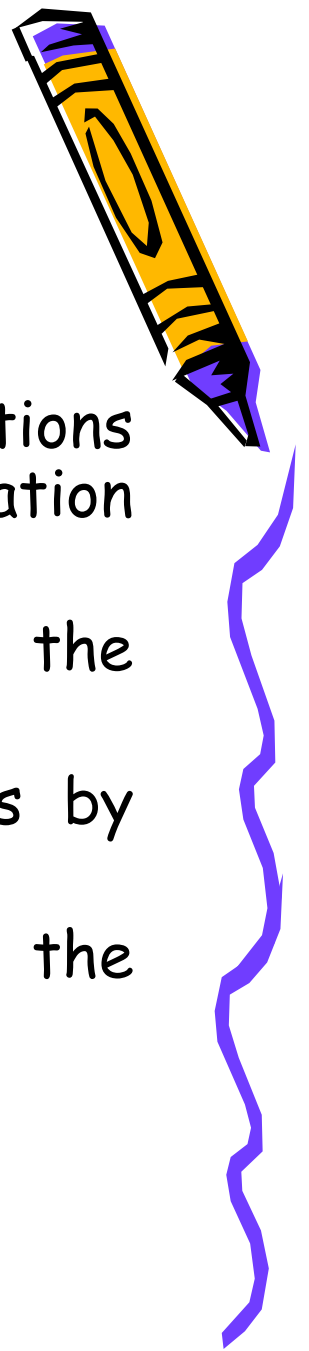
Technical problems:

- High temperature has undesirable effects in summer on plastic materials used in Bulk Collectors Funnel.
- Some birds use Bulk Collector Funnel and Wet Only Door for sitting and this action might contaminate the wet samples.
- Dehloran has low precipitation in a year.
- Monitoring site needs a specialist person for NH₄ and NO₂ measuring in the field.
- Calibration of equipments is difficult.
- High volume sampler needs to a fiberglass filter paper.
- The charge of maintenance of air pump, electricity power, and guardianship... is expensive.



Several programs for air quality control in Iran:

- Establishment of a monitoring network for air pollution control in the country by setting the stations of air quality control.
- Constitution of committee for air quality control with cooperation of governmental and non-governmental organizations.
- Conduction of Clean Air Week Ceremony from 18-24 January 2010.
- Administration of air quality standards for cars and their companies.
- Invitation of public partnership to air pollution reduction.
- Effort for development monitoring network with introduction the eight stations air quality control in ILAM province.



Recommendations:

- Using advanced equipments in monitoring stations for acceleration in measuring. Dehloran station with electricity power is suitable for this aim.
- Using online system for data report to the environmental laboratory in Ilam continuously.
- Servicing and repairing the site equipments by maker companies.
- Providing the meteorological equipments in the site place with UNEP cooperation.





Thanks for your attention