National report for the POPs Global Monitoring Plan
Suggested template

Table of content

UNEP Air Sample (PUFs) 2010-2011

- Air sample monitoring was done using polyurethane foams (PUF).
- The exposures of the PUFs were done in four (4) rounds between August 26, 2010 and July 8, 2011
- There were eight (8) PUF samples per round, four (4) of which were analysed for Persistent Organic Pollutants (POPs by the designated local laboratory (Pesticide Research Laboratory, PRL) and the other four (4) samples were analysed by a designated laboratory in Spain (CSIC) for the same parameters.

UNEP PUF Sampling Schedule (2010-2011)

Sampling		**Round Number**	**PUF samples analysed by Spain**	**PUF samples analysed by PRL**
Installation date	**Time**			
**August 26, 2010	9:24 am	1	1, 2, 5 and 7	3, 4, 6, 8 and (the "reserve" was analysed by Bennin)
October 1, 2010	12:20 pm – 12:57 pm	2	1, 2, 5 and 6	3, 4, 7, 8 and "reserve"
January 3, 2011	5:26 pm – 6:02 pm	3	1, 2, 5 and 6	3, 4, 7, 8 and "reserve"
April 8, 2011	3:45 pm – 4:30 pm	4	1, 2, 5 and 6	3, 4, 7, 8 and "reserve"

- ** Due to late arrival of the PUFs from Spain, the first exposure of the PUFs was not done as proposed.
- (The proposed date was July 1, 2010). So, the first round of samples was only exposed for
- one (1) month instead of three (3) months.
- The final round of PUF exposure ended on July 8, 2011 between 3:30 pm and 3:45 pm .

Passive Air Sampler (PAS)

Item Description	**Status**
Mounting of PAS	Completed (August 26, 2010)
Removal and analysis of PUFs	Completed (July 8, 2011)

- Extraction and clean-up procedures
- Liquid-liquid extraction using standard SOP (GLIER/UNEP) with solvents such as methylene and hexane.
- Florisil clean-up
- Concentration of extract to about 1 mL.

Agilent 6890N Gas Chromatograph attached to 5973 Network Mass Selective Detector

UNEP PUF Results_Rounds #1&2_B

Matrix	AIR	
Date	4/26/2011	9/27/2011
No.	1	2
Sample-ID	JAM-1-I	JAM-1-II
Country	JAMAICA	JAMAICA
Fat (%)		
Unit	ng filter^{-1}	ng filter^{-1}
Aldrin	0.214	0.065
Dieldrin	0.179	0.0004
Endrin	0.014	0.003
Sum drins	0.407	0.068
a-Chlordane	0.0004	0.0004
g-Chlordane	0.115	0.026
Oxychlordane	0.0004	0.0004
cis-Nonachlor	0.149	0.0004
trans-Nonachlor	0.0004	0.0004
Sum chlordanes	0.265	0.028
Sum chlordane equivalent		

UNEP PUF Results_Rounds #1&2_C

Matrix	AIR	AIR
Date	4/26/2011	9/27/2011
No.	1	2
Sample-ID	JAM-1-I	JAM-1-II
Country	JAMAICA	JAMAICA
Fat (%)		
Unit	ng filter^{-1}	ng filter^{-1}
o,p'-DDT	0.021	0.017
p,p'-DDT	0.068	0.0004
o,p'-DDD	0.0004	0.0004
p,p'-DDD	0.007	0.015
o,p'-DDE	0.0004	0.0004
p,p'-DDE	0.079	0.020
Sum DDTs	0.176	0.053
Sum DDT equivalent		
Heptachlor	0.062	0.255
cis-Heptachlorepoxide	0.0004	0.0004
trans-Heptachlorepoxide	0.0004	0.034
Sum heptachlor	0.063	0.289
Sum heptachlor equivalent		

UNEP PUF Results_Rounds #1&2_D

Matrix	AIR	AIR
Date	4/26/2011	9/27/2011
No.	1	2
Sample-ID	JAM-1-I	JAM-1-II
Country	JAMAICA	JAMAICA
Fat (%)		
Unit	ng filter^{-1}	ng filter^{-1}
HCB	0.188	0.226
Mirex	0.022	0.0004
Parlar 26		
Parlar 50		
Parlar 62		
Sum toxaphene	0	0
a-HCH	0.009	0.053
b-HCH	0.044	0.0004
g-HCH	0.0004	0.030

UNEP PUF Results_Rounds #1&2_E

Matrix	**AIR**	**AIR**
Date	4/26/2011	9/27/2011
No.	1	2
Sample-ID	JAM-2-I	JAM-2-II
Country	JAMAICA	JAMAICA
Fat (%)	-	-
Unit	ng filter^{-1}	ng filter^{-1}
PCB #28	6.20	6.51
PCB #52	4.26	4.46
PCB #101	2.55	2.51
PCB #118	1.34	1.34
PCB #138	1.49	2.29
PCB #153	2.16	1.36
PCB #180	0.560	0.794
Sum PCB_7	18.56	19.26
PCB-105	0.0760	0.0760
PCB-156	0.0206	0.0206

UNEP PUF Results_Rounds #1&2_F

Matrix	AIR	AIR
Date	4/26/2011	9/27/2011
No.	1	2
Sample-ID	JAM-7-I	JAM-7-II
Country	JAMAICA	JAMAICA
Fat (%)		
Unit	pg filter^{-1}	pg filter^{-1}
PCDD/PCDF		
2378-Cl_4DD	1.75	3.77
12378-Cl_5DD	9.03	14.20
123478-Cl_6DD	5.98	7.74
123678-Cl_6DD	11.24	16.56
123789-Cl_6DD	10.06	14.51
1234678-Cl_7DD	88.08	128.65
Cl_8DD	362.82	573.68
2378-Cl_4DF	7.34	16.36
12378-Cl_5DF	0.101	0.196
23478-Cl_5DF	8.94	17.93
123478-Cl_6DF	8.17	12.10
123678-Cl_6DF	10.22	14.57
123789-Cl_6DF	9.47	13.47
234678-Cl_6DF	0.49	3.59
1234678-Cl_7DF	45.57	68.77
1234789-Cl_7DF	0.171	0.211
Cl_8DF	32.75	54.71

UNEP PUF Results_Rounds #1&2_G

Matrix	AIR	AIR	AIR
Date	4/11/2011	4/26/2011	9/27/2011
No.	1	1	
Sample-ID	0111/2011-IV	JAM-7-I	JAM-7-II
Country	JAMAICA	JAMAICA	JAMAICA
Fat (%)			
Unit	pg filter^{-1}	pg filter^{-1}	pg filter^{-1}
dl-PCB			
PCB 77	264.92	264.92	309.16
PCB 81	44.16	44.16	32.74
PCB 126	36.07	36.07	40.42
PCB 169	21.21	21.21	9.02
PCB 105	562.83	562.83	599.75
PCB 114	39.55	39.55	46.89
PCB 118	229.55	229.55	232.02
PCB 123	139.67	139.67	144.80
PCB 156	106.18	106.18	121.58
PCB 157	29.58	29.58	30.62
PCB 167	52.05	52.05	51.16
PCB 189	17.03	17.03	10.50
WHO_{1998}-$TEQ_{no\text{-}PCB}$	3.850	3.85	4.17
WHO_{1998}-$TEQ_{mo\text{-}PCB}$	0.1831	0.183	0.199

WHO_{1998}-TEQ_{PCB}	4.033	4.03	4.37
WHO_{1998}-$TEQ_{PCDD/PCDF/PCB}$	26.96	26.96	43.24

Preliminary results for analysis of PFOS, PFOA and PFHxS in air samples (PAS/PUF) under the UNEP/GMP2 project

Item #	Sample ID	L-PFOS/(ng/L)	br-PFOS/ (ng/L)	Sum PFOS/ (ng/L)	L-PFOA/ (ng/L)	L-PFHxS/ (ng/L)
1	JAM (2017-I)	118	67	185	125	0.0
2	JAM (2017-II)	206	93	300	222	0.0
3	JAM (2017-III)	154	23	176	218	0.0
4	JAM (2017-IV)	120	97	217	181	0.0

Please note that these are preliminary data for your country at best quality available but these may not correspond to the final reporting data for the following reasons: • We report the results as picogram in a single PUF (pg/PUF); from PUF-11. • We do not always know the exposure location and the exposure time (and not the temperature to convert the values into other units; e.g., m^3). • We report the data for linear PFOS (L-PFOS), branched PFOS (br-PFOS) and the sum of the two (Sum PFOS). • In addition, we report the values for the new or possible future PFAS, namely PFOA and PFHxS. It shall be noted that we did not find quantifiable branched isomers; therefore, we report the linear isomer only. • The precursor compounds (FOSEs and FOSAs) were so low that they could not be quantified in a single PUF. We have combined 4 PUFs to obtain quantifiable numbers. These will be reported at a later stage. • There are still some samples from 2018/2019 in the lab, so that this reporting covers the 2017 samples only (exception is Philippines).

b. Water sampling

Coordination, methodology, sampling, analysis, results

Preliminary results for analysis of PFOS, PFOA and PFHxS in water samples under the UNEP/GMP2 project

Item #	Sample ID	L-PFOS/(ng/L)	br-PFOS/ (ng/L)	Sum PFOS/ (ng/L)	L-PFOA/ (ng/L)	L-PFHxS/ (ng/L)
1	JAM (2017-I)	1.14	0.17	1.31	0.64	0.21
2	JAM (2017-II) n	1.03	0.34	1.37	0.82	0.42
3	JAM (2017-III)	1.31	0.76	2.07	0.69	0.24
4	JAM (2017-IV)	1.02	0.29	1.31	0.69	0.22
5	JAM (2018-I)	1.11	0.47	1.58	1.08	0.55
6	JAM (2018-II)	1.37	0.50	1.87	0.96	0.16
7	JAM (2018-III)	0.92	0.43	1.35	0.39	0.12
8	JAM (2018-IV)	0.47	0.37	0.84	0.39	0.17

Please note that these are preliminary data for your country at best quality available but these may not correspond to the final reporting data for the following reasons: • We report the data for linear PFOS (L-PFOS), branched PFOS (br-PFOS) and the sum of the two (Sum PFOS). • In addition, we report the values for the new or possible future PFAS, namely PFOA and PFHxS. It shall be noted that we did not find quantifiable branched isomers; therefore, we report the linear isomer only. • In the column “Sample ID”, the first number refers to the year the sample was taken, the Roman numbers refer to the end of each quarter with I = 31 March, II = 30 June, III = 30 September, and IV = 31 December

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c. Human milk survey

Coordination, methodology, sampling, analysis, results

Historical comparison with previous rounds of human milk survey

UNEP Human Breast Milk Project 2010-2011

- The UNEP Human Breast Milk Project entailed the collection and analysis of fifty (50) human breast milk samples from urban and rural areas Some of these samples were pooled samples. The total number of samples analysed was 21. The details of sample collection are outlined in table 1. The sample collection started on December 1, 2010 and concluded on January 15, 2011.

- A composite sample which comprised all the samples was prepared and sent to a designated laboratory in Spain (CSIC) for analysis of Persistent Organic Pollutants (POPs), dioxins and furans while several pooled samples were prepared according to the categories listed in table 2 and the samples were analysed by the designated local laboratory (Pesticide Research Laboratory, PRL) for the same parameters indicated above.

- **Table 1: Sample Classification**

Location/ Description of Pool	**Number of samples**	**Pool number/individual samples**
Rural mother	11	11
Vegetarian	1	1
Smoking/exposed to smoke	2	2
Older mothers	14	1
Teen mothers	18	1
Second time mothers	3	1
Fish eater	1	1
Inner city mothers	15	1
Uptown mothers	3	1
Composite sample	1	1
Total		**21**

Table 2

SAMPLE NUMBER	SAMPLE CODES	CATEGORIES
1	JM-BM-01	Fish Eater
2	JM-BM-02	Smoker or worked in an environment with smoke
3	JM-BM-03	Vegetarian
4	JM-BM-36	Smoker or worked in an environment with smoke
5	JM-BM-37	Smoker or worked in an environment with smoke
6	JM-BM-08	Rural areas
7	JM-BM-12	Rural areas
8	JM-BM-13	Rural areas
9	JM-BM-22	Rural areas
10	JM-BM-24	Rural areas

Table 2 (cont'd)

SAMPLE NUMBER	SAMPLE CODES	CATEGORIES
11	JM-BM-34	Rural areas
12	JM-BM-41	Rural areas
13	JM-BM-43	Rural areas
14	JM-BM-49	Rural areas
15	JM-BM-50	Rural areas
16	JM-BM-P06	Older mothers
17	JM-BM-P07	Teenaged mothers
18	JM-BM-P08	Second time mothers
19	JM-BM-P10	Middle aged mothers
20	JM-BM-P11	Inner city mothers
21	JM-BM-P12	Uptown mothers

Status of the Breast Milk Project

Item Description	Status
Submit proposal for ethical approval by the Jamaican Ministry of Health.	Completed
Lobby with health clinics and hospital staff for further approval to access files and patient data in order to recruit eligible mothers for milk collection.	Completed
Distribution of questionnaires and breast milk collection.	Completed
Analysis of breast milk	Completed
Analysis of mirror samples (fish and cow's milk)	
Promoting of exclusive breastfeeding as well as informing mothers of the importance of breast milk to the growth and well being of the infant at the post natal clinics.	Completed

Status of the Breast Milk Project (cont'd)

Item Description		Status
Home visits (for mothers who could not be reached at the clinics).		Completed
Laboratory Training		Completed Administrators: Two representatives from Spain (Drs. Benin and Encara) Participants: Sherine Whyte, Raymond Reid and two representatives from the National Environment and Planning Agency.
Chemicals and glassware	Sample bottles: 100mL (120), 1000 mL (2) and 2000 mL (2)	Received
	Capillary Columns	Received in March 2011
	Reference Standards	Received in March 2011
	Soxhlet Apparatus and other requested items	Yet to be received

Basic POPs Results

Sample type: Human milk

Country: Jamaica

Sample no. 11012943

Date: 27/04/11

Lipid content [%]: 4.4

Parameter	**Concentration g/g lipid weight**
Aldrin	nd
Chlordane group	2.7
alpha-chlordane	nd
gamma-chlordane	nd
gamma-chlordane	2.8
Trans-nonachlor	4.5
Dieldrin	2.4

Basic POPs Results (cont'd)

Sample type: Human milk

Country: Jamaica

Sample no. 11012943

Date: 27/04/11

Lipid content [%]: 4.4

Parameter	**Concentration g/g lipid weight**
DDT group	173.0
o,p'-DDD	nd
p,p'-DDD	nd
o,p'-DDE	nd
p,p'-DDE	147.4
o,p'-DDT	1.0
p,p'-DDT	7.7
Endrin group	nd
Endrin	nd
Endrin ketone	nd

Basic POPs Results (cont'd)

Sample type: Human milk

Country: Jamaica

Sample no. 11012943

Date: 27/04/11

Lipid content [%]: 4.4

Parameter	**Concentration g/g lipid weight**
Heptachlor group	nd
Heptachlor	nd
Heptachlor-epoxide cis	nd
Heptachlor-epoxide trans	nd
Hexachlorobenzene	3.5
Hexachlorocyclohexane (HCH) group	
alpha-HCH	nd
beta-HCH	1.5
gamma-HCH	nd

Basic POPs Results (cont'd)

Sample type: Human milk

Country: Jamaica

Sample no. 11012943

Date: 27/04/11

Lipid content [%]: 4.4

Parameter	**Concentration g/g lipid weight**
Parlar (toxaphene) group	1.3
Parlar 26	0.5
Parlar 50	0.8
Parlar 62	nd
Mirex	nd

Explanations: nd = not detected (< 0.5 ng/g fat)

1) sum of alpha-chlordane, beta-chlordane and oxychlordane, calculated as chlordane

2) sum of o,p'-DDT, p,p'-DDT, p,p'-DDE and p,p'-DDD, calc

ulated as DDT

3) sum of endrin and endrin ketone, calculated as endrin

4) sum of heptachlor and heptachlor-epoxid (cis/trans), calculated as heptachlor

5) sum of parlar 26, parlar 50 and parlar 62

PCDD/Fs Results

Sample type: Human Milk

Country: Jamaica

Sample no. 11012943

Date: 27/04/11

Lipid content [%]: 4.4

2,3,7,8-substituted PCDF/PCDD	**Concentration pg/g lipid weight**
2,3,7,8-TCDF	0.417
1,2,3,7,8-PeCDF	0.204
2,3,4,7,8-PeCDF	1.71
1,2,3,4,7,8-HxCDF	1.19
2,3,4,6,7,8-HxCDF	1.16
1,2,3,7,8,9-HxCDF	0.457
1,2,3,4,6,7,8-HpCDF	0.0352
1,2,3,4,7,8,9-HpCDF	2.09
OCDF 0.181	0.109

PCDD/Fs Results (cont'd)

Sample type: Human Milk

Country: Jamaica

Sample no. 11012943

Date: 27/04/11

Lipid content [%]: 4.4

2,3,7,8-substituted PCDF/PCDD	**Concentration pg/g lipid weight**
2,3,7,8-TCDD	0.436
1,2,3,7,8-PeCDD	1.81
1,2,3,4,7,8-HxCDD	1.38
1,2,3,6,7,8-HxCDD	6.74
1,2,3,7,8,9-HxCDD	2.00
1,2,3,4,6,7,8-HpCDD	14.0
OCDD	56.9

Explanations:

< [LOQ] Below limit of quantification (LOQ)

PCB Results

Sample type: Human Milk

Country: Jamaica

Sample no. 11012943

Date: 27/04/11

Lipid content [%]: 4.4

Indicator PCB	**Concentration ng/g lipid weight**
PCB 28	0.955
PCB 52	0.317
PCB 101	0.688
PCB 138	7.94
PCB 153	10.1
PCB 180	3.87
Sum Indicator PCB	23.8

PCB Results (cont'd)

Sample type: Human Milk

Country: Jamaica

Sample no. 11012943

Date: 27/04/11

Lipid content [%]: 4.4

Mono-ortho PCB	**Concentration ng/g lipid weight**
PCB 105	1.94
PCB 114	0.256
PCB 118	5.75
PCB 123	0.0780
PCB 156	1.54
PCB 157	0.362
PCB 167	0.468
PCB 189	0.0717

PCB Results (cont'd)

Sample type: Human Milk

Country: Jamaica

Sample no. 11012943

Date: 27/04/11

Lipid content [%]: 4.4

Non-ortho PCB	**Concentration ng/g lipid weight**
PCB 77	0.00447
PCB 81	0.00174
PCB 126	0.01303
PCB 169	0.00526

Explanations:

< [LOQ] Below limit of quantification (LOQ)

d. National samples

Coordination, methodology, sampling, analysis, results

e. International inter-calibration study

Overview, national capacity, highlights

UNEP Inter-calibration 2010-2011 (Part 1)

	UNEP Intercalibration 2010				
Code:	**Ash** (ng/kg)	**Sediment** (ng/kg)	**Fish** (µg/kg)	**Mothers' Milk** (µg/kg)	**Standard 1 C** (ng/µl)
Date Received: October 26, 2010					
Date Analyzed: January 13-18, 2011					
(Wet) Weight received: 9.974g					
Lipid weight:	*		4.69E+06	5.50E+06	*
% Lipids:	*		0.47	0.55	*
Drins					
Aldrin	*		9.88	10.11	
Dieldrin	*		10.02	9.98	
Endrin	*		10.09	10.02	
Sum Drins Lower Bound (ND = 0)	*				
Sum Drins Upper Bound (ND = LOD)	*				

Notes

* not applicable

All values should be reported in ng/kg or pg/µl

ND: not detected < than value expected

NA: not analyzed

UNEP Inter-calibration 2010-2011 (Part 2)

	UNEP Intercalibration 2010				
Code:	**Ash** (ng/kg)	**Sediment** (ng/kg)	**Fish** (µg/kg)	**Mothers' Milk** (µg/kg)	**Standard 1 C** (ng/µl)
Date Received: October 26, 2010					
Date Analyzed: January 13-18, 2011					
(Wet) Weight received: 9.974g					
Lipid weight:	*		4.69E+06	5.50E+06	*
% Lipids:	*		0.47	0.55	*
Chlordanes					
trans-Chlordane	*		10.06	10.14	
cis-Chlordane	*		10.02	10.12	
trans-Nonachlor	*		9.86	10.06	
cis-Nonachlor	*		9.92	10.08	
Oxychlordane	*		10.01	10.01	
Heptachlor	*		10.04	9.96	
cis-Heptachlorepoxide	*		10.05	9.87	
trans-Heptachlorepoxide	*		10	9.82	
Sum Chlordane Lower Bound (ND = 0)	*				
Sum Chlordane Upper Bound (ND = LOD)	*				

Notes

* not applicable

All values should be reported in ng/kg or pg/µl

ND: not detected < than value expected

NA: not analyzed

UNEP Inter-calibration 2010-2011 (Part 3)

	UNEP Intercalibration 2010				
	Ash	**Sediment**	**Fish**	**Mothers' Milk**	**Standard 1 C**
Code:	(ng/kg)	(ng/kg)	(µg/kg)	(µg/kg)	(ng/µl)
Date Received: October 26, 2010					
Date Analyzed: January 13-18, 2011					
(Wet) Weight received: 9.974g					
Lipid weight:	*		4.69E+06	5.50E+06	*
% Lipids:	*		0.47	0.55	*
DDTs					
p,p'-DDT	*		10.04	10.16	
o,p'-DDT	*		10.07	10.15	
p,p'-DDE	*		10.04	10.04	
o,p'-DDE	*		10.04	10.07	
p,p'-DDD	*		10.04	9.94	
o,p'-DDD	*		10.04	10.01	
Sum DDTs Lower Bound (ND = 0)	*				
Sum DDTs Upper Bound (ND = LOD)	*				

Mirex	*		9.92	10.17	
Hexachlorobenzene			9.98	10.12	

Notes

* not applicable

All values should be reported in ng/kg or pg/µl

ND: not detected < than value expected

NA: not analyzed

UNEP Inter-calibration 2010-2011 (Part 4)

		UNEP Intercalibration 2010		
	Ash	**Sediment**	**Fish**	**Mothers' M**
Code:	(ng/kg)	(ng/kg)	(ug/kg)	(ug/kg)
Date Received: October 26, 2010				
Date Analyzed: January 14-18, 2011				
(Wet) Weight received: 9.974g				
Lipid weight:	*	*	4.69E+06	5.50E+06
% Lipids:	*	*	0.47	0.55
Marker PCBs				
PCB #28			2.008	2.012
PCB #52			1.984	1.992
PCB #101			2.01	2.018

PCB #118			2.002	2.009
PCB #138			2.016	2.023
PCB #153			1.984	1.998
PCB #180			1.994	2.002
Sum Marker PCB Lower Bound (ND = 0)				
Sum Marker PCB Upper Bound (ND = LOD)				

Notes

* not applicable

All values should be reported in ng/kg or ng/µl

ND: not detected < than value expected

NA: not analyzed

4. Capacity building activities

    a. Trainings

    Overview, training targets and outputs

Benefits of the project

- Capacity building: training of analysts who will be able to train other analysts from the national and regional countries to analyse PUFs, breast milk, fish, water, soil, vegetable matter etc.
- Supply data for the global project.

Education of the targeted breast feeding mothers.

5. Involvement in other monitoring activities and networks

6. Sustainability plan

7. Results and achievements

Conclusion and recommendations

Challenges faced with the project

1. Mothers' reluctance to participate due to local folklore and superstitious beliefs. For example some mothers believe that by donating some of their breast milk will cause harm to them and their babies. Some declined for unknown reasons.

(2) Sample collection

- Late approval of project by Ministry of Health (Jamaica)
- Inaccurate address (only to find out upon reaching the address provided)
- Accurate information provided but declined to participate (this was found out only after travelling long times and distances).
- In certain urban communities, persons are not known by their registered names.
- Cooperation depends on the dress code of the sample collectors and the mode/type of transportation employed.
- Inadequate sample volumes

Instrument failures

(4) Pooling – there was not sufficient samples from most of the proposed categories e.g. diet, smoking habits, geographic locations etc.

(5) Communication – lack of clear communication between UNEP and the National Coordinator/Focal Point seemed to be the major cause for us not receiving the requested chemicals and glassware to start the project on time.

Things to be done and recommendations

(1) If the outstanding requested items received e.g. the automatic Soxhlet apparatus, the analyses would have been completed more quickly. So, it would be good to invest in this apparatus (~US$500).

(2) Sampling should be extended to more rural areas in order to get data that is more representative of Jamaica. More samples should be collected from the other proposed categories along with education of breast feeding mothers on the subject in question.

(3) Installation of two new GC-MS (one triple quad).

Acknowledgements

- UNEP
- National Coordinator for Jamaica: Professor Tara Dasgupta
- National Focal Point: Ministry of Health (Gillian Guthrie)
- Analyst: Raymond Reid
- All other participants e.g. doctors, nurses, breast feeding mothers etc.

ANNEX/ES

Tables, figures, pictures