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**THIRD REPORT: SUPPLEMENTARY REPORT**

**FOR QUANTITATIVE ASSAY OF IODINE CONTENT IN SALT SAMPLES IN BOXES 3 & 4**  
**COLLECTED FROM HOUSEHOLDS IN 19 PROVINCES DURING**  
**THE ON-GOING DHS 2017/2018**

This is a supplementary report to the second (2<sup>nd</sup>) detailed report that we submitted to your office (UNICEF PNG) on the 18<sup>th</sup> October 2018. The results obtained for the iodine content in the 5428 (Five thousand four hundred and twenty eight) salt samples collected from households in 21 of the 22 provinces in PNG were presented in an Excel spreadsheet and summarized in four tables using the format recommended in the recent UNICEF guidelines for the presentation of results on the monitoring of salt iodization programs.

However, on the 15<sup>th</sup> October 2018 two additional boxes (Box 3 & Box 4) containing salt samples collected during the on-going DHS were delivered to the micronutrient research laboratory (MRL) in Division of Basic Medical Sciences (BMS) School of Medicine and Health Sciences (SMHS) University of PNG (UPNG).

In the MRL, the information on the enclosed sheets of paper in each of the boxes and the large zip-locked polythene bags containing a number of smaller zip-locked bags with salt samples, were checked and recorded. The names and number of clusters, including the identification number (ID#) on the label on most of the smaller zip-locked polythene bags with salt samples, were also recorded. Based on the recorded information, the salt samples were mostly collected from households in 19 of the 22 provinces in PNG. The two boxes did not contain salt samples from the National Capital District (NCD), Southern Highlands Province (SHP) and Jiwaka.

It is Important to note that no information was available in 15 of the small zip-locked bags with salt samples. The boxes with the salt samples were stored in a cool room until required for analysis.

A quantitative assay of iodine content in each salt sample was carried out, using the WYD Iodine Checker, which is specifically used to measure the concentration of iodine in iodized salt. The concentration (content) of iodine is expressed in **parts per million (ppm)** which is equivalent to one **mg of iodine per kilogram of salt (mg/kg)** {mg/kg = ppm}.

The WYD Iodine checker measures the concentration of iodine in salt iodized with either **Potassium Iodate or Potassium Iodide**.

The analytical procedure and criteria for interpretation of the results were as presented in the 2<sup>nd</sup> report.

## **RESULTS & COMMENTS:**

### **Information obtained from the zip-locked bags:**

The results presented below are based on the limited information obtained from the labels on both the large brown envelopes and the smaller zip-locked bags contained in the boxes. Appropriate corrections / modifications of the names can be made, since some of the labels were illegible.

Table 1 shows the codes for the provinces, names of the provinces, number of clusters per province and the corresponding number of salt samples analyzed. The detailed information obtained from the label on each zip-locked bag from each of the 19 provinces is presented in the attached spreadsheet. The information includes the following:

**Code for each province, Cluster #, Household #, District #, LLG #, Ward #, Census unit & Salt brand**

The corresponding iodine content (Mean  $\pm$  standard deviation) in the salt from each of the households is also presented in the spreadsheet. Each salt sample was analyzed in duplicate.

It is important to note that the information given to our laboratory did not include the number of households with no salt on the day of sample collection. Thus, the information is not included in the Excel spreadsheet and in Table 1.

**Iodine content in the salt samples:**

A total of 1283 zip-locked polythene bags with salt samples were received. The brand names of most of the salt samples were indicated on the labels on the zip-locked bags as recorded on the attached Excel spreadsheet (*DHS iodine in salt results 3<sup>rd</sup> report Nov. 2018\_vjt*).

On inspection, each of the salt samples can be categorized as fine table salt, typical of the common brands of table salt sold in the National Capital District (NCD) PNG.

<b>Code #</b>	<b>Name of Province</b>	<b>Number of clusters</b>	<b>Number of salt samples</b>
1	Western (WP)	2	6
2	Gulf	10	46
3	Central (CP)	1	13
4	NCD	--	--
5	Milne Bay (MBP)	3	3
6	Northern (NP)	12	133
7	SHP	--	--
8	ENGA	1	2
9	Western Highlands (WHP)	10	73
10	Simbu	5	38
11	Eastern Highlands (EHP)	8	57
12	Morobe	13	156
13	Madang	7	67
14	East Sepik (ESP)	22	190
15	West Sepik (WSP)	8	55
16	Manus	6	68
17	New Ireland (NIP)	4	48
18	East New Britain (ENB)	7	123
19	West New Britain (WNB)	15	109
20	AROB	3	26
21	Hela	8	55
22	Jiwaka	--	--
	Unknown		15
	<b>TOTAL</b>	<b>145</b>	<b>1283</b>

**NOTE:** No salt samples from provinces # 4, 7 and 22.

The results obtained for the iodine content in the 1283 salt samples from 19 of the 22 provinces are presented in the attached Excel spreadsheet. In this supplementary report the data in the spreadsheet has not been analyzed and presented as in the previous report because of the very low number of salt samples from some of the provinces. The data for the various provinces in the current spreadsheet should be appropriately combined with the data in the spreadsheet in the second report and reanalyzed. This will provide the results for all the salt samples collected from households in 21 of the 22 provinces sent to the laboratory for analysis to date.

<b>Code #</b>	<b>Names of Provinces</b>	<b>Number of clusters</b>	<b>Number of salt samples analyzed</b>
1	WESTERN (WP)	21	214
2	GULF	22	183
3	CENTRAL (CP)	26	303
4	NCD	34	452
5	MILNE BAY (MBP)	26	315
6	NORTHERN (NP)	22	286
7	SOUTHERN HIGHLANDS (SHP)	0	0
8	ENGA	26	186
9	WESTERN HIGHLANDS (WHP)	26	206
10	SIMBU	14	140
11	EASTERN HIGHLANDS (EHP)	30	225
12	MOROBE	34	486
13	MADANG	32	462
14	EAST SEPIK (ESP)	34	374
15	WEST SEPIK (WSP)	21	277
16	MANUS	30	463
17	NEW IRELAND (NIP)	25	376
18	EAST NEW BRITAIN (ENB)	33	607
19	WEST NEW BRITAIN (WNB)	30	414
20	AROB	11	132
21	HELA	25	197
22	JIWAKA	30	356
	UNKNOWN	1	26
	<b>TOTAL</b>	<b>553</b>	<b>6680</b>

**NOTE: No salt samples from province # 7. Unknown: zip-lock bags containing salt but no labels**

The number of salt samples collected from the different clusters in the 21 provinces is summarized in Table 2. The result shows that 6680 salt samples were collected from 553

clusters in 21 of the 22 provinces. The Excel spreadsheets attached to the second report and the current supplementary report contain the iodine content in the 6680 salt samples.

**Additional comments and further analysis of the data can be presented on request.**

The details of the additional budget expenditure and acquittal will be submitted as soon as all payments and purchases are completed.

We thank you very much for your continuous support and cooperation in this very important project.

Kindest regards,



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