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Household Income and Expenditure Survey (HIES)
Administrative Report
2016

National Bureau of Statistics
Ministry of Finance & Treasury
Male', Maldives

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1 INTRODUCTION



The Household Income and Expenditure Survey (HIES) is conducted by National Bureau of Statistics (NBS) with the most recent HIES conducted in 2016. In HIES 2016, 330 enumeration blocks were randomly selected from all 20 administrative Atolls and Male' with a sample of 4,985 households.

The first nationwide HIES conducted in 2002-2003 covered 834 households from the capital Male' and 40 islands randomly selected from all the Atolls. And the second national wide HIES was conducted in 2009-2010 covered 600 households from the capital Male' and 1,460 households from the islands randomly selected from all the Atolls.

HIES 2016 is the first such survey where the sample was designed in such a way that the results are representative at the level of each Atoll in addition to Male'. The survey was conducted in 172 administrative islands (excluding Male') in the country at the time. The high coverage of the islands and the resulting travel costs increased the total cost.

NBS plans to conduct a nationwide HIES every 5 years in the future.

2.1 Objective of the survey

The main objective of HIES is to produce reliable statistics on different components of income and expenditure of households in Male' and the Atolls to assess the economic well-being of the population. Specifically, the results will be used to bring about improvements in the national accounts, consumer price index and the poverty statistics of the country. Additional aspects to cover domestic tourism were included upon request from the Ministry of Tourism to collect data required for tourism satellite accounts. Similarly details on health expenditure were included upon request from the Ministry of Health to collect data required for national health accounts.

2.2 Importance and use of HIES results

HIES results will be of great statistical significance for socio-economic analysis. HIES results will be particularly essential and used for following purposes:

- To show the most recent composition of consumption expenditure of households which will be used to update the CPI weights
- To improve GDP estimates particularly for the components of final consumption expenditure of households.
- To measure living standard and indicate the gap between different social strata
- To analyze distribution of households in terms of income groups and proper statistical measure of income inequality such as Gini coefficient.
- To measure the poverty situation of households and update the existing poverty estimates and indicators.
- Used to develop and update relevant SDG indicators
- Furthermore, it will be used by other government agencies to revise the model used for poverty targeting for social protection, National health account compilation and to measure domestic tourism.

3 SURVEY PREPARATION

3.1 Work Plan and Travel Plan

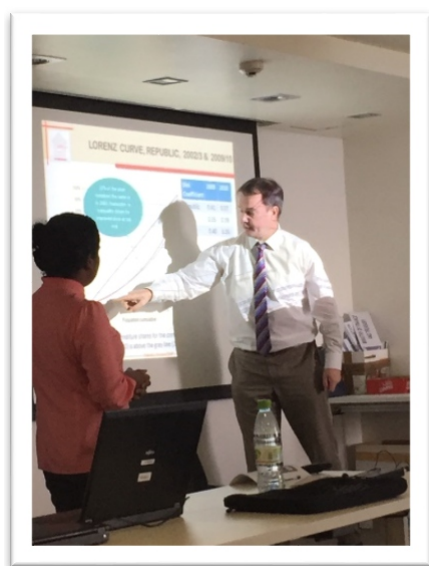
Before the beginning of the survey, a detailed work plan for HIES was made. The work plan includes all the activities required for survey preparation, implementation and management, from the inception to the completion of the survey reports. It includes purchase of equipment and materials, questionnaire development, drawing the sample, recruitment and training of enumerators and other survey personnel, fieldwork activities, data processing and data management, and data analysis, documentation, and report writing. For each of these specific areas, a list of tasks to be completed, and the targeted dates of for their completion were specified in the detailed work plan.

Many of the survey activities are interrelated and hence they must be properly coordinated and monitored for the smooth implementation. At the beginning of 2016 a travel plan was made for the Atoll/Islands, which details out the timing of the field work in different islands and related tasks. As the survey requires travel within 20 atolls, a travel plan was prepared in accordance to the survey work plan. This helped in ensuring that the deadlines set for field operation were met and the field operation went according to the work plan.

HIES work plan and travel plan are given in annex 2.

3.2 Questionnaire Designing, pretest and printing

The questionnaire was developed by the National Bureau of Statistics (NBS) in consultation with the experts from the World Bank (WB), International Labour Organization (ILO) and United National Economic and Social Commission for Asia and the Pacific (UNESCAP). Several meetings were conducted to discuss the HIES questionnaire during 2015, beginning with a data users workshop held on 22 April 2015. After conducting several pretests (K.Gulhu, K. Dhiffushi, K.Himmafushi, and Male') during the period June 2015 to January 2016, the questionnaire was finalized in January 2016.





In order to accommodate important data requirements of other government agencies, meetings were held with relevant personnel. In this regard focused discussions were held with Ministry of Tourism to incorporate the domestic tourism into the HIES Questionnaire. Similarly, meetings were held with Ministry of Health to formulate the questions to capture details of health expenditure required to compile National Health Accounts.

During the HIES questionnaire design, International Labour Organization (ILO) provided the technical guidance in the development of Labour Force module, which was newly introduced in HIES 2016 according to the most recent ILO guidelines. World Bank (WB) provided the technical guidance to improve the methodology to better capture the poverty aspects, with a special focus on including questions relevant to capture the ownership of durable goods and their user value, capture food consumption and food away by a newly introduction food consumption module, and to better capturing the rental value of owner occupied housing. Technical experts from World Bank were involved in some of the pretests and during the questionnaire finalization process. United National Economic and Social Commission for Asia and the Pacific (UNESCAP), Statistics advisor provided overall technical guidance in development of the questionnaire, during the data users workshop and participated in initial pretests. This work was led by the technical team of NBS.



3.2.1 Questionnaires used in the survey

Data collection of HIES was done using 8 different questionnaires. In each questionnaire there is a common identification part. This part includes Atoll/Island, block number, household name and household serial number.

The survey consists of two Listing forms: Listing Form 1 for listing all the structures and households in the selected enumeration block (EB), and Listing Form 2 for listing all the household members in the selected households and six detailed Questionnaires: Household form, Expenditure unit form, Individual form, Labour Force Module, Employment and Income form, and the Consumption form.

- **Listing Form (Structure listing)** is used to enumerate all the structures and households in the selected Enumeration block in preparation for the actual household survey. Enumerators was instructed to list all the independent structures, such as shops, schools, mosques and all the households living in the housing units. One set of forms to be completed for each selected enumeration block.
 - The information collected in this form includes:
 - Name of building/structure or number,
 - Floor number,
 - Type of dwelling,
 - Name of Household Head
 - Number of Household members (total number of Maldivians and total number of foreigners)

For Office Use	Remarks (specify the code)	Place Serial No	<p>! A household (HH) consists of one or more people who live in the same dwelling and also share meals or living together.</p> <p>● Does one or more household lives here?</p> <p>● How many households live in here?</p> <p>Name of Building \ Structure Name or No</p>	Place / Floors occupied by HH (only for multistorey buildings)	<p>Type of dwelling occupied:</p> <p>1- House/ flat/ apartment</p> <p>2- Collective living quarter (less than 10 members)</p> <p>3- Collective living quarter (more than 10 members)</p> <p>4- Establishment/Guest House/Hotel/ Room for rent</p> <p>5- Others</p>	<p>Is there any person living/ sleeping here?</p> <p>1- Yes</p> <p>2- No</p> <p>END</p> <p>! Household head is the person who makes major decisions and should be a household member</p> <p>Name of household Head</p>	From Haa Form 2		Household Serial No.	Sample serial Number				
							transfer the number of person's in the household							
							Size of the household							
							1-Maldivian	2-Foreigners						
1	2	3	4	5					6	7	8	9	10	11
					1	2	3	4	5	1	2			
					1	2	3	4	5	1	2			
					1	2	3	4	5	1	2			

The remaining forms was filled only in the selected households.

- **Household member list (Form 1)** consists of basic demographic information of individual household members. This form was filled only for the households which were selected for the survey. In this form all the regular members in the household was recorded regardless of their age.
 - Important areas covered in Listing Form 1 includes:
 - Names of all regular members of household,
 - sex, nationality,
 - age whether below 15 or above 15 years
 - Identify the expenditure unit

Household Income & Expenditure survey 2016

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Ministry of Finance and Treasury
Male', Maldives

Household Member List

Form 1

Place Identification

1- Atoll and Island (Ward for Male') Code

Remarks

Confidentiality of the information!

The information collected from the individuals and households is accorded confidential treatment and will not be used for any legal purpose. It is an offence to publish or disclose any individual or household information

Place Identification

1-Structure number Code

2- Name of building/unit or number/Floor

3- Household serial number Code

4- Contact person and contact number

5- Number of pages filled for this household Code

Q1- Who are the regular members who eats and sleeps in this household

1.1- How many Maldivians? Guests and visitors are not included

1.2 How many Foreigners?

Q2- Who are the regular members who sleeps in this household and eats elsewhere

Name (List the Household head first)	If a person falls to Q5 END for this person	Person Number	Nationality	Gender	Age	Q6 Expenditure Unit no.	Form 3 Expenditure Units	Form 4 Individual form completed	Form 5 Labor force module Completed	Form 6 Employment & Income form completed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	<input type="checkbox"/>		1 2	1 2	1 2					
2	<input type="checkbox"/>		1 2	1 2	1 2					
3	<input type="checkbox"/>		1 2	1 2	1 2					

To be checked by the interviewer
If a form does not have to be filled for a person listed cross column 8-11

Tick ☒ completed forms

- Household form (Form 2) consists of information on housing, household composition, household durables, repair and maintenance of house, expenditure on furniture, kitchen utensils and household furnishing items, health expenses and travel by members of the household, housing loan and money transfer. In this form the information need to be recorded based on the entire household. One form has to be completed for each household.

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Household Form

Form 2

IDENTIFICATION

1. Atoll and island (Ward for Male'): Code

2. Block Number: Code

3. Name of the unit: Code

4. Household serial number: Code

5. Survey month/period: Code

6. Name of the household head: Code

7. Name of the respondent: Code

8. Contact number of the respondent: Code

1. Living Condition

1. Type of dwelling unit occupied by the household

1. House

2. Flat / Apartment

3. Collective Living quarters

2. Is this a multi storey building?

1. Yes 2. No Skip to Q5

3. Which floors are occupied by this household? (Multiple answers)

Gr 1 2 3 4 5 6 7 8 9 10 11 12 13 14

10. Number of rooms in the HH, size of rooms (area in sqft) and the number of occupants (Do not include the rooms used for business purposes; If a tenant's meals are taken with the household members, include that room.)

Type of room	Number	Total area (sqft) including attached toilets	No of people sleeping
(1)	(2)	(3)	(4)
1. Bed rooms, used for sleeping			

- Expenditure unit form (Form 3) consists of information on expenditures on household maintenance items, entertainment, sports and recreational activities, transport, postal and petrol, personal care, media and other relatives, clothing and foot wear, education and food away from home, other loans, investment and financial status of household. One form has to be completed for each group of family members who buy their goods separately. This form was introduced to better capture the expenditure information as household head often do not know details of expenditures of nuclear families and some individuals who live within the extended family. More than one form can be filled per household depending on the number of individuals who buy goods separately.

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Expenditure Unit
Form 3

Confidentiality:
The use of the information obtained from this survey on individual's or specific household's in manner that will disclose the identity of any person or institution is prohibited. The information obtained will be published to represent the whole population.

IDENTIFICATION
No. of forms filled of

1. Atoll and island (Ward for Male):
2. Block Number:
3. Name of the unit:
4. Household serial number:

5. Serial No of expenditure unit (Form 1, col. 7):
6. Name of Persons in this expenditure unit:
7. Name of the head of this unit:
8. Name of the respondent:
9. Contact number of the respondent:

1. Household Maintenance (past month)
1. During the past month, did any member of this expenditure unit purchase any household maintenance items, or receive any items from a non-household member?

Code	Item	Purchased or received?		Unit	During the past month: no. of items purchased/ received as a gift		Total Amount spent during the past month
		1. Yes 2. No (Skip to next item)	1. Piece 2. Set 3. Case 9. Others		Purchased	Received	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	Value in MVR
0561103	Detergent	1 2	1 2 3 9				

2. Entertainment, Sports and Recreational Activities (past month)
2. During the past month, did any members of this expenditure unit purchase any items/services related to entertainment, sports or recreational activities, or receive any item/service from a non-household member?

Code	Item	Purchased or received?		Unit	During the past month: no. of items purchased/ received as a gift		Total Amount spent during the past month
		1. Yes 2. No (Skip to next item)	1. Piece 2. Set 3. Case 9. Others		Purchased	Received	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	Value in MVR
0931101	Toys	1 2	1 2 3 9				

- **Individual form (Form 4)** consists of basic demographic characteristics on all household members, migration, education for those aged 6 years, asset ownership of selected individual goods, marital status for those aged 15 years and fertility for women aged 15 years and above. The form need to be filled for each individual who is identified as a regular member of the household from Form 1. The form is in a booklet form consists of 7 member's information (7 sheets). One sheet per person has to be completed. If more than 7 members was there in the household, then more than one booklets were filled.

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Individual Form
Form 4

Confidentiality:
The use of the information obtained from this survey on individual's or specific household's in manner that will disclose the identity of any person or institution is prohibited. The information obtained will be published to represent the whole population.

IDENTIFICATION
Number of forms filled for the household of

1. Atoll and island (Ward for Male):
2. Block Number:
3. Name of the unit:
4. Household serial number:

General		for all ages		Migration		for all ages	
1. Name:	<input type="text"/>	Person No.	<input type="text"/>	12. What is your place of registration?			
2. Contact number of the respondent:	<input type="text"/>			1. This island			
3. Was information given by the individual person?	1. Yes 2. No			2. Not registered in Maldives			
4. Sex	1. Female 2. Male			3. Another island (specify atoll and island)	<input type="text"/>	<input type="text"/>	Administrative use
5. What is your date of birth?	Year <input type="text"/> <input type="text"/> <input type="text"/> Month <input type="text"/> <input type="text"/>			13. What is your usual place of residence?			
				The place where you have lived for 1 year or more			

- **Labour Force Module (Form 5)** consists of information on labour market of 15 years and above population. Labour Force module, was newly introduced in HIES 2016 to capture the labour market statistics as per the newly revised concepts and definitions of work by ILO at the 19th ICLS. The form identifies population engaged in all forms of work including time-use in these different forms of work. Those who worked for pay or profit or employed population were identified and those unemployed. For those who are not employed, data on reasons for not searching or available and focused questions on their preferred types of work and other aspects were studied. In addition, income from other sources (property income, transfer income) were gathered for those not employed. One form to be completed for each member of the household who is aged 15 years and above.

- Important areas covered in the Labour Force Module includes:
 - Own use production of goods and services
 - Voluntary work
 - Internship/ training
 - Employment (work for pay or profit)
 - Unemployment
 - Other incomes (property income, transfer income)
 - Unpaid care work (goods and services for family members)
 - Unpaid trainee work
 - Reasons for not seeking /not available for paid employment

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Labour force Module
Form 5

IDENTIFICATION
No. of forms filled of

1. Atoll and island (Ward for Male):
2. Block Number:
3. Name of the unit:
5. HH serial number:
5. Name of Person:
6. Person Number:

15 Years & Above

1. OWN-USE PRODUCTION (Mostly Household consumption)
Do not include hours spent in the income generating activity
1. During the **past 4 weeks**, did you grow crops/vegetables or fruits in your own land or kitchen garden for the purpose of food or any other household use?
1. Yes ☐ ☐ ☐ Total hours spent during the past 4 weeks
2. No ☐ ☐ ☐

2. OWN-USE PROVISION OF SERVICES
6. During the **past week**, did you spend anytime doing unpaid housework, taking care of the elderly family members/children, people with special needs, preparing meals for household members, cleaning, shopping etc?
1. Yes ☐ ☐ ☐ Total hours spent during the past week
2. No ☐ ☐ ☐
For Example: taking care of elderly family members, children, people with special needs, washing clothes, cleaning, ironing.

- **Employment and Income Form 6** consists of information on employment and income, one form to be completed for each member of the household who is aged fifteen years and over and who was identified as employed person in form 5 (Labour force module).
- Important areas covered in the Employment and Income Form includes:
 - Details of primary occupation (industry, occupation, working hours, employment status, etc.)
 - Income from family or own business (Number of employees, revenue, costs, profit, etc.)
 - For Employees (type of contract, pay leaves, insurance, etc)
 - Wages and salaries from primary occupation
 - Details of Secondary occupation and income
 - Whether engaged in Other income generating activities (engaged in addition to secondary)
 - Availability for additional work
 - Property income
 - Transfer income

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Employment & Income
Form 6

Confidentiality:
The use of the information obtained from this survey on individual's or specific household's in manner that will disclose the identity of any person or institution is prohibited. The information obtained will be published to represent the whole population.

IDENTIFICATION No. of forms filled of

1. Atoll and island (Ward for Male):
2. Block Number:
3. Name of the unit:
4. HH Serial number:
5. Name of Person:
6. Person Number:

(for all 15 years & above)

1. PRIMARY OCCUPATION

1.1. What was the main economic activity carried out at the place where you worked during the past week?
For example: Primary / Secondary education, Weaving thatch, Garment shops, Sea transport, Planting chilies, Reef fishing, Hotels/Café, Pharmacy, Construction or such activity which generates income to you or your family
If you are temporarily absent from work, state that economic activity
Industry/Main activity of your place of work:
ISIC:

3. Is that enterprise /business where you worked registered with the relevant national authority?
1. Yes 3. No
2. In the process of registration 4. Don't know

4. What is the name of your place of work and your designation in that economic activity?
Organization:
Designation:

- o **Consumption (Form 7)** consists of information on household expenditure on food. In this form the information need to be recorded based on the entire household. One form has to be completed for each household.
- Important areas covered in the Consumption form includes:
 - o Consumption of food items
 - o Home produce
 - o Gifts recieved
 - o Purchase of food items
 - o Food away from home by the entire household

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Consumption
Form 7

Confidentiality:
The use of the information obtained from this survey on individual's or specific household's in manner that will disclose the identity of any person or institution is prohibited. The information obtained will be published to represent the whole population.

IDENTIFICATION

1. Atoll and island (Ward for Male):
2. Block Number:
3. Name of the unit:
4. Serial number of household:
5. Name of the respondent and person number:
6. Contact number of the respondent:

Survey Date:

Q3. During the past 7 days, did any member of this household consume or purchase any of the following food items I am asking?

Item Code	Item Name	Consumption in the past 7 days				Purchased in the past 7 days				Item Name	
		During the past 7 days, did any HH member consume (ITEM)? 1. Yes 2. No <input type="checkbox"/> Skip to Col 9	What was the quantity of (ITEM) consumed in the last 7 days?		How much of it was own production? IF NONE, WRITE "0" QTY	How much of it was received as gifts or by other means? (Do not include items purchased by the HH) IF NONE, WRITE "0" QTY	During the past 7 days did any members of this household purchase (item)? 1. Yes 2. No <input type="checkbox"/> Skip to next item	Unit 1. Gram 2. Kilogram 3. Millilitre 4. Litre 5. Tea Spoon 6. Table Spoon 7. Laahi 8. Gandu 9. Other (Specify)	What was the TOTAL quantity of (ITEM) purchased during the past 7 days and how much did you spend in total? QTY AMOUNT (MVR)		
			Unit 1. Gram 2. Kilogram 3. Millilitre 4. Litre 5. Tea Spoon 6. Table Spoon 7. Laahi 8. Gandu 9. Other (Specify)	Size 1. Small 2. Medium 3. Large							QTY
01.1.1	Bread and cereal related items										
01.1.1.1	Rice	1. Yes 2. No <input type="checkbox"/> Skip to Col 9									
0111101	Normal Rice	1 2	1 2 3 4 5 6 7 8 9	1 2 3		1 2	1 2 3 4 8 9			Normal Rice	
0111102	Basmathi Rice	1 2	1 2 3 4 5 6 7 8 9	1 2 3		1 2	1 2 3 4 8 9			Basmathi Rice	
0111104	White Rice	1 2	1 2 3 4 5 6 7 8 9	1 2 3		1 2	1 2 3 4 8 9			White Rice	
0111106	Brown Rice	1 2	1 2 3 4 5 6 7 8 9	1 2 3		1 2	1 2 3 4 8 9			Brown Rice	

3.2.2 Pre-testing of questionnaire

When drafting the HIES questionnaire, pre-test was conducted at every stage to ensure the questions were framed in a suitable way and to ensure the required information was collected. The pre-test was carried out for four rounds. In the first round, the pre-test was conducted in K. Gulhi on 10 June 2015. A total of 18 staff from NBS joined in this pre-test to administer the survey. Each team selected two households and filled the HIES questionnaires. During the pre-test each and every question was tested to ensure that the information gathered follows the skip pattern given, whether the skip pattern is suitable, the time taken in each household to fill the questionnaire. In addition, interpretation, translation was tested to see if the household members could easily understand the questions. During this pre-test UNESCAP Regional advisor on statistics participated.

During the first pre-test consumption module was tested using both recall and diary method. Consumption module was kept in the surveyed households and request to fill the form for a week. The responsibility to collect back the forms were assigned to the island council office. However, NBS did not received any form back because the majority of the households did not fill the diary.

During the first pre-test the NBS staff noticed the difficulty for households to recall the food purchased during the past year. Also, the design of the questionnaire was difficult for the team to capture the given information. With regard to household construction, the questions did not clearly mention to exclude the major constructions undertaken by the households. The flow of the questions was not easy.

Hence, based on the lessons learnt on the pre-testing, the questionnaire was amended to adjust for the stated problems. With this, major revisions were made to Form 7 (Household food consumption). The households were given the options to list 2 additional items in each category. The food purchase was limited to past 7 days and a standard measurement sheet was prepared to use in field as it was difficult for households to recall food consumed during the past 7 days. Additional instructions were included in different forms and the flow of the questions in the different questionnaires were revised.

With this revision to the questionnaire, the second round of pre-test was conducted in K. Dhiffushi on 22 December 2015. A total of 16 staff from NBS joined in this pre-test to administer the survey. In this pre-test household form, individual form, labour and income form and consumption form was tested. In this pre-test only recall method was used. During this pre-test, NBS staff noticed the difficulty in filling up the labour and income form as the form was too lengthy. And some inconsistency in the flow of the questionnaire was noticed. Hence, based on the knowledge gained during the pre-test, it was decided to have two separate form for labour and income. All the labour force related questions were separated and introduce a new form under name labour force module. Some of the questions which was difficult to capture was separated into sub questions. Employment and income related questions was kept in the labour and income form however the form name was renamed to employment and income form. All these changes were brought to the questionnaire after consulting ILO experts via email and skype calls. Additionally, the flow of the questions in the different questionnaires were revised.

With this revision to the questionnaire, the third round of pre-test was conducted in Male' and K. Himmafushi on 4 January 2016. A total 17 teams participated in the field work in Male' and 3 teams in the K. Himmafushi. The data collection for the pretest was carried out for 3 days in K.Himmafushi and 5 days in Male'. For the data collection, blocks were selected in such a way that it does not overlap with the enumeration blocks selected for the actual survey. Total 4 blocks from Male' and 1 block from K.Himmafushi was selected for the pretest. In the first day, listing was carried out in the selected blocks, and in the second day households were selected randomly. The procedures used in the pretest were the same as planned for the actual field work. World Bank team was actively involved in this pre-test.



During the pre-test in Male', it was noticed that there are many expenditures incurred at individual level which the household head was unable to report. Also expenses incurred for food away from home by different household members made it difficult for household head to report. Because of the standard measurement sheet used, it delayed the field hours per household by additional 3-4 hours. The household was given the option to include consumer durables purchased and a lot of ad hoc item was reported. Also, it was difficult for household members to recall the purchased amount and the resale value of the consumer durable items.

After the pre-test, the discussion to revise the questionnaire was carried out with the World Bank team. The difficulties identified in the field was addressed and revisions were made as follows:

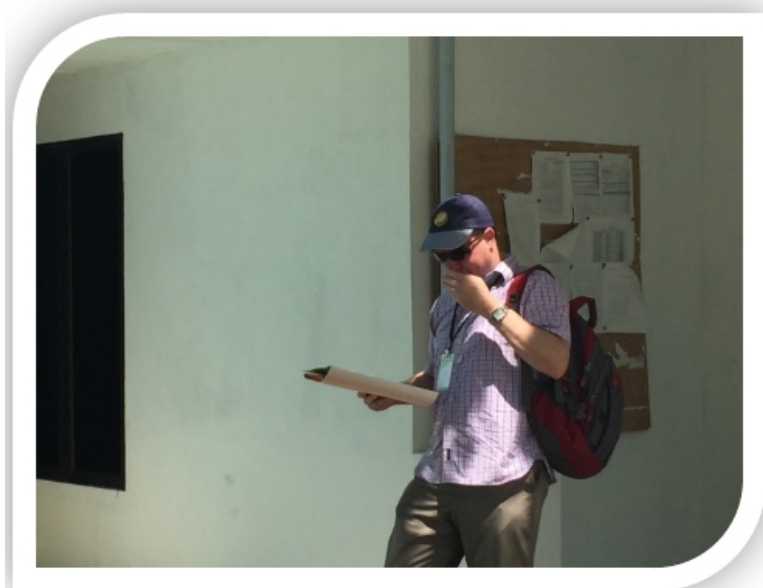
- In order to address the difficulty in collecting the individual expenses incurred, a new form was introduced with the concept of household unit. The household unit measures the expenses incurred within nuclear families or at individual levels if they spend separately. A section on food away from home was also introduced in this form to capture the expenses incurred at household unit level. From the household form, all the sections which were relevant to individual expenses was moved to the expenditure unit form.

-The durable goods were limited to items which were included in the PMT model that was developed for targeting social protection programs based on the results of HIES 2009-2010. In addition, a box was included in the questionnaire to cross out if the household cannot in any way recall the price of the durable good.

- It was decided not to value the items received as gifts or own productions (except in case of food consumed from own production). This was done mainly because it was difficult for household to estimate the price of these items.

-The standard measurement sheet was removed and decided to convert the non-standard measurement after the survey using a conversion table. The layout, design and structure of the form was changed to accommodate the revisions.

The questionnaire was also tested in the K. Thilafushi to see whether the questions are relevant for industrial island. However, this questionnaire was not implemented in the actual HIES as the industrial islands were not surveyed, as initially planned.



Final pre-test was done in the Male'. With this pre-test the questionnaire was finalized

[3.2.3 Questionnaire, flyer and gift voucher printing](#)

The questionnaires were designed in both Dhivehi and English using Coral Draw. After finishing the design of the questionnaire the files were converted to PDF files and outsourced for printing. Both Dhivehi and English version was printed.

The Dhivehi version of the questionnaires were printed as follow:

For each block 2 sets of listing forms with 5 pages and 10 pages each were printed. For each household 1 set of household member listing forms which consists of 10 sheets in each set, 1 Household Form, 4 Expenditure unit forms, 2 sets of individual forms which consists of 7 sheets in each set, 8 Labour force module, 6 employment and income forms and 1 consumption form were printed.

Additional, few copies of English version of the questionnaires were also printed to capture the foreign household information accurately. Table 1 shows the number of questionnaires printed.

Table 1: Number of Questionnaires printed

Forms	Pages per questionnaire	No of dhivehi questionnaires	No of English questionnaires	Colour	Printed on
Listing form	5 and 10	450	-	White	One side
Household member list (Form 1)	10	3780	50	Light peach	Double side
Household form (Form 2)	6	9,630	750	Light yellow	Double side
Expenditure unit form (Form 3)	4	23,400	3,000	Peach	Double side
Individual form (Form 4)	7	10,780	750	Light pink	Double side
Labour force module (Form 5)	2	46,800	6,000	Light purple	Double side
Employment and Income (Form 6)	3	35,100	4,500	Light green	Double side
Consumption form (Form 7)	7	5,850	750	Light blue	Double side
Total		135,790	15,800		

Initially 144,030 questionnaires were printed. Since the questionnaire was dispatched to different Atolls, there were shortage of the Dhivehi questionnaires of household member listing form (Form 2) and individual form (Form 4). Hence, these two forms were given for the printing during the month of August. Additional 3,780 sets were printed from each of these forms.

In order to make the public aware of the objectives and the need for their response and cooperation, a flyer was printed. This was outsourced and a total of 20,000 flyers was printed. This flyer was distributed to the selected enumeration block prior to the survey period.

Gift vouchers worth of MVR 500 were provided as a token of appreciation to Households that responded to the survey. These Gift vouchers were printed by State Trading Organization (STO) for both the STO outlets and non-STO outlets. To identify two vouchers different design was used. Vouchers was designed by STO. Total of 7,725 of STO outlet vouchers and 17,025 vouchers of non-STO outlets were printed. Since some of islands did not agree to provide the goods for the households on the credit basis, the decision was taken to provide STO vouchers. Hence, due to this there was shortage in STO outlet vouchers. Hence, additional 950 STO outlet vouchers was printed. However, these vouchers were outsourced for printing. Gift vouchers allowed households to purchase goods from the outlet for that amount during a specific period.

STO shops





Other Shops



3.2.4 Photocopy and Packing

Household circular was printed and then photocopied for each household by NBS staffs. They were used to inform the households on the importance and objectives of the survey and requesting their cooperation for the survey.

All the enumerator agreements and voucher agreements for the household as well as the shops agreements were photocopied and stamped, two copies for each household by the NBS staffs. This consumed a lot of time during preparation and the packing period.

Training materials for the first three rounds was photocopied by NBS staff using office photocopy machines. However, due to time constraints, the photocopy of training materials for the remaining three rounds were out sourced. For ease of reference during training and field operations, binded version in the form a booklet was used during later training rounds. As these included all training slides it was quite bulky. Additionally, photocopies of the questionnaires used during the training also were out sourced. Below provides a list of materials which was outsourced for photocopying before the training rounds:

Table 2: Details of training handouts and Bind booklets printed

	Description	Total	Pages per form	Size
Printing (Training Handouts)				
1	Listing form	696	3	A4
2	Person listing (Form 1)	696	3	A4
3	Household Form (Form 2)	696	12	A4
4	Expenditure Unit Form (Form 3)	1392	8	A4
5	Individual Form (Form 4)	696	10	A4
6	Labour Force Form (Form 5)	2088	4	A4
7	Employment and Income (Form 6)	2088	6	A4
8	Consumption Form (Form 7)	696	14	A4
9	Control Sheet	916	1	A3
10	Control Sheet	620	1	A3
10	Trained Igaraar	1312	4	A4
11	Untrained Igaraar	912	3	A4
12	thank you letter with voucher	9300	1	A5
13	Listing exercise	696	2	A4
14	Sample map for listing	696	1	A4
15	Control Sheet slides	696	8	A4
16	Quiz 1	256	2	A4
17	Quiz 2	256	2	A4
Bind booklet (Slides)				
1	Training schedule island	696	1	A4
2	Survey magsadhu	696	10	A4
3	Listing form slides	696	29	A4
4	Person listing Form 1 slides	696	18	A4
5	Household Form (Form 2)	696	69	A4
6	Expenditure Unit Form (Form 3) slides	696	37	A4
7	Individual Form (Form 4) slides	696	28	A4
8	Labour Force Form (Form 5) slides	696	29	A4
9	Employment and Income (Form 6) slides	696	44	A4
10	Consumption form (Form 7) slides	696	31	A4
11	Enumerators Role	696	1	A4
12	Random Sample sheet	696	2	A4

Packing of materials for training and for field operation was done by NBS staff. Admin supported in providing paper boxes and respective team for each atoll took in-charge of packing their materials. A checklist was provided by the survey unit and the teams packed accordingly. Separate boxes were packed for training and field work for easy facilitation and handling of the materials. Packing consumed a lot of time and had to utilize many staff for this work.



For the Atolls field operation, all the training materials as well as the questionnaires used during the field work was packed by NBS staff. Paper box was bought from the market and respective team took the in-charge of their respective atoll packing. List of items which need to be packed was prepared and all the items were packed in the box. Separate boxes were packed for training and the field work. Packing consumed a lot of time.

3.3 Tabulation plan

Tabulation plan was kept same as 2009/10 HIES. Before handing to Data processing team, survey section updated the field name and formula in the tabulation plan. Tables which are related to specific chapters would be done along with the respective chapter.

3.4 Enumerators manual

The most important guide for interviewers is the enumerator's manual. It serves as quick reference guide during the survey period. The enumerator's manual explains the purpose of the survey and the basic tasks to be performed by the enumerators. It explains how to fill out the survey questionnaires. The entire questionnaires are explained question by question, in the manual.

The content and instructions in the enumerator manual were presented during the enumerator trainings for Male'.

3.5 Publicity

Prior to the commencement of the field operations of HIES, publicity regarding the survey was provided through media. Publicity is very important in order to raise awareness of the survey and encourage selected households to cooperate. A supplement, a flyer, radio interview, information provided on different programs and news on the survey launching at the beginning of each survey round were activities carried out for publicity.

Since the scope of the HIES was wide and covered different locations of the country during different months of the year, it was decided to prepare a HIES awareness video for the public. This video covered the importance of HIES, what information will be collected from the survey and how households can be prepared when enumerators come to visit their household.

The video was outsourced and 3 video was prepared. Each video was for 1 seconds and was aired on TVM channels for a period of 6 months. A total of MVR 38,000 went for video preparation.

In addition, to the video spots stand banners was also placed in different location in Male'. Prior to survey, flyers were distributed to all the households in the selected enumeration block. This flyer contains important information on the aims and objective of the survey, survey periods and uses of the survey results. In case of the Atolls, flyers were sent to the island offices for distribution to the selected enumeration blocks, with a map of selected block. However, there were instances that the flyers were not received by the islands, by the time the enumerator teams arrived some islands.

ENUMERATOR RECRUITMENT AND TRAINING ACTIVITIES 4

4.1 Recruitment Process for the Field enumerators

The recruitment for the HIES followed a transparent process, involving many stages and types of evaluations. It was aimed to select the candidates most qualified and suitable for the job of Enumerators for field work and Data Coders and Data Entry work.

To begin recruitment, an advertisement was placed in the gazette and on the website of NBS, for a period of one week. The advertisement specified the applicants must, at minimum, be high school graduates. It was specified that preference will be given to those aged between 18 and 40 years, who have completed the G.C.E A' levels, have prior field experience in survey or census and can travel to islands. It also included information on the allowances and rates. The candidates were instructed to submit filled application form. Shortlisted candidates were selected after the interview carried out by NBS and those selected were continue with the training process.

A training of one week was conducted to the selected participants. Regular exercises and test were used throughout the training week to assess their understanding and to facilitate the screening of most appropriate candidates. At the end of the training an exam was administered which tested candidates ability to understand and complete the questionnaire.

A field-based training requiring trainees to visit households and conduct interviews made up the final step of the recruitment process. They had to complete a practical exercise simulating the work they would be conducting during the survey. During the field based practical training, the trainers observed and evaluated the trainees' abilities to act as enumerators. Based on these assessments, as well as the questionnaires completed in the field by the candidates, final group of HIES enumerators and supervisors were selected. Although it was possible in the islands, it was difficult to implement in Male' and hence mock interviews were often used during the training to test these practical skills.

Issues encountered during recruitment include, not getting enough candidates from Male' as well as in some of the Atolls. Advertisements had to be placed several times to get more candidates. In some of the islands when the training teams went for training also it was discovered that the candidates applied were not enough and had to look for interested candidates overnight. To compensate for this some enumerator teams were formed with a trained enumerator paired with an untrained enumerator. Also, field work in some Atolls were divided into two rounds one immediately following the other, to enable the use of same pool of field workers to complete the exercise.



It was noticed that some enumerators who applied were not actually interested in the survey work. This was identified as lack of attention during the training, weak attendance and performance in class and during practical field work part of the training. All these aspects were considered in selection and pairing better performers with weaker ones in making survey teams.

4.2 Training Process

Training was carried out in Male' as well as in the Atolls. As the survey was carried out in seven different rounds, training process was conducted in 2 different atolls in every round. Training was held in the capital of the atoll. In every island two classrooms of enumerators were trained. Some atolls enumerators trained were enough to hold the field operation in one round while in other atolls field work in the islands were split into two groups and complete in two rounds one followed by the other, due to fewer enumerators.



Other than in the capital islands the trained enumerators were paired with another untrained enumerator from the survey island. Being paired with an enumerator from the survey island helps field operation to locate the household easily and to identify the respondents. A total of 570 enumerators were trained from Male' and atolls within 7 rounds. Among these 84 were for Male'. Below find the details of trained enumerators.

Permanent Staff of NBS did the supervision. Each supervisor was in-charge of all statistical activities carried out in the assigned island. These field works and supervisor were given a thorough training before they were entrusted with the survey operations. A focal point was assigned in each Atoll to oversee the work.

Training

Table 3: Details of hired Field Workers and Training given

Location	Training period	Field workers Hired from:	Number of interviewers trained
Male'	6 - 10 Dec 2015	Male'	20
	13 - 17 Dec 2015		29
	13-17 March 2016		10
	29-31 March 2016		6
	26 April - 2 May 2016		5
	14 - 18 August 2016		7
	19-22 September 2016		7
Faafu (F) Atoll	3-7 April 2016	F. Nilandhoo	28
Lhaviyani (Lh) Atoll	3-7 April 2016	Lh. Naifarua & Lh. Hinnavarua	30
Gnaviyani (Gn) Atoll	24-28 April 2016	Gn. Fuvahmulah	48
Laamu (L) Atoll	24-28 April 2016	L. Gamu & L. Fonadhoo	37
Gaafu Dhaal (Gdh) Atoll	15-19 May 2016	Gdh. Thinadhoo	42
Raa (R) Atoll	15-19 May 2016	R. Ungoofaru & R. Dhuvafaru	47
Haa Dhaal (HDh) Atoll	31 July - 4 August 2016	Hdh. Kulhudhuffushi	43
Thaa (T) Atoll	31 July - 4 August 2016	Th. Thimarafushi	26
Gaafu Alif (GA) Atoll	21-25 August 2016	GA. Villigili	33
Noonu (N) Atoll	21-25 August 2016	N. Mandhoo	21
Baa (B) Atoll	18 - 22 September 2016	B. Eydhafushi	22
Dhaal (Dh) Atoll	24 - 28 September 2016	Dh. Kudahuvadhoo	23
Seenu (S) Atoll	17-21 October 2016	All the wards	41
Shaviyani (Sh) Atoll	17-21 October 2016	Sh. Funadhoo	21
Kaafu (K) Atoll	16-20 October 2016	All the islands	24

* Note: NBS staff went to the respective Atoll to conduct the training. Kaafu atoll enumerators was trained in Male'

A training material package which includes questionnaires, presentation slides and exercises were prepared by NBS for use in enumerator training. Presentation slides were prepared using power-point and consisted of the main aims objectives and uses of the survey, elaborate examples explained the content of all the 8 different HIES questionnaires, question by question; concepts and definitions, interviewing techniques. Practical role play sessions and Mock Interviews were also held as a part of the training.



The training schedule was arranged in such a way that all the 8 questionnaires were covered in 4 days. Training was organized in two sessions per day with 6 hours per day, led to a total of 24 hours of training per enumerator. This includes the practical field work. The enumerators were paired and sent to a household to collect information in some blocks that was not included in the actual survey sample.

This was a useful experience for the enumerators as they gained more knowledge by practically, involving in field work they understand the questionnaire more. Given the practical nature of the work and the need to be able to communicate with respondents effectively by asking and recording answers, probing skills, ability to follow the skip patterns correctly were all critical for the field work and helped in identifying the most appropriate candidates. At the end of the training a recap was given on all the forms and the most important points that all the enumerators should remember were highlighted.

After the training different enumerators were assigned to different islands and survey materials and responsibilities were handed over to them. A working schedule was given to them as a guide and the next day they were dispatched to do the data collection of the assigned islands. The trainers came back after all the enumerators were dispatched and the rest of the responsibilities were handed to the atoll council.

Table below provides the training the schedule used in HIES.

Table 4: HIES Training Schedule

HIES Training Schedule	
Session	
Day 1	Introduction and Overview
	Listing form
	Person Listing form_form1
	Household form_form 2 (Household Info)
	<i>fill form 1 for 2 households at home</i>
	<i>Practical field work: Listing and Form 1</i>
Day 2	
	<i>Discussion on filled forms F1</i>
	Household form_form 2 (durables & repair)
	Household form_form 2 (travel)
	Household form_form 2 (transfer & loan)
	Expenditure Unit Form (form 3)
Day 3	Individual Form (Form 4)
	<i>Practical field work: fill form 2,3 for age15 + male and female</i>
	<i>Discussion on filled forms F2 & F3</i>
	Individual Form (Form 4) conti...
	Quiz 1 and discussion
	Labour force module (Form 5)- Employment
	Labour force module (Form 5) - unemployment
	Employment and Income form (Form 6)-upto Q10
Day 4	<i>fill form 4 for age15 + male and female</i>
	<i>Practical field work: fill form 5 for not working person</i>
	<i>Discussion on filled forms F4 & F5</i>
	Employment and Income form (Form 6) from Q10
	Consumption Diary (Form 7)
	<i>Practical field work: fill form 6 for an employee and an own account worker and discussion</i>
	<i>Practical field work: Form 6 & fill cereal, bread page, meat, fish page, fruits, Q4(last page) and discussion</i>
	Quiz 2 and discussion
	Listing Form Exercise & Control Sheet
	Enumerators Role
	Agreement Signing / Allowance
	Admin info and survey schedule

4.3 Duties and Responsibilities of the Enumerators

4.3.1 Enumerator's Responsibility

The enumerator must ensure that the Forms are completed by the selected households in the EB to which he or she is assigned. The enumerators must follow the guidelines and instructions given to them. For ensuring quality and consistency of data, it is the duty of every enumerator to clarify any doubts before reaching any conclusions.

The enumerators assigned to each EB are expected to work as a team, and therefore the team members should never interview household members independently.

4.3.2 Field Operation Strategy

First impression: The moment when the enumerator and the respondent meet for the first time is crucial for the success of the interview. Thus, first impression based on the enumerator's appearance, the attitude at the very beginning and what he/she says is crucial for further work. Enumerators should be properly and professionally dressed for their work.

Once selected households are located, the interviewer should ask to talk to the head of the household or his/her spouse. He/she should kindly and in a friendly manner greet the person and introduce him/herself. Then the interviewer should explain briefly and concisely the purpose of the survey, importance of the survey and the need for response and cooperation by all household members in carrying out the Survey.

In case if a household member may be too busy or away from home during the whole survey period, and if he/she is therefore unable to directly answer, then request the most knowledgeable person to answer on his/her behalf.

If the respondent that answered on behalf of another individual is not sure about certain answers, request them to contact the respective individual to verify the answer before recording it in the questionnaire. If enumerators face difficulty, they must always contact their supervisors.

Number of visits: The questionnaire modules can be filled during one or more visits, depending on the level of cooperation from the household, household size, time and availability of direct respondent at the time of the interview. If information could not be derived due to the absence of certain household members, interview could be scheduled to a convenient time when the member would be available at home for the interview. If an appointment has been scheduled, enumerators must always be punctual.

4.3.3 Communicating with Respondents

In a nationwide survey, the enumerators would meet households with different socioeconomic backgrounds, different reactions, attitudes and behavior in terms of the survey, and hence must maintain a polite attitude towards the respondents. This could be achieved by establishing confidence with the respondent, and through good communication skills.

It is important that the interviewer has a friendly attitude towards the respondent while maintaining self-confidence. If the interviewer gives the impression of nervousness or insecurity, he/she would not provide enough confidence to the respondent in order to obtain the necessary cooperation, participation and attention.

The enumerators must treat the survey household with respect and always be patient with the respondents. The interviewer should always try to maintain the same mood throughout the interview, while maintaining a standard and professional facial expression. If the respondent for any reason gets tired or busy with something else, allow a few minutes break or offer to return the following day or the next most convenient time.

4.4 Enumerators Agreement

At the end of each training batch the enumerators were asked to sign a confidentiality agreement with the NBS. The purpose of this was to have a clear understanding between the enumerators and the NBS about the survey rules and regulations, and to ensure that we strictly abide by the confidentiality codes of the statistical regulation of the Maldives. The agreement includes rules and regulations about data collection, discipline at work, confidentiality of the information taken in the survey, payment statements and penalties for violation of these rules. A signed copy of agreement was given to each enumerator for their reference. All the enumerators who participated in editing, coding and data entry process also signed an agreement. One copy of the enumerator agreements was kept at the NBS for official records.

5 FIELD OPERATION

5.1 Data Collection

Data collection of HIES was done in Male' through 6 rounds, and 7 rounds in the atoll/islands. The data collection was done by atoll level such that all selected in the particular Atoll was covered in the same round, to minimize transportation costs. A total of 84 enumerators was used in field operation in Male' throughout 6 rounds. And from 20 Atolls a total of 821 enumerators (542 trained and 379 untrained) were used in the field operation of HIES 2016.

Field operation

Table 5: Field Operation Details

Location	Time period	Field workers from:	No. of interviewers trained	No. of interviewers untrained**
Male' - Round 1	26 March - 16 April 2016	Male'	16	0
Male' - Round 2	23 April - 12 May 2016		16	0
Male' - Round 3	16 - 30 May 2016		16	0
Male' - Round 4	3 - 25 August 2016		16	0
Male' - Round 5	24 September - 14 October 2016		16	0
Male' - Round 6	24 October - 10 November 2016		16	0
Faafu (F) Atoll	9 - 17 April 2016	Respective Atolls	28	17
Lhaviyani (Lh) Atoll*	9 - 27 April 2016		30	17
Gnaviyani (Gn) Atoll	30 April - 8 May 2016		48	6
Laamu (L) Atoll*	30 April - 18 May 2016		37	16
Gaafu Dhaal (Gdh) Atoll	21 May - 3 June 2016		42	21
Raa (R) Atoll	21 May - 3 June 2016		47	27
Haa Dhaal (HDh) Atoll	6 - 13 August 2016		43	36
Thaa (T) Atoll*	6 - 23 August 2016		26	21
Gaafu Alif (GA) Atoll	27 August - 3 September 2016		33	20
Noonu (N) Atoll*	27 August - 9 September 2016		21	27
Baa (B) Atoll*	24 September - 16 October 2016		22	24
Dhaal (Dh) Atoll	1 - 13 October 2016		23	19
Seenu (S) Atoll	22 October 2016 - 7 November 2016		41	0
Shaviyani (Sh) Atoll	22 October 2016 - 8 November 2016		21	24
Kaafu (K) Atoll	26 October 2016 - 7 November 2016		24	4
Haa Alif (HA)	29 March - 15 April 2016	Sent from Male'	16	19
Alifu Dhaal (Adh)	20 April - 8 May 2016		12	24
Meemu (M)	13 - 31 May 2016		12	26
Alif Alif (AA)	5 - 23 August 2016		10	21
Vaavu (V)	23 September - 2 October 2016		6	10

* Note: Did not get enough Field workers hence the duration of the field was extended to cover the sample households
 ** Number of untrained enumerators are more than trained enumerators due to high turnover or in some atolls specially those teams sent from Male', have covered more than one island per round.

¹ Some enumerators was involved more than one round in the field operation

The data collection period was from March to May 2016 and August to November 2016 with a break in-between during Ramazan. To collect data face-to-face method has been adopted with a pre- designed questionnaire. The data collection activities in the islands took place over 8 days. Day 1 was assigned for the listing process of the selected block. By the end of the day listing was completed and the sample was taken using the random table provided to the team. The rest of the 7 days were allocated to fill the survey questionnaires. Fifteen households were selected from each block. For each block two teams were assigned and the workload was divided between the two teams. One team filled eight household information while the other team filled seven household information throughout 7 days. Including the travel days, the process took 10 days in every island in every round.



The data collection of Male' also took place at the same period as atoll/islands. In Male' the data collection activities took place for two weeks. As in Male' there was difficulty in getting in touch with the household members, it takes more effort and time. The first two days were assigned for the listing process, as in Male' the size of the blocks are larger than in islands. By the end of the second day the listing was completed and the sample was taken with the rest of the days devoted to complete the survey questionnaires.

5.2 Pilot Survey on Evidence and Data for Gender Equality

Along with the 2nd round of HIES a pilot survey “Evidence and Data for Gender Equality (EDGE)” was carried out in three different islands: L.Fonadhoo, L.Gan, and Gn.Fuvahmulah. EDGE covers the same households which was selected for HIES. Once the field operation of HIES was completed the households were informed that EDGE module will be carried out within next 2-3 days. One-day training for EDGE module was given to the enumerators upon completion of HIES field work. This was a separate project that NBS was implementing with UN Statistics Division at the time and this pilot survey was funded under EDGE project separately. The main objective of the EDGE pilot is to test the EDGE methodology for measuring asset ownership and control and entrepreneurship from a gender perspective. The purpose of doing this together with HIES was to use the information on household characteristics and some other aspects already included in HIES questionnaire from the same households that EDGE module was piloted and to use in combination during for the analysis of EGDE. Expert in this work from UNSD worked with NBS team in developing the EDGE module, pre-testing and training of this component.

5.3 Monitoring and Supervision

Throughout the survey field operation was monitored centrally by NBS. During Male' field enumeration, all the enumerators have to report to NBS at 9:00 and sign their attendance before commencing their work and the field operation work finishes at 19:00. In between enumerator can take lunch break of 2 hours. All the enumerators have to return their files with the questionnaires to the respective supervisors by end of the day. All the update has to be given and the filled questionnaires handed over to the supervisor.



Supervisors were assigned to check the daily work of the enumerators and to solve the issues arises during the field work. For the supervision of the atoll/islands NBS staffs were assigned to monitor and take their daily updates from NBS through phone on a daily basis. Additionally, Atoll coordinators checks the daily attendance and solve any issues faced by the enumerators at the Atoll level.

Given that the supervisors were selected from the trainings held for enumerators, they are also exposed to the same trainings and practical experience. This made it is difficult for them to handle some of the technical issues that arise during the actual survey.

Hence, the importance of a staff from NBS to be present in the Atolls during the field work was highlighted and is something to be considered by NBS in future surveys. This person needs to be thorough in the technical aspects of the survey and be able to guide the supervisors as well as enumerators during the field work. This is expected to help in closer and better supervision and improve data quality.

The following controls procedures were adopted to control the non-sampling error and increase to accuracy of the survey estimates.

- Field supervision of listing forms and the number of households was verified using the Census 2016 data.
- During the data collection, supervisors visited to the respective enumeration blocks to monitor the field work. This was done only in Male'
- Field activity reviews by the NBS staff
- Data entry checks, computer edits and data verification
- Use control sheets to monitor the field works carried at the atolls and whether they can finish the work on time and increase the accuracy of the data



5.4 Gift Vouchers

In order to show appreciation for the efforts made by households in participation, a gift voucher was given to households as a token of appreciation. At the end of the survey period, 5 vouchers worth MVR 100 each were given to those household that provided full cooperation. That is MVR 500 worth gift vouchers, which can be used to buy goods from a selected shop.

The gift vouchers in Male' and 24 islands from different atolls were from one of the biggest public trading company in the Maldives, State trading Organizing (STO). For the islands without STO outlets, a well-known shop with more variety of goods was selected from each survey island in consultation with the island councils. The process of selecting the shop followed a transparent process. However, some issues arose in some islands and complaints were brought to NBS, which was resolved with clarifications.

6.1 Editing and Coding

As the survey was on hold during the Ramadan period, the manual editing and coding of the 3 batch of the forms was carried out during Ramadan period. The coding of data started during June 2016 and was able to complete by the end of July 2016 using 10 coders who also worked as data collection officers in the survey. In order to reduce the coding errors and also to maintain consistency, 4 staff from the NBS was assigned as supervisors during the coding operation.

Coding of the second batch of the questionnaires started during December 2016 using 6 coders and additional staff from NBS were actively involved in the coding.

The classification used to code industry was International Standard Industrial Classification of all Economic Activities (ISIC) Rev. 4 and to code occupation, International Standard Classification of Occupation (ISCO) 08 was used. Classification of Individual Consumption According to Purpose (COICOP), 2003 was used to give code for food and non-food items in the forms. COICOP codes were given at 7-digit level for food items and non-food items. Most of the COICOP was already pre-coded in the questionnaire and only few needed to be coded. Revision of the International Standard Classification of Education (ISCED) 39c/19, resolution 20 was used to identified the field of education. ISCED code was given at 4-digit level code with first two digits was from ISCED and last two digits was localized one code produced by the NBS to detail out the field of education. Atoll Island codes were the codes used in Census 2014. ISIC, ISCO and Atoll Island codes were in four-digit level.

During the manual editing, all the questionnaires by household level were stamped together and assigned a serial number to the household which was provided by the data entry team. Form 4 (Individual form) and Form 3 (Expenditure Unit form) information was verified with Form 2 (member listing form) information. Coders verified if all the members in Form 2 was recorded in Form 4. If the age and sex was not filled in Form 4 (Individual form) than coders transferred this information from Form 2 to Form 4. In form 3 (expenditure unit form) if the expenditure unit number was missing this information also was transferred from form 2 to form 3. These checks were necessary to done before sending to data entry as Form 2 (member listing form) was decided not to enter.

Once the questionnaires were coded, the questionnaires were handed to data entry team.

Classification used are attached in annex.

6.1.1 Difficulties Faced During Coding

- For the not stated items 99999 was given to the food and food items (CPC), 2399999 for the food products (CPC) and 9999 for ISIC and ISCO. And 1-digit level also was used in few cases to avoid giving not stated.
- Educational field was narrowly defined in some questionnaire as a result only 2-digit code could be used for these cases.
- If a food item was not clearly specified in the diary it was coded as other food products not elsewhere classified.
- Some of the items were recorded as one entry with lump sum figure. During the coding stage a new code was formed including all the items in the category.

6.2 Designing of Entry Program

Data Entry program was designed using Microsoft Access. Skips and some validations were built in the program. To minimize the entry mistakes entry forms were designed to resemble the survey questionnaires and the entry programme was developed in a user- friendly manner. Additionally, most of the skips in the questionnaire and the answer category ranges associated with the questions were also incorporated in the data entry program. The program was tested using actual data to confirm that the program was error-free. The program was then stored in the server and it was shared with the operators where they can access the individual forms by entering the form serial number.

6.3 Data Entry and Data Cleaning

Data entry started on 13th October 2016 along with the “Evidence and Data for Gender Equality (EDGE)” questionnaire using 4 operators on the first day and a 5th operator joined on the second day. On the first day an operator can enter only one household. They gained the speed and on the 3rd day they were able to enter an average of 3 households. By the end of the data entry process, the average data entry speed recorded was 6 households per person. On average 8 operators worked 6 hours per day with a break of 45 min. Total 4,910 questionnaires were entered by the end of 10th April 2017.

Key operators were hired on contract basis. Induction training was given to them so that they will be familiar with the type of questionnaires, how the questionnaires was filled, how many questionnaires was filled and how the skips pattern works.

The data entry was carried out in NBS. The hired staff worked in the afternoon shift. Along with the NBS staff the data entry staff worked from 2pm to 8pm in NBS, using the work stations and computers of regular office staff. This arrangement had to be used due to space limitations and delays due non-availability of an appropriate place from outside for this operation. Working time of NBS staff engaged in the operation was changed to afternoon shift.

After the completion of data entry and before giving the data for editing, some checks were applied in the database by data processing team. Before handing over the raw dataset to the data editing team, the following edits were undertaken:

- All the skips pattern was checked and irrelevant fields was removed. However, before removing the data it was cross checked with the actual form and with the data entered. This was done to check whether it's an entry mistake or not. Once this verification has been done the data entry mistakes was corrected accordingly.

Once the raw dataset was given to the data editing team the following data cleaning was undertaken using STATA software:

- Consistency checks were done and the team ensured all the fields listed in the questionnaire was entered.
- All the variables were labelled and values were assigned.
- Internal consistency checks were done to ensure the information provided by the respondents contains consistent information throughout all the questionnaires. For example: Head of the household and spouse, whether the marital status was stated as married. If the data were inconsistent a random sample was selected and referred back to the questionnaire to check whether it was a data entry mistake.
- Range checks were done. This ensures that the data were within the reference range. For example: Gender variable should contain values 1 ("female") and 2 ("male"). Range checks have been designed and implemented systematically, on a variable-by-variable basis throughout the questionnaire.
- Missing values were checked. For example: if age were missing cases a random sample was selected and referred back to the questionnaire to check whether it was a data entry mistake or the household member did not report on age.
- Outlier detection were done. A modified Deaton and Tarozzi procedure were adopted to identify the outlier. In this method the values in the variable were transform into logarithms form to normalize values. Outlier was flagged if logarithms exceeded the median of logarithms by more than 2.5 interquartile range (IQR) or less than 2.5 IQR. This allows to identify the extreme values in both left (too small values) and right (too large values) tail of the distribution. Before running the outlier check, all the household expenditures were converted to per capita terms in order to avoid the distortion. Outlier check was run by Male' and Atolls separately and other condition were also applied where ever needed. Outliers identified were replaced with the median within the stratum. Overall, the number of detected outliers was not exceedingly large, neither at the item level nor overall.
- Before adopting the outlier detection, a random sample was selected and referred back to the questionnaire to check whether it was a data entry mistake. For example: Outliers for household floor area was also referred to the questionnaire to check for the inconsistency.
- Other checks to gain the overall data quality was also done. Such as age reported by the households for each member, estimated population from HIES 2016 was compared with the Census 2014 results.

In the expenditure data was collected for past 12 months, past 6 months, past 3 months and past month and past 7 days. Therefore, to convert all data into the same platform the calculation was undertaken as follows:

- All the expenditure was converted to a yearly figure and then divided by 12 to drive a monthly value

7 ASSISTANCE FROM INTERNATIONAL AGENCIES

Throughout the period assistance and guidance were received from World Bank (WB) and International Labour Organisation (ILO). Sample design was done by NBS in collaboration with a technical expert of a sampling expert funded by the World Bank, Mr David Megill. Data base editing and analysis was done using STATA program by a team from NBS staff in collaboration with technical experts from WB. Support from WB technical experts were focused specifically on food consumption module, durable goods, imputed rent calculations and those variables required for deriving the consumption aggregate and in poverty analysis. Several missions by World Bank (WB) consultants were fielded to support the work and the team worked together the technical team from NBS in identifying and agreeing on the edits required, development of STATA do files and in data editing. This process took quite a long time and it was carried out in such a way to improve the transfer of knowledge to NBS technical team. Some work was done remotely as well. Theoretical trainings were also done on poverty measurement concepts and sampling.

International Labour Organisation (ILO) consultants provided technical guidance to relevant NBS technical staff in the editing of Labour Force Module of HIES and in verification of labour market indicators and analysis. This was important as NBS was implementing the new international guidelines in labour statistics, 19th ICLS, for the first time and needed technical guidance in the process.

All other types of errors, such as coverage, response, processing and non-response errors, are non-sampling errors. It is difficult to identify and evaluate the scope of many of these errors.

Coverage errors arise when there are differences between the target population and the surveyed population. Sample surveys are limited in that they are assumed to represent the part of the population that was not included in the sample. Surveys have various sampling and non-sampling errors, such an assumption may not always be correct.

The survey design of HIES 2016 does not include resorts and industrial islands. Hence the direct incomes and expenditures of this particular population will not be accounted.

Similarly, to the extent that the non-responding households and persons differ from the rest of the sample, the estimates will be biased. Non-response could occur at several stages in this survey. There are two stages of data collection: collection at the household level and at the individual level. As such, some non-response occurred at both levels. Non-response also occurred at the level of individual questions.

Table below provides the response rate in HIES.

Table 6: Household Response Rates for HIES

	Total	Responded	Response rate
Number of sample household	4,985	4,910	98.5%
Number of Household- filled Form 2 (Household form)	4,910	4,906	99.9%
Number of Individuals- filled Form 4 (Individual form)	26,025	25,931	99.6%
Number of Individuals- filled Form 5 (Labour force module)	18,069	17,387	96.2%
Number of Individuals- filled Form 6 (Income and employment form)	9,427	9,254	98.2%
Number of expenditure reported households	4,910	4,892	99.6%
-Food	4,910	4,892	99.6%
-Non Food	4,910	4,892	99.6%

9 SURVEY BUDGET

Household Income and Expenditure Survey (HIES) is one of the most expensive surveys done by the bureau, as the sample was designed to represent Atoll level and it required travel to most of the islands in the country. The total amount spent for the whole HIES 2016 was **MVR 10,144,499.65** during the period 2015 to 2017.

At the start of the survey during the year 2015, there was a sufficient amount of budget allocated to the survey. Some activities planned were delayed and this resulted in shift of required budget across the calendar year during the survey duration. Initially in 2016, MVR 11.9 million was request for conducting HIES however, only 3.6 million was approved. Since the survey cannot be completed with the approved budget, a special request was sent to Ministry of Finance and Treasury (MoFT). The request was approved by the MoFT, however, 4 million was dispersed and once it is used up another 4 million will be given.

Budget needed to be mobilized from the Ministry of Finance and Treasury in installments. In the year 2015 only the budget for the gift vouchers were paid to the STO. This was 80% of the total amount to be paid.

Some costs like allowances for enumerators were increased as the rate included in the estimated budget was below the market rate and difficulties in getting enumerators were encountered. Similarly, accommodation rates in some islands and food rates quoted by islands were much higher than the regular rates set by the government and these had to be increased with justifications to enable the smooth implementation.

9.1 Printing and Photocopy

A total cost of MVR **1,063,158.88** accounting for 11 percent of the total budget was spent on printing questionnaires and other materials (training materials, publicity flyers, gift vouchers etc). Apart from flyers video spots were made for the public to make aware. This also cost MVR 38,000. As the training was held in the capital island of atolls, the training materials was carried from Male'. Along with the survey questionnaires, stationeries, and the training slides, training questionnaires and the administrative documents related to HIES training materials were printed and taken.

In the first round other than the survey questionnaire, the training materials were photo copied from the bureau. As it was time consuming, it was decided to outsource the process. In the second and third round, the amount needed for these rounds were printed separately by outsourcing. And for the rest of the round the training materials were printed together and binder as a booklet for every enumerator.

9.2 Training and Field Allowances

Training and field expenses include, allowances paid to enumerators during training and field work, data processing. It also included refreshments provided during training. Cost of trainers and enumerators accommodation and food. And also includes the cost of training centers in islands and in Male'. Allowances were given to enumerators and supervisors during field operations, coding and editing and for the data entry process.

All the enumerators who participated in these activities were paid MVR 300 daily referred to their attendance. A minimum of 8 hours has to be put in to working hours by the enumerators to get MVR 300 per day. Enumerator allowance included training allowance paid to enumerators amounting to MVR 100 per day of training attended. A phone allowance of MVR 10 was given for every working day. Food and accommodation was provided for the enumerators those whose traveled for other islands. And for the trainers during the training week.

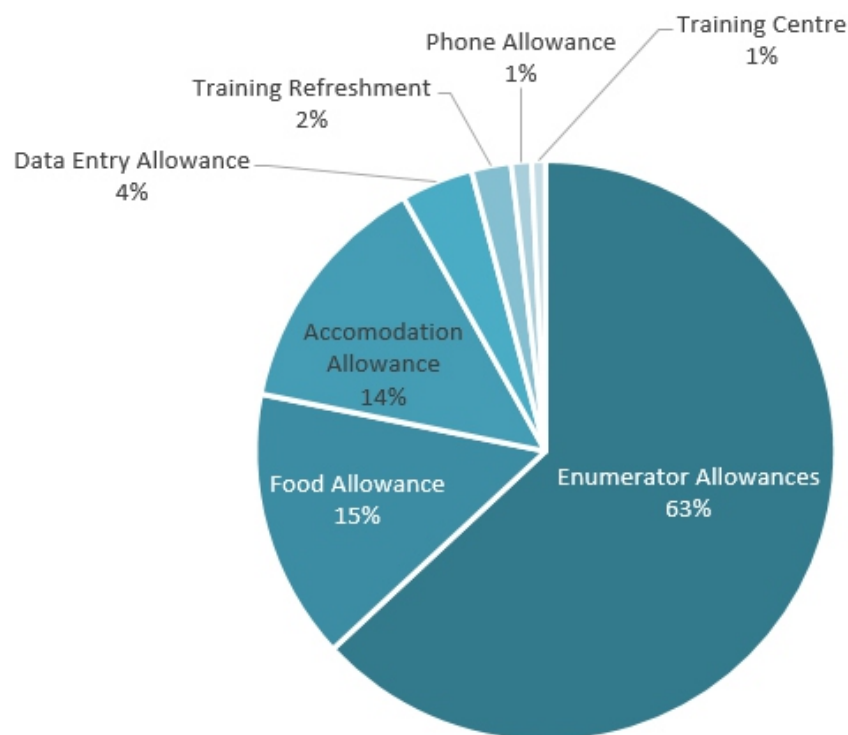


Table 7: Training and Allowances Cost

Training and Allowances	
Enumerator Allowances	2,963,462.70
Food Allowance	708,508.98
Accommodation Allowance	644,243.00
Data Entry Allowance	188,786.79
Training Refreshment	104,173.57
Phone Allowance	52,830.00
Training Centre	36,100.00

9.3 Other Expenses

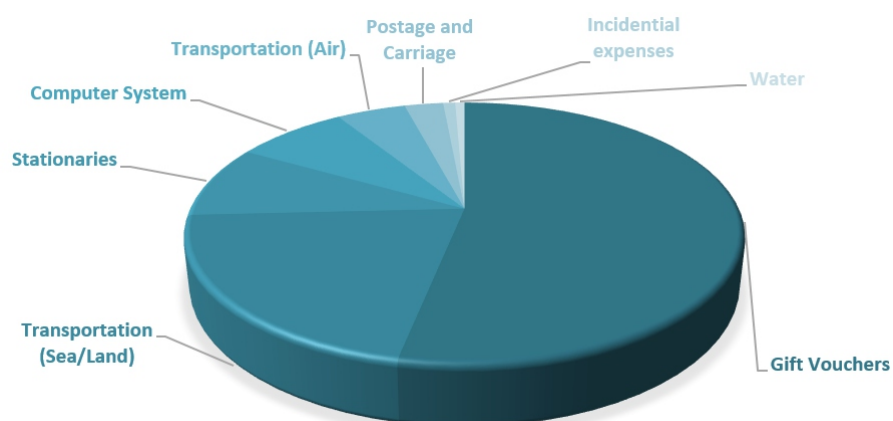
Due to the geography of our country, transportation costs to the islands was incurred during each survey round. Inter-atoll travels has to be done by sea and this also incurred a huge amount.

Aside from expenses mentioned above there were other expenses incurred during the survey. The selected households were gifted with five vouchers of MVR 100 each. This also was one of the huge expenses spent on this survey. Gift vouchers cost MVR 2.3 million of the survey budget. The gift voucher was given to every household participated in the survey. This costs almost 23% of the budget.

As the survey was done using paper questionnaire several boxes of questionnaires including training material was carried to the islands during each survey round, this incurred a carriage cost and sometimes excess baggage costs, especially when travelling to islands using air transport. Other than these the expenses occurred are water, incidentals, stationaries. In addition, computer systems were purchase for use in data processing.

Table 8: Other Expenses Incurred

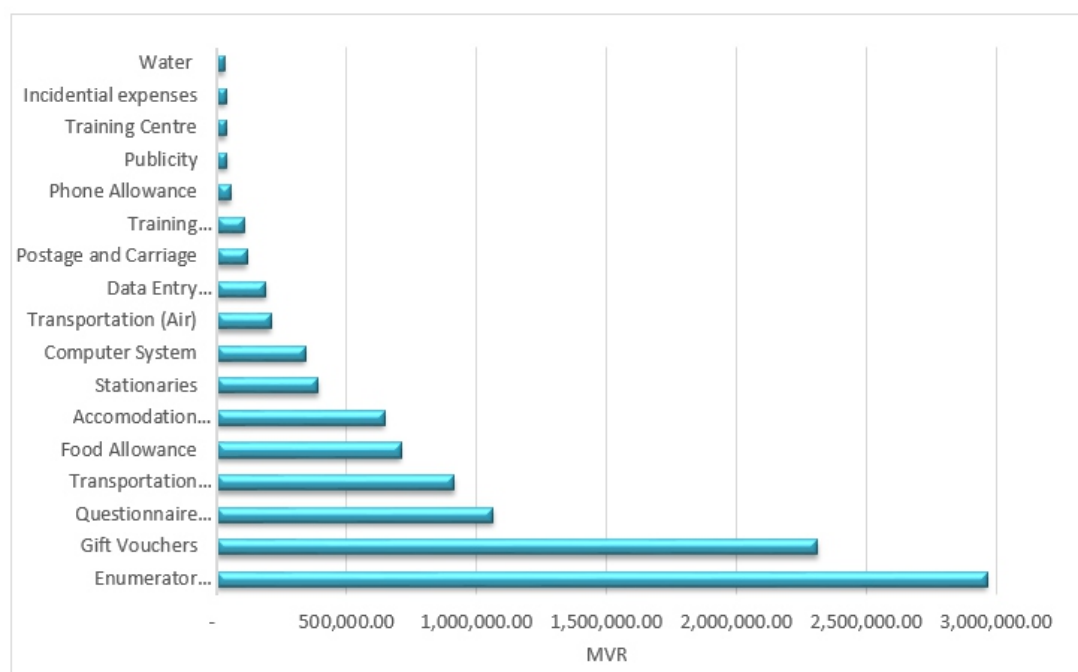
Other Expenses	
Gift Vouchers	2,312,173.21
Transportation (Sea/Land)	913,010.70
Stationaries	390,148.36
Computer System	339,549.59
Transportation (Air)	208,857.66
Postage and Carriage	117,220.19
Incidental expenses	35,948.21
Water	28,327.81



9.4 Summary Details of the Budgets

Table 9: Budget Summary

Details	total cost	percentage share
Enumerator Allowances	2,963,462.70	29.2%
Gift Vouchers	2,312,173.21	22.8%
Questionnaire printing	1,063,158.88	10.5%
Transportation (Sea/Land)	913,010.70	9.0%
Food Allowance	708,508.98	7.0%
Accommodation Allowance	644,243.00	6.4%
Stationaries	390,148.36	3.8%
Computer System	339,549.59	3.3%
Transportation (Air)	208,857.66	2.1%
Data Entry Allowance	188,786.79	1.9%
Postage and Carriage	117,220.19	1.2%
Training Refreshment	104,173.57	1.0%
Phone Allowance	52,830.00	0.5%
Publicity	38,000.00	0.4%
Training Centre	36,100.00	0.4%
Incidental expenses	35,948.21	0.4%
Water	28,327.81	0.3%
Total	10,144,499.65	100.0%



10.1 Problems Encountered

One of the common problems encountered by the survey teams was the limited time allocated, as the questionnaire was quite long (it took approximately 2-3 hours to complete one questionnaire). In addition, the geographical distribution of the country itself is costly.

In order to capture the seasonal effect, Household Income and Expenditure Survey (HIES) is mostly distributed throughout the year. As for the weather, it is different in different times of the years, hence, most of the time the rain season also hits during the survey period.

1- Difficulty in finding enumerators.

One of the main challenge faced was in recruiting enumerators and retaining them throughout the survey period. It was advertised to recruit enumerators for Male' and utilised them for Atolls field work. However, only few applied which was not sufficient to conduct the first round of field operation in Male'. This delayed the data collection where the first round was split into two weeks (once the team finished one block they moved to the next block). With these few enumerators the field operation was launched, however, it was difficult to retain them. Enumerators turnover rate was high; hence enumerator recruitment process was done every round.

Due to the shortage of enumerators, it was decided to hire enumerators from each Atoll to complete the field work in the respective Atoll. Initially it was communicated with each Atoll/ Island Councils to recruit enumerators from the capital island and then dispatch teams to different islands. Again, there was not enough enumerators who applied for this task. As a result, in some of the Atolls, enumerators was hired from nearby islands to work in their respective islands while in other Atolls, the data collection round was split into two rounds. When data was collected in the islands, a trained enumerator was paired with untrained enumerator.

2- Lack of matured applicants and enumerators who can travel

Due to the shortage of enumerators, it was decided to hire enumerators from each Atoll to complete the field work in the respective Atoll. Initially it was communicated with each Atoll/ Island Councils to recruit enumerators from the capital island and then dispatch teams to different islands. Again, there was not enough enumerators who applied for this task. As a result, in some of the Atolls, enumerators was hired from nearby islands to work in their respective islands while in other Atolls, the data collection round was split into two rounds. When data was collected in the islands, a trained enumerator was paired with untrained enumerator.

Enumerators being so young they had to get the permission to travel from their parents. Some are not allowed to travel without a particular partner and others are totally not allowed to travel to any island. From the enumerators who can travel there were some, who cannot travel to a particular island due to personal reasons.

3- Lack of trained enumerators

Due to lack of enumerators for the field operation, we had to select untrained enumerators from the islands to pair with trained enumerators. Even though this helped in the locating and collecting information, they are not familiar and aware of the information gathered in the survey.

If any of the trained enumerator gets sick or was absent, there was no replacement for field work this result in delaying the field work.

Even though there are two partners in the field they cannot discuss the questionnaire and recall the training given to them, as only one partner is trained. And as they are not aware of the importance of this work they do not take it seriously. In order to make the field work fast, some of the enumerators took their own decision when a problem arise without discussing it with supervisors.

4- Lack in supervision

Other than in male', field operation was monitored by a staff from Atoll/island council (Coordinator). His responsibility was to handle all the administrative work and to verify that the enumerators were in the field. But most of the councils do not have enough staffs and they did not release the staff fully for HIES work. Due to this he cannot monitor all the groups.

As the coordinators had the same training as the enumerators, they are not fully aware of the mistake done by the enumerators. And these mistakes cannot be identified unless they are returned to NBS. By that time the mistakes cannot be corrected. It was unable to re-approach the respondent again.

The overall supervision of this survey in atoll/islands was done through the phone. Every day respective supervisor calls to the team and get the status of the work. However, the mistakes done while filling the questionnaire could not be identified over the phone. The mistakes done by the enumerators cannot be corrected unless a supervisor is at the field with them, at least the mistakes must be corrected in the early stages otherwise the mistakes will keep repeating.

5- Questionnaire filling

There were 7 modules in HIES. It consumes on average 3 to 4 hours per household to fill all these 7 modules. There were some households who could not spare such long hours with the field workers. Due to this reason, field worker has to visit more than one time to the same household.

The respondents are more likely to cooperate and participate in the survey if they are approached between 5pm and 9pm on weeknights and not over the weekends. But the survey field operation begins at 9:00am and ends at 6pm every day apart from Friday. Most of the households do not prefer the morning hours, as a result, field hours could not utilize most efficiently.

One of the biggest problems was reluctance from the respondents to cooperate and share information with the field workers. This was one of the reasons why the planned number of samples was not met. There were also several instances when the respondents failed to keep their initial interview appointments with the enumerators. They were either at work, out of the household, or simply changed their minds and refused outright to be interviewed.

Some of the questions were designed such a way that the question need to be filled directly from the respondent. However, due to unavailability of the respondent there were cases where some of the answers has to kept missing.

6- Household module

Section on Durable goods was something which had difficulty in recalling the purchase prices. And in the questionnaire, the question was asked what would be the selling price of the good if they sell the item. Rarely people sell the products, mostly they dispose the product and during the field we had difficulty in capturing this information

Floor Area was something difficult to capture, most of the time only the owner of the household knows the area of the rooms, kitchen, sitting room etc.

Rental market was rare in the Atolls. Hence it was very difficult especially in the Atoll to get self-reported rental value for these households.

7- Expenditure unit module

This module was specially made for the nuclear families those who are living in extended families. In general, the nuclear families spend their own expenses, which are unknown to the household head or the people living at home. If they are having children, they will buy goods separately for the kids. To capture these kinds of expenses it is necessary to ask the expenses separately with the nuclear families. But due to non-response and absenteeism of the respondents there was difficulty in filling this information.

In the questionnaire, there was a skip in Question 9 which say if no to that question go to Question 10. However, lots of enumerators have mistakenly skipped Question 10 and moved to Section 10, since in the questionnaire section 10 and Question 10 was on the same page.

8-Labour force module & employment module

Labour force module was supposed to fill for all the members above 15 years of age and employment form was supposed to fill for every earning person in the household, but some of the enumerators miss understood and filled 1 form per HH from each.

9-Food consumption module

In the questionnaire, even though if the household did not consume a particular good enumerator have to ask whether they had purchase the good during the reference period. However, few enumerators miss the skipping pattern and did not ask whether the household purchased the given food item.

There was different type of non-standard measurement reported during the field. We faced difficulty in converting these non-standard measurements to standard ones. Due to this absolute poverty could not be calculate. In the future, we have to find a way to test the different methods and come up with the best method to solve this problem.

Some of the households had the difficulty in recalling some of items, as they generally do not keep records of their expenditures and costs. Respondents' difficulty in recalling information was a general problem throughout the survey.

Overall, there were some weakness in the questionnaire as well as during the implementation stage. In the future all these things need to be taken account while designing the questionnaire and launching a new survey.





National Bureau of Statistics
Ministry of Finance & Treasury
Male', Maldives