Users' Manual for Handling Resampled Micro Data of the Fourth Expenditure and Consumption Survey (LECS4) 2007 in Lao PDR

Version 1.2

2018
The Institute of Statistical Mathematics (ISM)
and
Statistical Information Institute for Consulting and Analysis (SINFONICA)

History of revision of the manual

- Version 1.2 in March 2018
  Revised for publication based on the discussion during the workshop in November 2017.

- Version 1.1 in November 2017
  Prepared for the discussion during the workshop in November 2017.

- Version 1.0 in October 2013
  Provisionally prepared for the workshop in 2013 but not finalized for publication.

CONTENTS

Attachments

1. About this Manual

1. This manual was prepared for users to use the next 80% resampled micro data sets of Lao PDR Expenditure and consumption survey 2007/08 (LECS4).

R data frame	CSV data file	nrow	ncol	Original file name	Unit	Questionnaire
HHB80	HHB80.csv	6,636	39	HhHouseholds	Household	Household business: summary of VIII, X, XI, XII, XIV, XV and XVI
IND80	IND80.csv	38,439	22	HhComposition	Individual	Household Questionnaire/ I Household composition
EDU80	EDU80.csv	33,196	56	HhEducation	Individual	Household Questionnaire/ III Education
INC80	INC80.csv	3,252	31	HhIncome	Individual	Household Questionnaire/ XV Income and transfers
DIA80	DIA80.csv	1,085,932 (*)	28	HhDiarySheet	Household, Transaction	Diary Sheet
DUR80	DUR80.csv	67,056	16	HhDurables	Household, Durables	Household Questionnaire/ VIII Household possession of durables
Housing80	Hosing80.csv	6,636	37	HhHousing	Household	Household Questionnaire/ IX Housing conditions
Purchase80	Purchase80.csv	10,140	17	HhPurchase1	Household, Durables	Household Questionnaire/ XIV Households' purchase and selling of durables

Note: The number of rows of DIA80.csv is over the limitation (1,048,576) of Excel.

2. The original micro data sets composed of all the samples were provided by Lao Department of Statistics based on the Charter for Experimental Laboratory for Research Purpose Statistical Use of Micro Data. They were reorganized and resampled at the rate of 80% by Sinfonica.

3. The above resampled data sets are available through the Institute of Statistical Mathematics (ISM) both in R and CSV format. CSV files are readable by Excel as well as any statistical software.

4. This manual was first compiled in September 2017 by;

Hiroshige Furuta
Visiting Senior Research Fellow, Sinfonica

2. Outline of the Survey

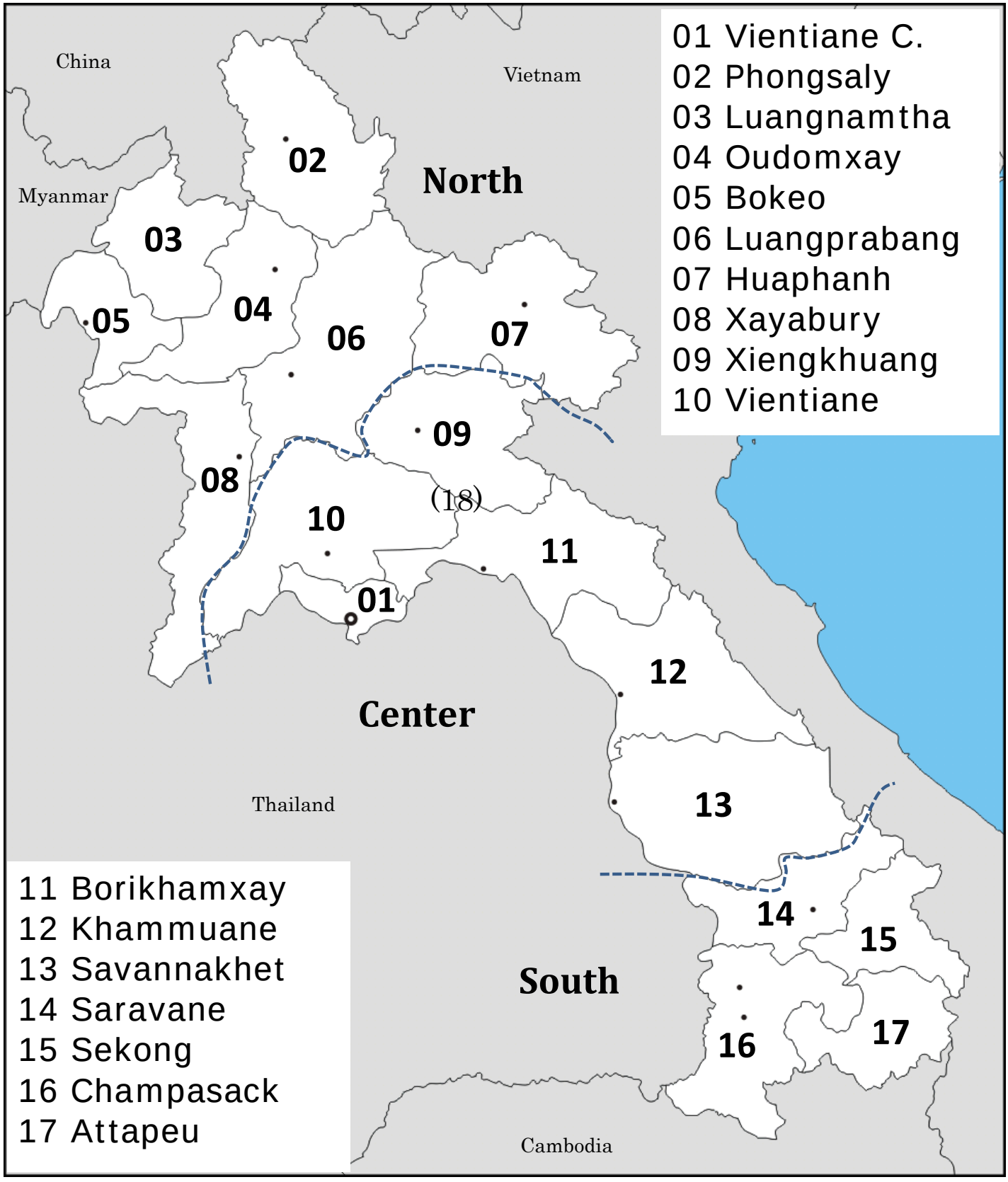
Based on the survey report, the outline of LECS4 2007/08 was summarized as the next.

Objectives of the survey	● The purpose of the expenditure and consumption survey (LECS) is to estimate the expenditure and consumption of household as well as production, investment, accumulation and other socio-economic aspects of the households in the formal and informal sector of the economy. ● The main objectives of this survey are: - Estimation at macro level for national accounts, including private consumption, household investment, production and income from agriculture and household business; - Structure of household consumption (weight system) for consumption price index calculation (CPI); - Estimation on labor force; - Nutrition statistic; - Poverty statistics and statistics of income distribution.
Topics covered by the survey	The scope of LECS4 includes; Households, Time use, Prices, Villages and Diary. ● HOUSEHOLDS: Household consumption, parents, education, labour force participation, victimization, nutrition, health check, possession of durables and assets, housing conditions, household businesses, agricultural households, health status and services, health costs, purchases and selling of durables, incomes and transfers, borrowing and lending by households. ● DIARY: All household transactions during sampled months. Transactions covered consumption/ expenditure, household business, agriculture and investment outlays. ● TIME USE: Time spent for a period of 24 hours for 22 activities ● PRICES: Prices for 92 basic goods and services recorded in nearest local market ● VILLAGES: Demography, general economic conditions, access to services, agriculture, prices
Frequency of the survey	● Every five years. ● The present round of surveys started from 1992.
Survey period	The survey was undertaken from April 2007 to March 2008 (for a period of 12 months), in order to be able to provide data on expenditure and consumption covering all seasons and relating to aspects of every area and region in the Lao PDR

Coverage of the survey	● The universe is all private households in Lao PDR. ● Geographic coverage is as follows; - National - Urban/Rural - Rural villages with access to road/ rural villages without access to road - Three Regions; North, Center and South
Sample design	● Two stage sampling method was employed; 1) PSU The first step was selection of sample villages using the zoom selection methodology [sic] according to the PPS. Strata were province, district, rural area with access to road and rural area without access to road. The number of sample villages in each province is in between 17 to 48 villages depending on the number of villages, and the number of households in every survey area. The number of sample villages was 518. 2) SSU In each sample village, 16 households were selected. Half of the number of households were the same as households that were surveyed in the LECS3, and the other half were new households that previously were not surveyed. Selection of the 8 sample households from the survey of LECS3 used the zoom methodology on arbitrary basis by taking part in a lottery among LECS3 households. New 8 sample households were selected among the other households in the village using the same methodology. Together the number of sample households in one village was 16. In total, the number of sample households was 8,296.
Data collection method	● Data collection was carried out for each household during one month. ● A diary was used for daily recording of each transaction for expenditure and consumption. ● For other parts of the survey, the enumerator conducted interviews with members of the household. ● The field work was conducted for a period of 12 months starting from April 2007 to March 2008. Enumerators were always being on place in the village during the survey was undertaken in the respective village. ● After completing field data collection, the supervisor checked for missing data and data coincidence.
Estimation	Weight variables were given in each data file.
Publication	“Survey results on expenditure and consumption of households 2007/2008 LECS 4” in May 2009

Technical and financial assistance	Technical assistance by Statistics Sweden and financial assistance by SIDA.

Provinces Map



Note: The above map of 17 provinces was used for the report on survey results. The number of provinces at the time of field work was 18.

3. Data and metadata provided by NSO

The following 6 micro data files and metadata were provided to Sinfonica by Lao Department of Statistics on the occasion of the International Workshop held at Kawagoe in 2012.

☐ **Data**

Original micro data files in SPSS format				
Original file name	nrow	ncol	Unit	Questionnaire
HhHouseholds.sav	8,296	33	Household	Household business: summary of VIII, X, XI, XII, XIV, XV and XVI
HhComposition.sav	48,021	19	Individual	Household Questionnaire/ I Household composition
HhEducation.sav	41,455	53	Individual	Household Questionnaire/ III Education
HhIncome.sav	4,126	28	Individual	Household Questionnaire/ XV Income and transfers
HhDiarySheet.sav	1,358,317	19	Household, Transaction	Diary Sheet
HhDurables.sav	83,753	13	Household, Durables	Household Questionnaire/ VIII Household possession of durables

☐ **Metadata**

Questionnaire		Remarks
	LECS4 Household_Eng.pdf	Household questionnaire in English (37 pages)
	LECS4 Diary Sheet.pdf	Diary sheet in English (3 pages)
	ItemforDiarySheet.xlsx	List of Diary item codes and names

Additional two micro data files were provided upon request on the occasion of 2017 Workshop.

Original file name	nrow	ncol	Unit	Questionnaire
HhHousing.sav	8,296	37	Household	Household Questionnaire/ IX Housing conditions
HhPurchase1.sav	12,609	17	Household, Durables	Household Questionnaire/ XIV Households' purchase and selling of durables

☐ Website of Lao Department of Statistics

http://www.lsb.gov.la/nada/index.php/catalog (at the time of 2013, but not available in 2017)

NADA		Remarks
	LECSIV Study Documentation v104.pdf	in English
Survey documents in Lao		
	LECSIV_Definition_Lao.pdf	
	LECSIV_HowtowriteQuestionnaire_Lao.pdf	
	LECSIV_Manual_Lao,pdf	
Other		
	en_lecs4.pdf	Outline of the survey in English
Survey report		
	1update report lecs 4 final_20_7_2010.pdf	

☐ Website of Lao Statistics Bureau

http://www.lsb.gov.la/lsb/en/report-census-and-survey/ (Accessed on 9 September 2017)

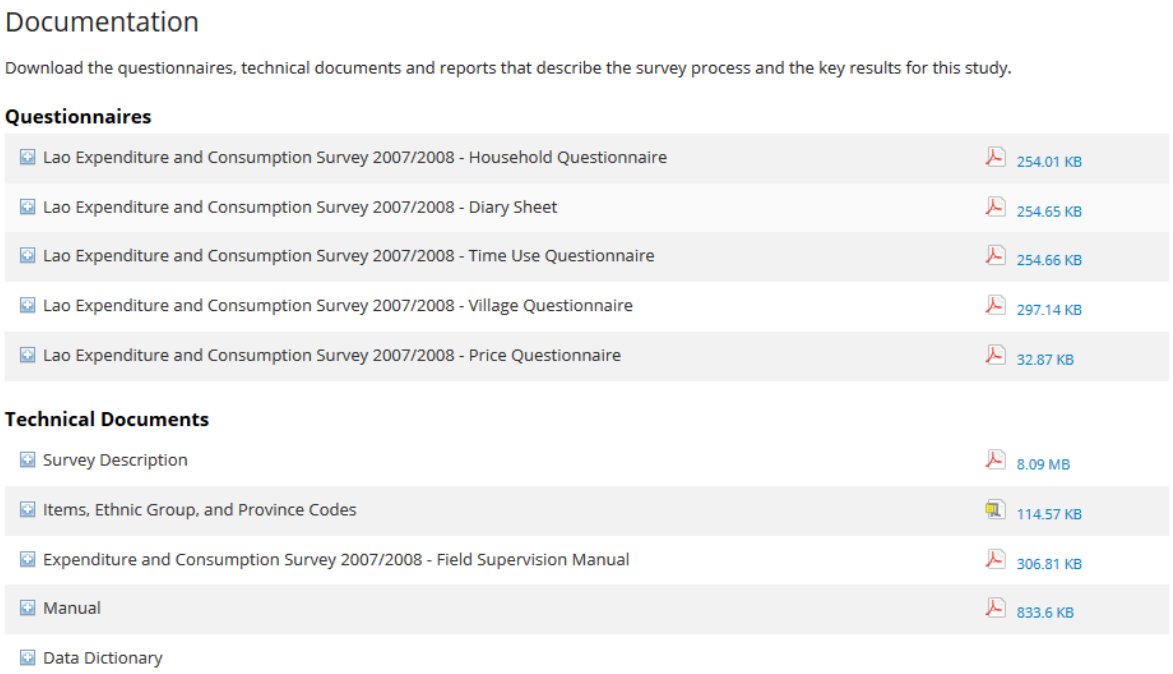
The survey report is available;

1update report lecs 4 final_20_7_2010.pdf

☐ IHSN

http://catalog.ihsn.org/index.php/catalog/198/data_dictionary

The following documents are available.



Documentation

Download the questionnaires, technical documents and reports that describe the survey process and the key results for this study.

Questionnaires

Lao Expenditure and Consumption Survey 2007/2008 - Household Questionnaire	254.01 KB
Lao Expenditure and Consumption Survey 2007/2008 - Diary Sheet	254.65 KB
Lao Expenditure and Consumption Survey 2007/2008 - Time Use Questionnaire	254.66 KB
Lao Expenditure and Consumption Survey 2007/2008 - Village Questionnaire	297.14 KB
Lao Expenditure and Consumption Survey 2007/2008 - Price Questionnaire	32.87 KB

Technical Documents

Survey Description	8.09 MB
Items, Ethnic Group, and Province Codes	114.57 KB
Expenditure and Consumption Survey 2007/2008 - Field Supervision Manual	306.81 KB
Manual	833.6 KB
Data Dictionary	

Remarks: Province code and new province code is listed in the above.

4. Data import

Strategy

1) To import SPSS files into R.

2) The household identifier variable “HhID” exists in each file.

3) The household weight variable “Hhweight” exists in each file.

- Original data files

Micro data files provided to Sinfonica were the next 8 files in SPSS format.

Lao Expenditure and Consumtion Survey 2007/2008 (LESC4)

No	File Name in SPSS	Size (KB)	Data frame in R
1	I. HhComposition.sav	5,484	IND
2	HhDiary Sheet.sav	148,222	DIA
3	VIII. HhDurables.sav	6,374	DUR
4	III. HhEducation.sav	6,686	EDU
5	HhHouseholds.sav	2,094	HHB
6	XV. HhIncome.sav	457	INC
7	HhHousing.sav	1,745	Housing
8	HhPurchase1.sav	1,859	Purchase

- The above files were imported into R software.

```
> list.files()
[1] "HhComposition.sav" "HhDiary Sheet.sav" "HhDurables.sav"
[4] "HhEducation.sav"   "HhHouseholds.sav"  "HhIncome.sav"
> library(foreign)

> IND<-data.frame(read.spss("HhComposition.sav",use.value.labels=F))
> dim(IND)
[1] 48021    19

> DIA<-data.frame(read.spss("HhDiary Sheet.sav",use.value.labels=F))
> dim(DIA)
[1] 1358317      19

> DUR<-data.frame(read.spss("HhDurables.sav",use.value.labels=F))
> dim(DUR)
[1] 83753    13

> EDU<-data.frame(read.spss("HhEducation.sav",use.value.labels=F))
> dim(EDU)
```

```
[1] 41455    53

> HHB<-data.frame(read.spss("HhHouseholds.sav",use.value.labels=F))
> dim(HHB)
[1] 8296   33

> INC<-data.frame(read.spss("HhIncome.sav",use.value.labels=F))
> dim(INC)
[1] 4126   28

> Housing<-data.frame(read.spss("HhHousing.sav",use.value.labels=F))
> dim(Housing)
[1] 8296   37

> Purchase<-data.frame(read.spss("HhPurchase1.sav",use.value.labels=F))
> dim(Purchase)
[1] 12609    17
```

➢ Variable names of each data frame

```
> colnames(HHB)
 [1] "SerialNr"       "HhID"           "VillageID"      "Province"
 [5] "DistrictID"     "VillageType"    "Hhnumber"       "Interview_Month"
 [9] "P8"             "P10Q1a_1"       "P10Q1a_2"       "P10Q1a_3"
[13] "P11Q1S1"        "P12S1Q1"        "P12S3Dry"       "P12S3Wet"
[17] "P12S5Q1"        "P12S6Q1"        "P12S7Q1"        "P12S7Q2"
[21] "P12S8Q1"        "P14S1"          "P14S2"          "P14S3"
[25] "P14S4"          "P14S5"          "P15"            "P16S1Q1"
[29] "P16S2Q1"        "Male"           "Female"         "Total"
[33] "Hhweight"

> colnames(IND)
 [1] "SerialNr"       "HhID"           "VillageID"      "Province"
 [5] "DistrictID"     "VillageType"    "Hhnumber"       "Interview_Month"
 [9] "PersID"         "PCode"          "P1Q2"           "P1Q3"
[13] "P1Q4a"          "P1Q4b"          "P1Q4c"          "P1Q5"
[17] "P1Q6"           "P1Q7"           "Hhweight"

> colnames(EDU)
 [1] "SerialNr"       "HhID"           "VillageID"      "Province"
 [5] "DistrictID"     "VillageType"    "Hhnumber"       "Interview_Month"
 [9] "PersID"         "PCode"          "P3Q1"           "P3Q2"
[13] "P3Q3"           "P3Q4"           "P3Q4Other"      "P3Q5"
[17] "P3Q6"           "P3Q7a"          "P3Q7b"          "P3Q8"
[21] "P3Q8Other"      "P3Q9"           "P3Q9Other"      "P3Q10"
[25] "P3Q11a"         "P3Q11b"         "P3Q12"          "P3Q12Other"
[29] "P3Q14a"         "P3Q14b"         "P3Q14c"         "P3Q14d"
[33] "P3Q14e"         "P3Q14f"         "P3Q14g"         "P3Q14i"
[37] "P3Q14h"         "P3Q15"          "P3Q16"          "P3Q17"
[41] "P3Q18a"         "P3Q18b"         "P3Q19"          "P3Q19Other"
[45] "p3Q20"          "P3Q21"          "P3Q22"          "P3Q23"
[49] "P3Q24"          "P3Q25"          "P3Q26"          "P3Q26Other"
[53] "Hhweight"

> colnames(INC)
 [1] "PersID"         "HhID"           "SerialNr"       "VillageID"
 [5] "DistrictID"     "Province"       "VillageType"    "Interview_Month"
 [9] "P1Q2"           "P1Q3"           "P1Q5"           "P1Q6"
[13] "P1Q7"           "Hhweight"       "Incom800"       "Incom801"
[17] "Incom802"       "Incom803"       "Incom804"       "Incom805"
[21] "Incom806"       "Incom807"       "Incom808"       "Incom809"
[25] "Incom810"       "Incom811"       "Incom812"       "IncomeOth"
```

```
> colnames(DIA)
 [1] "SerialNr"       "HhID"           "VillageID"      "Province"
 [5] "DistrictID"     "VillageType"    "Hhnumber"       "Interview_Month"
 [9] "DiaryID"        "Page"           "Serial_1"       "Unit"
[13] "Quantity"       "Kip"            "Kind"           "Produced"
[17] "Purpose"        "Item"           "Hhweight"

> colnames(DUR)
 [1] "HhID"           "SerialNr"       "VillageID"      "DistrictID"
 [5] "Province"       "VillageType"    "Interview_Month" "Hhweight"
 [9] "DurCode"        "P8Q1a"          "P8Q1b"          "P8Q2"
[13] "P8Oth"

> colnames(Housing)
 [1] "SerialNr"       "HhID"           "VillageID"      "Province"
 [5] "DistrictID"     "VillageType"    "Hhnumber"       "Interview_Month"
 [9] "P9Q1"           "P9Q1Oth"        "P9Q2"           "P9Q3a"
[13] "P9Q3b"          "P9Q3Oth"        "P9Q4"           "P9Q4Oth"
[17] "P9Q5"           "P9Q5Oth"        "P9Q6a"          "P9Q6b"
[21] "P9Q7"           "P9Q7b"          "P9Q8"           "P9Q8Oth"
[25] "P9Q9"           "P9Q10"          "P9Q10Oth"       "P9Q11"
[29] "P9Q12"          "P9Q12Oth"       "P9Q13"          "P9Q13Oth"
[33] "P9Q14"          "P9Q14Oth"       "P9Q15"          "P9Q15Oth"
[37] "Hhweight"

> colnames(Purchase)
 [1] "SerialNr"       "HhID"           "VillageID"      "Province"
 [5] "DistrictID"     "VillageType"    "Hhnumber"       "Interview_Month"
 [9] "P14S1"          "ItemB"          "Bought"         "KipB"
[13] "ItemB208Oth"    "ItemB237Oth"    "ItemB272Oth"    "ItemB304Oth"
[17] "Hhweight"
```

- Identifier

```
# The variable of HhID is household identifier and PersID is personal identifier.

> length(unique(HHB$HhID))
[1] 8296
> length(unique(IND$HhID))
[1] 8296
> length(unique(EDU$HhID))
[1] 8296
> length(unique(INC$HhID))
[1] 2571
> length(unique(DIA$HhID))
[1] 8296
> length(unique(DUR$HhID))
[1] 8282
> length(unique(Housing$HhID))
[1] 8296
> length(unique(Purchase$HhID))
[1] 5113

> sum(duplicated(HHB$HhID))
[1] 0
> sum(duplicated(IND$PersID))
[1] 0
> sum(duplicated(EDU$PersID))
[1] 0
> sum(duplicated(INC$PersID))
[1] 0
```

```
> sum(duplicated(DIA$SerialNr))
[1] 1350036
> sum(duplicated(DUR$HhID))
[1] 75471
> sum(duplicated(DUR$SerialNr))
[1] 75486
```

DiaryID is the unique identifier of data frame DIA.

```
> range(d$DiaryID)
[1]       1 1358869
> length(unique(d$DiaryID))
[1] 1358317
```

Naming rule of variables

PxxQyy
where, xx is the number of Part in Household questionnaire,
yy is the number of Question

For example;
P1Q2 is the second question of Part I. Household composition, that is, the relationship to household head.

5. Data Check

5.1 Structure of each data file

- Structure of each data file

```
# Confirmed type of variables of each file

> file.list<-list(HHB, IND, EDU, INC, DIA, DUR, Housing, Purchase)
> file.names<-c("HHB", "IND", "EDU", "INC", "DIA", "DUR", "Housing", "Purchase")
> for(j in 1:8){
+ cat(c("¥n¥n#####", file.names[j], "#####¥n"))
+ cat(c("> dim(", file.names[j], ")¥n"))
+ print(dim(file.list[[j]]))
+ cat(c("¥n> str(", file.names[j], ")¥n"))
+ print(str(file.list[[j]]))
+ }


##### HHB #####
> dim( HHB )
[1] 8296   33

> str( HHB )
'data.frame':   8296 obs. of  33 variables:
 $ SerialNr       : Factor w/ 8281 levels ".       ","0000001",..: 267 265 255 257 262 266 268 261
256 258 ...
 $ HhID           : Factor w/ 8296 levels "010100102","010100103",..: 1 2 3 4 5 6 7 8 9 10 ...
 $ VillageID      : Factor w/ 519 levels "0101001","0101002",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ Province       : Factor w/ 18 levels "01","02","03",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ DistrictID     : Factor w/ 135 levels "0101","0102",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhnumber       : Factor w/ 31 levels "01","02","03",..: 2 3 4 5 6 8 10 11 16 17 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ P8             : Factor w/ 2 levels "1","2": 1 1 1 1 1 1 1 1 1 1 ...
 $ P10Q1a_1       : Factor w/ 2 levels "1","2": 2 2 1 1 2 1 2 1 1 2 ...
 $ P10Q1a_2       : Factor w/ 2 levels "1","2": 2 2 2 2 2 2 2 2 2 2 ...
 $ P10Q1a_3       : Factor w/ 2 levels "1","2": 2 2 2 2 2 2 2 2 2 2 ...
 $ P11Q1S1        : Factor w/ 2 levels "1","2": 2 1 2 1 2 1 1 1 2 1 ...
 $ P12S1Q1        : Factor w/ 2 levels "1","2": 1 2 2 2 2 2 1 2 2 2 ...
 $ P12S3Dry       : Factor w/ 2 levels " ","1": 1 1 1 1 1 1 1 1 1 1 ...
 $ P12S3Wet       : Factor w/ 2 levels " ","2": 2 1 1 1 1 1 2 1 1 1 ...
 $ P12S5Q1        : Factor w/ 2 levels "1","2": 1 2 2 2 2 2 2 2 2 2 ...
 $ P12S6Q1        : Factor w/ 2 levels "1","2": 1 2 2 2 2 2 2 2 2 2 ...
 $ P12S7Q1        : Factor w/ 2 levels "1","2": 2 2 2 2 2 2 1 2 2 2 ...
 $ P12S7Q2        : Factor w/ 2 levels "1","2": 2 2 2 2 2 2 1 2 2 2 ...
 $ P12S8Q1        : Factor w/ 2 levels "1","2": 1 2 2 1 2 2 2 1 2 2 ...
 $ P14S1          : Factor w/ 2 levels "1","2": 2 1 1 1 1 2 2 1 1 1 ...
 $ P14S2          : Factor w/ 2 levels "1","2": 2 2 2 2 2 2 2 1 2 2 ...
 $ P14S3          : Factor w/ 2 levels "1","2": 2 2 2 2 2 2 2 2 2 2 ...
 $ P14S4          : Factor w/ 2 levels "1","2": 2 2 2 2 2 2 2 2 2 2 ...
 $ P14S5          : Factor w/ 2 levels "1","2": 2 2 2 2 2 2 2 2 2 2 ...
 $ P15            : Factor w/ 2 levels "1","2": 1 1 1 1 1 1 1 1 1 1 ...
```

```
 $ P16S1Q1        : Factor w/ 2 levels "1","2": 1 2 2 2 1 1 2 2 2 2 ...
 $ P16S2Q1        : Factor w/ 2 levels "1","2": 2 2 2 2 1 2 2 2 2 2 ...
 $ Male           : num  4 2 2 2 3 1 4 2 3 1 ...
 $ Female         : num  3 4 2 2 3 6 4 4 1 3 ...
 $ Total          : num  7 6 4 4 6 7 8 6 4 4 ...
 $ Hhweight       : num  174 174 174 174 174 ...
NULL


##### IND #####
> dim( IND )
[1] 48021    19

> str( IND )
'data.frame':   48021 obs. of  19 variables:
 $ SerialNr       : Factor w/ 8281 levels ".       ","0000001",..: 267 267 267 267 267 267 267 265
265 265 ...
 $ HhID           : Factor w/ 8296 levels "010100102","010100103",..: 1 1 1 1 1 1 1 2 2 2 ...
 $ VillageID      : Factor w/ 519 levels "0101001","0101002",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ Province       : Factor w/ 18 levels "01","02","03",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ DistrictID     : Factor w/ 135 levels "0101","0102",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhnumber       : Factor w/ 31 levels "01","02","03",..: 2 2 2 2 2 2 2 3 3 3 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ PersID         : Factor w/ 48021 levels "01010010201",..: 1 2 3 4 5 6 7 8 9 10 ...
 $ PCode          : Factor w/ 27 levels "01","02","03",..: 1 2 3 4 5 6 7 1 2 3 ...
 $ P1Q2           : num  1 2 7 7 4 4 4 1 2 4 ...
 $ P1Q3           : num  1 2 1 2 1 2 1 1 2 2 ...
 $ P1Q4a          : num  1 17 15 10 10 1 20 10 2 4 ...
 $ P1Q4b          : num  12 2 11 10 5 5 1 6 2 10 ...
 $ P1Q4c          : num  1952 1965 1973 1975 1987 ...
 $ P1Q5           : num  55 42 34 32 20 17 14 49 60 38 ...
 $ P1Q6           : num  2 2 1 1 1 1 1 2 2 1 ...
 $ P1Q7           : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhweight       : num  174 174 174 174 174 174 174 174 174 174 ...
NULL


##### EDU #####
> dim( EDU )
[1] 41455    53

> str( EDU )
'data.frame':   41455 obs. of  53 variables:
 $ SerialNr       : Factor w/ 8281 levels ".       ","0000001",..: 267 267 267 267 267 267 267 265
265 265 ...
 $ HhID           : Factor w/ 8296 levels "010100102","010100103",..: 1 1 1 1 1 1 1 2 2 2 ...
 $ VillageID      : Factor w/ 519 levels "0101001","0101002",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ Province       : Factor w/ 18 levels "01","02","03",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ DistrictID     : Factor w/ 135 levels "0101","0102",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhnumber       : Factor w/ 31 levels "01","02","03",..: 2 2 2 2 2 2 2 3 3 3 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ PersID         : Factor w/ 41455 levels "01010010201",..: 1 2 3 4 5 6 7 8 9 10 ...
 $ PCode          : Factor w/ 22 levels "01","02","03",..: 1 2 3 4 5 6 7 1 2 3 ...
 $ P3Q1           : num  1 1 1 1 1 1 1 1 1 1 ...
```

```
 $ P3Q2           : num  1 1 1 1 1 1 1 1 1 1 ...
 $ P3Q3           : num  1 1 1 1 1 1 1 1 1 1 ...
 $ P3Q4           : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q4Other      : Factor w/ 84 levels "ﾀｯ□ﾃｮﾉ 。¥xf5",..: 6 6 6 6 6 6 6 6 6 6 ...
 $ P3Q5           : num  2 2 2 2 2 2 1 2 2 2 ...
 $ P3Q6           : num  3 3 3 3 3 3 2 3 3 3 ...
 $ P3Q7a          : num  NA NA NA NA NA NA 2 NA NA NA ...
 $ P3Q7b          : num  NA NA NA NA NA NA 1 NA NA NA ...
 $ P3Q8           : num  NA NA NA NA NA NA 2 NA NA NA ...
 $ P3Q8Other      : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q9           : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q9Other      : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q10          : num  1960 1973 1979 1982 1993 ...
 $ P3Q11a         : num  2 2 2 2 2 2 2 3 1 1 ...
 $ P3Q11b         : num  1 3 3 3 3 3 1 3 5 5 ...
 $ P3Q12          : num  NA NA NA NA 3 6 NA NA NA NA ...
 $ P3Q12Other     : Factor w/ 48 levels "」□ﾖﾒｯ□。ｽｴ¥xf2  ",..: 12 12 12 12 12 12 12 12 12 12 ...
 $ P3Q14a         : num  0 0 0 0 0 0 720000 0 0 0 ...
 $ P3Q14b         : num  0 0 0 0 0 0 180000 0 0 0 ...
 $ P3Q14c         : num  0 0 0 0 0 0 210000 0 0 0 ...
 $ P3Q14d         : num  0 0 0 0 0 0 50000 0 0 0 ...
 $ P3Q14e         : num  0 0 0 0 0 0 40000 0 0 0 ...
 $ P3Q14f         : num  0 0 0 0 0 0 2700000 0 0 0 ...
 $ P3Q14g         : num  0 0 0 0 0 0 0 0 0 0 ...
 $ P3Q14i         : num  0 0 0 0 0 0 0 0 0 0 ...
 $ P3Q14h         : num  0 0 0 0 0 0 3900000 0 0 0 ...
 $ P3Q15          : num  NA NA NA NA NA NA 2 NA NA NA ...
 $ P3Q16          : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q17          : num  0 0 0 0 0 0 2 0 0 0 ...
 $ P3Q18a         : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q18b         : num  NA NA NA NA NA NA 5 NA NA NA ...
 $ P3Q19          : num  NA NA NA NA NA NA 3 NA NA NA ...
 $ P3Q19Other     : num  NA NA NA NA NA NA NA NA NA NA ...
 $ p3Q20          : num  NA NA NA NA NA NA 1 NA NA NA ...
 $ P3Q21          : num  NA NA NA NA NA NA 2 NA NA NA ...
 $ P3Q22          : num  NA NA NA NA NA NA 1 NA NA NA ...
 $ P3Q23          : num  NA NA NA NA NA NA 2 NA NA NA ...
 $ P3Q24          : num  0 0 0 0 0 0 NA 0 0 0 ...
 $ P3Q25          : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q26          : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q26Other     : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Hhweight       : num  174 174 174 174 174 174 174 174 174 174 ...
NULL


##### INC #####
> dim( INC )
[1] 4126   28

> str( INC )
'data.frame':   4126 obs. of  28 variables:
 $ PersID         : Factor w/ 4126 levels "01010010201",..: 1 2 3 4 5 6 7 8 9 10 ...
 $ HhID           : Factor w/ 2571 levels "010100102","010100103",..: 1 1 1 1 1 1 2 2 3 3 ...
 $ SerialNr       : Factor w/ 2570 levels ".       ","0000001",..: 184 184 184 184 184 184 182 182
173 173 ...
 $ VillageID      : Factor w/ 416 levels "0101001","0101002",..: 1 1 1 1 1 1 1 1 1 1 ...
```

```
 $ DistrictID     : Factor w/ 126 levels "0101","0102",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ Province       : Factor w/ 18 levels "01","02","03",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ P1Q2           : num  1 2 7 7 4 4 4 4 1 2 ...
 $ P1Q3           : num  1 2 1 2 1 2 2 1 1 2 ...
 $ P1Q5           : num  55 42 34 32 20 17 22 18 50 46 ...
 $ P1Q6           : num  2 2 1 1 1 1 1 1 2 2 ...
 $ P1Q7           : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhweight       : num  174 174 174 174 174 174 174 174 174 174 ...
 $ Incom800       : num  17000 580000 550000 550000 550000 ...
 $ Incom801       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom802       : num  NA NA NA NA NA NA NA NA 7e+05 NA ...
 $ Incom803       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom804       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom805       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom806       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom807       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom808       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom809       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom810       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom811       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom812       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ IncomeOth      : Factor w/ 22 levels "ﾀｮﾉｨ¥xec ﾉｼ､･ｾ｡ﾂｻｻｼｭ     ",..: 4 4 4 4 4 4 4 4 4 4 ...
NULL


##### DIA #####
> dim( DIA )
[1] 1358317      19

> str( DIA )
'data.frame':   1358317 obs. of  19 variables:
 $ SerialNr       : Factor w/ 8281 levels ".       ","0000001",..: 267 267 267 267 267 267 267 267
267 267 ...
 $ HhID           : Factor w/ 8296 levels "010100102","010100103",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ VillageID      : Factor w/ 519 levels "0101001","0101002",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ Province       : Factor w/ 18 levels "01","02","03",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ DistrictID     : Factor w/ 135 levels "0101","0102",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhnumber       : Factor w/ 31 levels "01","02","03",..: 2 2 2 2 2 2 2 2 2 2 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ DiaryID        : num  593536 593537 593538 593539 593540 ...
 $ Page           : num  14 14 14 13 13 13 13 13 13 13 ...
 $ Serial_1       : Factor w/ 8754 levels "        ","0000001",..: 288 288 288 288 288 288 288 288
288 288 ...
 $ Unit           : num  18 18 5 1 5 18 8 18 18 10 ...
 $ Quantity       : num  10 1 2 0.8 1 1 1 4 1 1 ...
 $ Kip            : num  10000 3000 2000 10500 5000 10000 10000 4000 3000 1000 ...
 $ Kind           : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Produced       : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Purpose        : num  2 2 2 2 2 2 2 2 2 2 ...
 $ Item           : Factor w/ 443 levels "Glutinous rice",..: 322 321 11 12 322 284 271 322 321
340 ...
 $ Hhweight       : num  174 174 174 174 174 174 174 174 174 174 ...
NULL
```

```
##### DUR #####
> dim( DUR )
[1] 83753    13

> str( DUR )
'data.frame':   83753 obs. of  13 variables:
 $ HhID           : Factor w/ 8282 levels "010100102","010100103",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ SerialNr       : Factor w/ 8267 levels ".       ","0000001",..: 267 267 267 267 267 267 267 267
267 267 ...
 $ VillageID      : Factor w/ 519 levels "0101001","0101002",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ DistrictID     : Factor w/ 135 levels "0101","0102",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ Province       : Factor w/ 18 levels "01","02","03",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ Hhweight       : num  174 174 174 174 174 174 174 174 174 174 ...
 $ DurCode        : num  1 5 8 12 13 14 22 25 26 30 ...
 $ P8Q1a          : num  NA 0 0 0 0 NA 0 0 0 NA ...
 $ P8Q1b          : num  1 4 1 1 2 1 2 6 1 1 ...
 $ P8Q2           : num  84000000 18480000 600000 100000 10000 ...
 $ P8Oth          : num  NA NA NA NA NA NA NA NA NA NA ...
NULL
>

##### Housing #####
> dim(Housing )
[1] 8296   37
> str(Housing )
'data.frame':   8296 obs. of  37 variables:
 $ SerialNr       : Factor w/ 8281 levels ".       ","0000001",..: 267 265 255 257 262 266 268 261
256 258 ...
 $ HhID           : Factor w/ 8296 levels "010100102","010100103",..: 1 2 3 4 5 6 7 8 9 10 ...
 $ VillageID      : Factor w/ 519 levels "0101001","0101002",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ Province       : Factor w/ 18 levels "01","02","03",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ DistrictID     : Factor w/ 135 levels "0101","0102",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhnumber       : Factor w/ 31 levels "01","02","03",..: 2 3 4 5 6 8 10 11 16 17 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ P9Q1           : Factor w/ 4 levels "1","2","3","4": 1 1 1 1 1 1 1 1 1 1 ...
 $ P9Q1Oth        : Factor w/ 4 levels "ﾀｻ□ｭ¥xec □ﾖｾｸ",..: 2 2 2 2 2 2 2 2 2 2 ...
 $ P9Q2           : num  5600000 4000000 4200000 8400000 8500000 4000000 10000000 8400000 8400000
3360000 ...
 $ P9Q3a          : Factor w/ 10 levels " ","0","1","2",..: 3 6 3 3 3 3 3 3 3 3 ...
 $ P9Q3b          : Factor w/ 10 levels " ","0","1","2",..: 2 2 2 2 2 2 2 6 2 2 ...
 $ P9Q3Oth        : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P9Q4           : Factor w/ 7 levels "1","2","3","4",..: 4 3 3 4 3 4 4 3 3 4 ...
 $ P9Q4Oth        : Factor w/ 56 levels "ﾖ□｡ｽﾖ□¥xec ｽﾄｴ/ﾁｯｭ      ",..: 3 3 3 3 3 3 3 3 3 3 ...
 $ P9Q5           : Factor w/ 7 levels "1","2","3","4",..: 2 4 2 2 1 2 2 2 2 1 ...
 $ P9Q5Oth        : Factor w/ 13 levels "                                ",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ P9Q6a          : num  5 41 36 7 10 10 7 15 9 10 ...
 $ P9Q6b          : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P9Q7           : num  105 81 144 56 54 91 90 64 225 78 ...
 $ P9Q7b          : num  4 3 5 4 3 5 4 4 6 5 ...
 $ P9Q8           : Factor w/ 6 levels "1","2","3","4",..: 6 6 6 6 6 6 6 6 6 6 ...
 $ P9Q8Oth        : Factor w/ 71 levels "ｭｺｴｺ､ｱ□ﾀｴ¥xf3                ",..: 43 45 45 25 25 43 43
```

```
25 25 25 ...
 $ P9Q9           : num  0 0 0 0 0 0 0 15 0 0 ...
 $ P9Q10          : Factor w/ 14 levels "      ","1     ",..: 11 11 11 11 11 11 11 11 11 11 ...
 $ P9Q10Oth       : Factor w/ 74 levels "ュュ¥xec □                    ",..: 45 47 47 27 27 45 45
27 27 27 ...
 $ P9Q11          : num  0 0 0 0 0 0 0 15 0 0 ...
 $ P9Q12          : Factor w/ 7 levels " ","0","1","2",..: 4 4 3 3 4 4 4 4 4 4 ...
 $ P9Q12Oth       : Factor w/ 7 levels "      ","「□「□",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ P9Q13          : Factor w/ 7 levels " ","0","1","2",..: 4 3 4 4 4 3 3 4 3 5 ...
 $ P9Q13Oth       : Factor w/ 28 levels "。ノコ、¥xecセ、          ",..: 2 2 2 2 2 2 2 2 2 2 ...
 $ P9Q14          : Factor w/ 10 levels " ","0","1","2",..: 5 5 9 7 7 7 7 7 7 7 ...
 $ P9Q14Oth       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P9Q15          : Factor w/ 8 levels " ","0","1","2",..: 3 3 3 3 3 3 3 3 3 3 ...
 $ P9Q15Oth       : Factor w/ 124 levels "チヲ、コセ¥xea □               ",..: 7 7 7 7 7 7 7 7 7 7 ...
 $ Hhweight       : num  174 174 174 174 174 ...
>
```

```
##### Purchase #####
> dim(Purchase )
[1] 12609    17
> str(Purchase )
'data.frame':   12609 obs. of  17 variables:
 $ SerialNr       : Factor w/ 5111 levels ".       ","0000001",..: 168 158 158 158 158 158 158 160
160 160 ...
 $ HhID           : Factor w/ 5113 levels "010100103","010100104",..: 1 2 2 2 2 2 2 3 3 3 ...
 $ VillageID      : Factor w/ 509 levels "0101001","0101002",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ Province       : Factor w/ 18 levels "01","02","03",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ DistrictID     : Factor w/ 135 levels "0101","0102",..: 1 1 1 1 1 1 1 1 1 1 ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhnumber       : Factor w/ 31 levels "01","02","03",..: 3 4 4 4 4 4 4 5 5 5 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ P14S1          : Factor w/ 1 level "1": 1 1 1 1 1 1 1 1 1 1 ...
 $ ItemB          : Factor w/ 43 levels "201","202","203",..: 16 3 10 22 26 33 43 2 3 4 ...
 $ Bought         : Factor w/ 2 levels "1","2": 1 1 1 1 1 1 1 1 1 1 ...
 $ KipB           : num  224000 600000 560000 11200000 2470000 ...
 $   ItemB208Oth            :  Factor  w/  106  levels  " ェ  □  ¥xec  ソ  ッ  イ  、
",..: 12 12 12 12 12 12 12 12 12 12 ...
 $  ItemB237Oth         :  Factor  w/  147  levels  " 。□ ト ウ ウ ノ セ , ト ¥xec  タ ェ ¥xf3
",..: 15 15 15 15 15 15 15 15 15 15 ...
 $  ItemB272Oth        :  Factor  w/  54  levels  " チ ッ 、¥xec  □ ォ □チ ¥xec  ス ¥xec  モ ァ □
",..: 16 16 16 16 16 16 16 16 16 16 ...
 $  ItemB304Oth         :  Factor  w/  44  levels  " ヲ ノ コ エ チ ッ 、¥xea  □ ス ¥xea  □
",..: 11 11 11 11 11 11 11 11 11 11 ...
 $ Hhweight       : num  174 174 174 174 174 ...
```

☐ **In each data frame, the following variables should be converted as character, and the rests as numeric.**

```
> cha.var<-c("SerialNr","HhID","VillageID","Province","DistrictID",
+ "PersID","P3Q4Other","P3Q12Other","IncomeOth")
```

```
> df<-HHB
> for(j in 1:ncol(df)){
+ if(is.element(colnames(df)[j],cha.var)){
+    df[,j]<-as.character(df[,j])
+ }else if(is.factor(df[,j])){
+    df[,j]<-as.numeric(as.character(df[,j]))
+ }
+ }
> str(df)
'data.frame':   8296 obs. of  33 variables:
 $ SerialNr       : chr  "0000302" "0000300" "0000289" "0000291" ...
 $ HhID           : chr  "010100102" "010100103" "010100104" "010100105" ...
 $ VillageID      : chr  "0101001" "0101001" "0101001" "0101001" ...
 $ Province       : chr  "01" "01" "01" "01" ...
 $ DistrictID     : chr  "0101" "0101" "0101" "0101" ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhnumber       : num  2 3 4 5 6 8 10 11 16 17 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ P8             : num  1 1 1 1 1 1 1 1 1 1 ...
 $ P1OQ1a_1       : num  2 2 1 1 2 1 2 1 1 2 ...
 $ P1OQ1a_2       : num  2 2 2 2 2 2 2 2 2 2 ...
 $ P1OQ1a_3       : num  2 2 2 2 2 2 2 2 2 2 ...
 $ P11Q1S1        : num  2 1 2 1 2 1 1 1 2 1 ...
 $ P12S1Q1        : num  1 2 2 2 2 2 1 2 2 2 ...
 $ P12S3Dry       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P12S3Wet       : num  2 NA NA NA NA NA 2 NA NA NA ...
 $ P12S5Q1        : num  1 2 2 2 2 2 2 2 2 2 ...
 $ P12S6Q1        : num  1 2 2 2 2 2 2 2 2 2 ...
 $ P12S7Q1        : num  2 2 2 2 2 2 1 2 2 2 ...
 $ P12S7Q2        : num  2 2 2 2 2 2 1 2 2 2 ...
 $ P12S8Q1        : num  1 2 2 1 2 2 2 1 2 2 ...
 $ P14S1          : num  2 1 1 1 1 2 2 1 1 1 ...
 $ P14S2          : num  2 2 2 2 2 2 2 1 2 2 ...
 $ P14S3          : num  2 2 2 2 2 2 2 2 2 2 ...
 $ P14S4          : num  2 2 2 2 2 2 2 2 2 2 ...
 $ P14S5          : num  2 2 2 2 2 2 2 2 2 2 ...
 $ P15            : num  1 1 1 1 1 1 1 1 1 1 ...
 $ P16S1Q1        : num  1 2 2 2 1 1 2 2 2 2 ...
 $ P16S2Q1        : num  2 2 2 2 1 2 2 2 2 2 ...
 $ Male           : num  4 2 2 2 3 1 4 2 3 1 ...
 $ Female         : num  3 4 2 2 3 6 4 4 1 3 ...
 $ Total          : num  7 6 4 4 6 7 8 6 4 4 ...
 $ Hhweight       : num  174 174 174 174 174 ...

HHB<-df
```

```
> df<-IND
> for(j in 1:ncol(df)){
+ if(is.element(colnames(df)[j],cha.var)){
+    df[,j]<-as.character(df[,j])
+ }else if(is.factor(df[,j])){
+    df[,j]<-as.numeric(as.character(df[,j]))
+ }
+ }
> str(df)
'data.frame':   48021 obs. of  19 variables:
 $ SerialNr       : chr  "0000302" "0000302" "0000302" "0000302" ...
 $ HhID           : chr  "010100102" "010100102" "010100102" "010100102" ...
 $ VillageID      : chr  "0101001" "0101001" "0101001" "0101001" ...
 $ Province       : chr  "01" "01" "01" "01" ...
 $ DistrictID     : chr  "0101" "0101" "0101" "0101" ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhnumber       : num  2 2 2 2 2 2 2 3 3 3 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ PersID         : chr  "01010010201" "01010010202" "01010010203" "01010010204" ...
 $ PCode          : num  1 2 3 4 5 6 7 1 2 3 ...
 $ P1Q2           : num  1 2 7 7 4 4 4 1 2 4 ...
 $ P1Q3           : num  1 2 1 2 1 2 1 1 2 2 ...
 $ P1Q4a          : num  1 17 15 10 10 1 20 10 2 4 ...
 $ P1Q4b          : num  12 2 11 10 5 5 1 6 2 10 ...
 $ P1Q4c          : num  1952 1965 1973 1975 1987 ...
 $ P1Q5           : num  55 42 34 32 20 17 14 49 60 38 ...
 $ P1Q6           : num  2 2 1 1 1 1 1 2 2 1 ...
 $ P1Q7           : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhweight       : num  174 174 174 174 174 174 174 174 174 174 ...

IND<-df


> df<-EDU
> for(j in 1:ncol(df)){
+ if(is.element(colnames(df)[j],cha.var)){
+    df[,j]<-as.character(df[,j])
+ }else if(is.factor(df[,j])){
+    df[,j]<-as.numeric(as.character(df[,j]))
+ }
+ }
> str(df)
'data.frame':   41455 obs. of  53 variables:
 $ SerialNr       : chr  "0000302" "0000302" "0000302" "0000302" ...
 $ HhID           : chr  "010100102" "010100102" "010100102" "010100102" ...
 $ VillageID      : chr  "0101001" "0101001" "0101001" "0101001" ...
 $ Province       : chr  "01" "01" "01" "01" ...
 $ DistrictID     : chr  "0101" "0101" "0101" "0101" ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhnumber       : num  2 2 2 2 2 2 2 3 3 3 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ PersID         : chr  "01010010201" "01010010202" "01010010203" "01010010204" ...
 $ PCode          : num  1 2 3 4 5 6 7 1 2 3 ...
 $ P3Q1           : num  1 1 1 1 1 1 1 1 1 1 ...
 $ P3Q2           : num  1 1 1 1 1 1 1 1 1 1 ...
 $ P3Q3           : num  1 1 1 1 1 1 1 1 1 1 ...
```

```
 $ P3Q4           : num  NA NA NA NA NA NA NA NA NA ...
 $ P3Q4Other      : chr  ""          "" ""          "" ""          "" ...
 $ P3Q5           : num  2 2 2 2 2 2 1 2 2 2 ...
 $ P3Q6           : num  3 3 3 3 3 3 2 3 3 3 ...
 $ P3Q7a          : num  NA NA NA NA NA NA 2 NA NA NA ...
 $ P3Q7b          : num  NA NA NA NA NA NA 1 NA NA NA ...
 $ P3Q8           : num  NA NA NA NA NA NA 2 NA NA NA ...
 $ P3Q8Other      : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q9           : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q9Other      : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q10          : num  1960 1973 1979 1982 1993 ...
 $ P3Q11a         : num  2 2 2 2 2 2 2 3 1 1 ...
 $ P3Q11b         : num  1 3 3 3 3 3 1 3 5 5 ...
 $ P3Q12          : num  NA NA NA NA 3 6 NA NA NA NA ...
 $ P3Q12Other     : chr  ""              "" ""              "" ""              "" ...
 $ P3Q14a         : num  0 0 0 0 0 0 720000 0 0 0 ...
 $ P3Q14b         : num  0 0 0 0 0 0 180000 0 0 0 ...
 $ P3Q14c         : num  0 0 0 0 0 0 210000 0 0 0 ...
 $ P3Q14d         : num  0 0 0 0 0 0 50000 0 0 0 ...
 $ P3Q14e         : num  0 0 0 0 0 0 40000 0 0 0 ...
 $ P3Q14f         : num  0 0 0 0 0 0 2700000 0 0 0 ...
 $ P3Q14g         : num  0 0 0 0 0 0 0 0 0 0 ...
 $ P3Q14i         : num  0 0 0 0 0 0 0 0 0 0 ...
 $ P3Q14h         : num  0 0 0 0 0 0 3900000 0 0 0 ...
 $ P3Q15          : num  NA NA NA NA NA NA 2 NA NA NA ...
 $ P3Q16          : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q17          : num  0 0 0 0 0 0 2 0 0 0 ...
 $ P3Q18a         : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q18b         : num  NA NA NA NA NA NA 5 NA NA NA ...
 $ P3Q19          : num  NA NA NA NA NA NA 3 NA NA NA ...
 $ P3Q19Other     : num  NA NA NA NA NA NA NA NA NA NA ...
 $ p3Q20          : num  NA NA NA NA NA NA 1 NA NA NA ...
 $ P3Q21          : num  NA NA NA NA NA NA 2 NA NA NA ...
 $ P3Q22          : num  NA NA NA NA NA NA 1 NA NA NA ...
 $ P3Q23          : num  NA NA NA NA NA NA 2 NA NA NA ...
 $ P3Q24          : num  0 0 0 0 0 0 NA 0 0 0 ...
 $ P3Q25          : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q26          : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P3Q26Other     : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Hhweight       : num  174 174 174 174 174 174 174 174 174 174 ...
> EDU.old<-EDU
> EDU<-df


> df<-INC
> for(j in 1:ncol(df)){
+ if(is.element(colnames(df)[j],cha.var)){
+    df[,j]<-as.character(df[,j])
+ }else if(is.factor(df[,j])){
+    df[,j]<-as.numeric(as.character(df[,j]))
+ }
+ }
> str(df)
'data.frame':   4126 obs. of  28 variables:
 $ PersID         : chr  "01010010201" "01010010202" "01010010203" "01010010204" ...
 $ HhID           : chr  "010100102" "010100102" "010100102" "010100102" ...
```

```
 $ SerialNr       : chr  "0000302" "0000302" "0000302" "0000302" ...
 $ VillageID      : chr  "0101001" "0101001" "0101001" "0101001" ...
 $ DistrictID     : chr  "0101" "0101" "0101" "0101" ...
 $ Province       : chr  "01" "01" "01" "01" ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ P1Q2           : num  1 2 7 7 4 4 4 4 1 2 ...
 $ P1Q3           : num  1 2 1 2 1 2 2 1 1 2 ...
 $ P1Q5           : num  55 42 34 32 20 17 22 18 50 46 ...
 $ P1Q6           : num  2 2 1 1 1 1 1 1 2 2 ...
 $ P1Q7           : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhweight       : num  174 174 174 174 174 174 174 174 174 174 ...
 $ Incom800       : num  17000 580000 550000 550000 550000 ...
 $ Incom801       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom802       : num  NA NA NA NA NA NA NA NA 7e+05 NA ...
 $ Incom803       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom804       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom805       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom806       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom807       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom808       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom809       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom810       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom811       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ Incom812       : num  NA NA NA NA NA NA NA NA NA NA ...
 $ IncomeOth      : chr  "                    " "                    " "                    " "
" ...
> INC<-df


> df<-DIA
> for(j in 1:ncol(df)){
+ if(is.element(colnames(df)[j],cha.var)){
+    df[,j]<-as.character(df[,j])
+ }else if(is.factor(df[,j])){
+    df[,j]<-as.numeric(as.character(df[,j]))
+ }
+ }
> str(df)
'data.frame':   1358317 obs. of  19 variables:
 $ SerialNr       : chr  "0000302" "0000302" "0000302" "0000302" ...
 $ HhID           : chr  "010100102" "010100102" "010100102" "010100102" ...
 $ VillageID      : chr  "0101001" "0101001" "0101001" "0101001" ...
 $ Province       : chr  "01" "01" "01" "01" ...
 $ DistrictID     : chr  "0101" "0101" "0101" "0101" ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhnumber       : num  2 2 2 2 2 2 2 2 2 2 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ DiaryID        : num  593536 593537 593538 593539 593540 ...
 $ Page           : num  14 14 14 13 13 13 13 13 13 13 ...
 $ Serial_1       : num  302 302 302 302 302 302 302 302 302 302 ...
 $ Unit           : num  18 18 5 1 5 18 8 18 18 10 ...
 $ Quantity       : num  10 1 2 0.8 1 1 1 4 1 1 ...
 $ Kip            : num  10000 3000 2000 10500 5000 10000 10000 4000 3000 1000 ...
 $ Kind           : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Produced       : num  1 1 1 1 1 1 1 1 1 1 ...
```

```
 $ Purpose        : num  2 2 2 2 2 2 2 2 2 2 ...
 $ Item           : atomic  328 327 11 12 328 290 277 328 327 346 ...
  ..- attr(*, "value.labels")= Named num  812 811 810 809 808 807 806 805 804 803 ...
  .. ..- attr(*, "names")= chr  "Other current tranfers Specify¥x85" "Remittance, gifts in kind
for abroad" "Remittance, gifts in kind for Laos" "Remittance, gifts in cash for abroad" ...
 $ Hhweight       : num  174 174 174 174 174 174 174 174 174 174 ...
> DIA.old<-DIA
> DIA<-df


> df<-DUR
> for(j in 1:ncol(df)){
+ if(is.element(colnames(df)[j],cha.var)){
+    df[,j]<-as.character(df[,j])
+ }else if(is.factor(df[,j])){
+    df[,j]<-as.numeric(as.character(df[,j]))
+ }
+ }
> str(df)
'data.frame':   83753 obs. of  13 variables:
 $ HhID           : chr  "010100102" "010100102" "010100102" "010100102" ...
 $ SerialNr       : chr  "0000302" "0000302" "0000302" "0000302" ...
 $ VillageID      : chr  "0101001" "0101001" "0101001" "0101001" ...
 $ DistrictID     : chr  "0101" "0101" "0101" "0101" ...
 $ Province       : chr  "01" "01" "01" "01" ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ Hhweight       : num  174 174 174 174 174 174 174 174 174 174 ...
 $ DurCode        : num  1 5 8 12 13 14 22 25 26 30 ...
 $ P8Q1a          : num  NA 0 0 0 0 NA 0 0 0 NA ...
 $ P8Q1b          : num  1 4 1 1 2 1 2 6 1 1 ...
 $ P8Q2           : num  84000000 18480000 600000 100000 10000 ...
 $ P8Oth          : num  NA NA NA NA NA NA NA NA NA NA ...
> DUR<-df


### Housing ###
```

☐ **The following variables should be converted as character, and the rests as numeric.**

```
> cha.var<-c("SerialNr","HhID","VillageID","Province","DistrictID",
+ "PersID","P3Q4Other","P3Q12Other","IncomeOth",
+ "P9Q1Oth","P9Q3Oth","P9Q4Oth","P9Q8Oth","P9Q10Oth","P9Q12Oth","P9Q13Oth",
+ "P9Q14Oth","P9Q14Oth","P9Q15Oth")
> df<-Housing
> for(j in 1:ncol(df)){
+ if(is.element(colnames(df)[j],cha.var)){
+    df[,j]<-as.character(df[,j])
+ }else if(is.factor(df[,j])){
+    df[,j]<-as.numeric(as.character(df[,j]))
+ }
+ }

> str(df)
```

```
'data.frame':   8296 obs. of  37 variables:
 $ SerialNr       : chr  "0000302" "0000300" "0000289" "0000291" ...
 $ HhID           : chr  "010100102" "010100103" "010100104" "010100105" ...
 $ VillageID      : chr  "0101001" "0101001" "0101001" "0101001" ...
 $ Province       : chr  "01" "01" "01" "01" ...
 $ DistrictID     : chr  "0101" "0101" "0101" "0101" ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhnumber       : num  2 3 4 5 6 8 10 11 16 17 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ P9Q1           : num  1 1 1 1 1 1 1 1 1 1 ...
 $ P9Q10th        : chr  "           " "           " "           " "           " ...
 $ P9Q2           : num  5600000 4000000 4200000 8400000 8500000 4000000 10000000 8400000
8400000 3360000 ...
 $ P9Q3a          : num  1 4 1 1 1 1 1 1 1 1 ...
 $ P9Q3b          : num  0 0 0 0 0 0 0 4 0 0 ...
 $ P9Q30th        : chr  NA NA NA NA ...
 $ P9Q4           : num  4 3 3 4 3 4 4 3 3 4 ...
 $ P9Q40th        : chr  "                    " "                    " "
" "                    " ...
 $ P9Q5           : num  2 4 2 2 1 2 2 2 2 1 ...
 $ P9Q50th        : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P9Q6a          : num  5 41 36 7 10 10 7 15 9 10 ...
 $ P9Q6b          : num  NA NA NA NA NA NA NA NA NA NA ...
 $ P9Q7           : num  105 81 144 56 54 91 90 64 225 78 ...
 $ P9Q7b          : num  4 3 5 4 3 5 4 4 6 5 ...
 $ P9Q8           : num  6 6 6 6 6 6 6 6 6 6 ...
 $ P9Q80th        : chr  "ュュゥ斡                " "ュュゥ斡ョ□□□          " "ュュ
ゥ斡ョ□□□          " "ゥ斡ョ□□□          " ...
 $ P9Q9           : num  0 0 0 0 0 0 0 15 0 0 ...
 $ P9Q10          : num  6 6 6 6 6 6 6 6 6 6 ...
 $ P9Q100th       : chr  "ュュゥ斡                " "ュュゥ斡ョ□□□          " "ュュ
ゥ斡ョ□□□          " "ゥ斡ョ□□□          " ...
 $ P9Q11          : num  0 0 0 0 0 0 0 15 0 0 ...
 $ P9Q12          : num  2 2 1 1 2 2 2 2 2 2 ...
 $ P9Q120th       : chr  "      " "      " "      " "      " ...
 $ P9Q13          : num  2 1 2 2 2 1 1 2 1 3 ...
 $ P9Q130th       : chr  "           " "           " "           " "           "
" ...
 $ P9Q14          : num  3 3 7 5 5 5 5 5 5 5 ...
 $ P9Q140th       : chr  NA NA NA NA ...
 $ P9Q15          : num  1 1 1 1 1 1 1 1 1 1 ...
 $ P9Q150th       : chr  "                    " "                    " "
" "                    " ...
 $ Hhweight       : num  174 174 174 174 174 ...

> Housing<-df
```

```
### Purchase ###
> cha.var<-c("SerialNr","HhID","VillageID","Province","DistrictID",
+ "PersID","P3Q4Other","P3Q12Other","IncomeOth",
+ "P9Q1Oth","P9Q3Oth","P9Q4Oth","P9Q8Oth","P9Q10Oth","P9Q12Oth","P9Q13Oth",
+ "P9Q14Oth","P9Q14Oth","P9Q15Oth",
+ "ItemB208Oth","ItemB237Oth","ItemB272Oth","ItemB304Oth")
> df<-Purchase1
> for(j in 1:ncol(df)){
+ if(is.element(colnames(df)[j],cha.var)){
+    df[,j]<-as.character(df[,j])
+ }else if(is.factor(df[,j])){
+    df[,j]<-as.numeric(as.character(df[,j]))
+ }
+ }
> str(df)
'data.frame':   12609 obs. of  17 variables:
 $ SerialNr       : chr  "0000300" "0000289" "0000289" "0000289" ...
 $ HhID           : chr  "010100103" "010100104" "010100104" "010100104" ...
 $ VillageID      : chr  "0101001" "0101001" "0101001" "0101001" ...
 $ Province       : chr  "01" "01" "01" "01" ...
 $ DistrictID     : chr  "0101" "0101" "0101" "0101" ...
 $ VillageType    : num  1 1 1 1 1 1 1 1 1 1 ...
 $ Hhnumber       : num  3 4 4 4 4 4 4 5 5 5 ...
 $ Interview_Month: num  8 8 8 8 8 8 8 8 8 8 ...
 $ P14S1          : num  1 1 1 1 1 1 1 1 1 1 ...
 $ ItemB          : num  234 203 218 270 285 298 356 202 203 204 ...
 $ Bought         : num  1 1 1 1 1 1 1 1 1 1 ...
 $ KipB           : num  224000 600000 560000 11200000 2470000 ...
 $        ItemB208Oth                                    :        chr                 "
""                                                                                  ""
"                                                                                    "
"  ...
 $        ItemB237Oth                                    :        chr                 "
""                                                                                  ""
"                                                                                    "
"  ...
 $        ItemB272Oth                                    :        chr                 "
""                                                                                  ""
"                                                                                    "
"  ...
 $        ItemB304Oth                                    :        chr                 "
""                                                                                  ""
"                                                                                    "
"  ...
 $ Hhweight       : num  174 174 174 174 174 ...

> Purchase<-df
```

☐ **Province code of 18 should be converted as 09 or 10 as the next, based on the Region_Rovince_District_Code.xls downloaded from IHSN web site;**

エラー! リンクが正しくありません。

```
> ls()
 [1] "cha.var" "df"      "DIA"     "DIA.old" "DUR"     "EDU"     "EDU.old"
 [8] "HHB"     "INC"     "IND"     "j"
> d<-HHB

> list.files()
[1] "20170907.RData" "distcode.csv"
> distcode<-read.csv("distcode.csv",header=T)
> dim(distcode)
[1] 142   4
> head(distcode)
  District.Code District.Name Province New.Province
1           101   Chanthabuly        1            1
2           102  Sikhottabong        1            1
3           103      Xaysetha        1            1
4           104    Sisattanak        1            1
5           105    Naxaithong        1            1
6           106      Xaythany        1            1
> distcode$DistrictID<-formatC(distcode$District.Code,width=4,flag="0")

> head(distcode)
  District.Code District.Name Province New.Province DistrictID
1           101   Chanthabuly        1            1       0101
2           102  Sikhottabong        1            1       0102
3           103      Xaysetha        1            1       0103
4           104    Sisattanak        1            1       0104
5           105    Naxaithong        1            1       0105
6           106      Xaythany        1            1       0106

> length(unique(d$VillageID))
[1] 519


# For reference;
> unique(subset(d,DistrictID==1801)$VillageID)
[1] "1801022"
> unique(subset(d,DistrictID==1001)$VillageID)
[1] "1001001" "1001012" "1001027" "1001052" "1001070" "1001075"
> unique(subset(d,DistrictID==1802)$VillageID)
[1] "1802020"
> unique(subset(d,DistrictID==0902)$VillageID)
character(0)
> unique(subset(d,DistrictID==1803)$VillageID)
[1] "1803004"
> unique(subset(d,DistrictID==1003)$VillageID)
[1] "1003003" "1003011"
> unique(subset(d,DistrictID==1002)$VillageID)
[1] "1002020" "1002035" "1002052" "1002065" "1002073"
```

- **Generated the variable of New.Province for each data file.**

```
> outfiles<-list(HHB,IND,EDU,INC,DIA,DUR,Housing,Purchase)
> for(j in 1:8){
+ df<-outfiles[[j]]
+ df$New.Province<-df$Province
+ df$New.Province<-ifelse(df$DistrictID==1801,"10",df$New.Province)
+ df$New.Province<-ifelse(df$DistrictID==1802,"09",df$New.Province)
+ df$New.Province<-ifelse(df$DistrictID==1803,"10",df$New.Province)
+ outfiles[[j]]<-df
+ }

> unique(outfiles[[1]]$New.Province)
 [1] "01" "02" "03" "04" "05" "06" "07" "08" "09" "10" "11" "12" "13" "14" "15" "16" "17"
> unique(outfiles[[2]]$New.Province)
 [1] "01" "02" "03" "04" "05" "06" "07" "08" "09" "10" "11" "12" "13" "14" "15" "16" "17"
> unique(outfiles[[3]]$New.Province)
 [1] "01" "02" "03" "04" "05" "06" "07" "08" "09" "10" "11" "12" "13" "14" "15" "16" "17"
> unique(outfiles[[4]]$New.Province)
 [1] "01" "02" "03" "04" "05" "06" "07" "08" "09" "10" "11" "12" "13" "14" "15" "16" "17"
> unique(outfiles[[5]]$New.Province)
 [1] "01" "02" "03" "04" "05" "06" "07" "08" "09" "10" "11" "12" "13" "14" "15" "16" "17"
> unique(outfiles[[6]]$New.Province)
 [1] "01" "02" "03" "04" "05" "06" "07" "08" "09" "10" "11" "12" "13" "14" "15" "16" "17"


# Number of sample households by new province code
> df<-outfiles[[1]]
> addmargins(table(df$New.Province))
  01   02   03   04   05   06   07   08   09   10   11   12   13   14   15   16   17  Sum
 768  384  368  352  384  544  544  560  400  608  368  544  768  569  271  576  288 8296

# Weighted number of households by new province code (in thousands)
> t<-tapply(df$Hhweight,df$New.Province,sum)/1000
> province.names<-c("1 Vientiane M","2 Phongsaly","3 Luangnamtha",
+ "4 Oudumxay","5 Bokeo","6 Luangprabang","7 Huaphanh",
+ "8 Xayabury","9 Xiengkhuang","10 Vientiane","11 Borikhamxay",
+ "12 Khammuane","13 Savannakhet","14 Saravane","15 Sekong",
+ "16 Champasack","17 Attapeu")
> names(t)<-province.names
> round(addmargins(t))
 1 Vientiane M    2 Phongsaly  3 Luangnamtha     4 Oudumxay        5 Bokeo 6 Luangprabang
           125             29             28             44             27             69
    7 Huaphanh     8 Xayabury 9 Xiengkhuang   10 Vientiane 11 Borikhamxay   12 Khammuane
            44             64             39             77             40             63
13 Savannakhet    14 Saravane      15 Sekong  16 Champasack     17 Attapeu            Sum
           134             58             14            109             20            985
```

- The above is consistent with the Table 2.1 in the survey report.

5.2. Summary table of each data file

- Summary table of each variables in each data file

```
# Confirmed number of rows and columns of each file
# Confirmed variables of each file
# Displayed summary statistics of all files
> file.list<-list(HHB,IND,EDU,INC,DIA,DUR)
> file.names<-c("HHB","IND","EDU","INC","DIA","DUR")
> for(j in 1:6){
+ cat(c("¥n¥n#####",file.names[j],"#####¥n"))
+ cat(c("> dim(",file.names[j],")¥n"))
+ print(dim(file.list[[j]]))
+ cat(c("¥n> summary(",file.names[j],")¥n"))
+ print(summary(file.list[[j]]))
+ }


##### HHB #####
> dim( HHB )
[1] 8296   33

> summary( HHB )
   SerialNr            HhID            VillageID          Province
 Length:8296        Length:8296        Length:8296        Length:8296
 Class :character   Class :character   Class :character   Class :character
 Mode  :character   Mode  :character   Mode  :character   Mode  :character



  DistrictID         VillageType       Hhnumber      Interview_Month
 Length:8296        Min.   :1.000   Min.   : 1.00   Min.   : 1.000
 Class :character   1st Qu.:2.000   1st Qu.: 7.00   1st Qu.: 3.750
 Mode  :character   Median :2.000   Median :16.00   Median : 6.000
                    Mean   :1.882   Mean   :13.68   Mean   : 6.473
                    3rd Qu.:2.000   3rd Qu.:20.00   3rd Qu.: 9.000
                    Max.   :3.000   Max.   :31.00   Max.   :12.000

      P8           P10Q1a_1        P10Q1a_2        P10Q1a_3
 Min.   :1.000   Min.   :1.000   Min.   :1.000   Min.   :1.000
 1st Qu.:1.000   1st Qu.:2.000   1st Qu.:2.000   1st Qu.:2.000
 Median :1.000   Median :2.000   Median :2.000   Median :2.000
 Mean   :1.002   Mean   :1.922   Mean   :1.991   Mean   :1.995
 3rd Qu.:1.000   3rd Qu.:2.000   3rd Qu.:2.000   3rd Qu.:2.000
 Max.   :2.000   Max.   :2.000   Max.   :2.000   Max.   :2.000

   P11Q1S1         P12S1Q1         P12S3Dry       P12S3Wet       P12S5Q1
 Min.   :1.000   Min.   :1.000   Min.   :1      Min.   :2      Min.   :1.000
 1st Qu.:2.000   1st Qu.:1.000   1st Qu.:1      1st Qu.:2      1st Qu.:1.000
 Median :2.000   Median :1.000   Median :1      Median :2      Median :1.000
 Mean   :1.757   Mean   :1.152   Mean   :1      Mean   :2      Mean   :1.282
 3rd Qu.:2.000   3rd Qu.:1.000   3rd Qu.:1      3rd Qu.:2      3rd Qu.:2.000
 Max.   :2.000   Max.   :2.000   Max.   :1      Max.   :2      Max.   :2.000
```

```
                                NA's   :7083   NA's   :1480
   P12S6Q1         P12S7Q1         P12S7Q2         P12S8Q1
 Min.   :1.000   Min.   :1.000   Min.   :1.000   Min.   :1.000
 1st Qu.:1.000   1st Qu.:2.000   1st Qu.:2.000   1st Qu.:1.000
 Median :1.000   Median :2.000   Median :2.000   Median :1.000
 Mean   :1.233   Mean   :1.761   Mean   :1.906   Mean   :1.231
 3rd Qu.:1.000   3rd Qu.:2.000   3rd Qu.:2.000   3rd Qu.:1.000
 Max.   :2.000   Max.   :2.000   Max.   :2.000   Max.   :2.000

    P14S1           P14S2           P14S3           P14S4
 Min.   :1.000   Min.   :1.000   Min.   :1.000   Min.   :1.000
 1st Qu.:1.000   1st Qu.:2.000   1st Qu.:2.000   1st Qu.:2.000
 Median :1.000   Median :2.000   Median :2.000   Median :2.000
 Mean   :1.384   Mean   :1.861   Mean   :1.991   Mean   :1.998
 3rd Qu.:2.000   3rd Qu.:2.000   3rd Qu.:2.000   3rd Qu.:2.000
 Max.   :2.000   Max.   :2.000   Max.   :2.000   Max.   :2.000

    P14S5           P15          P16S1Q1         P16S2Q1
 Min.   :1.000   Min.   :1.00   Min.   :1.000   Min.   :1.000
 1st Qu.:2.000   1st Qu.:1.00   1st Qu.:2.000   1st Qu.:2.000
 Median :2.000   Median :2.00   Median :2.000   Median :2.000
 Mean   :1.997   Mean   :1.69   Mean   :1.787   Mean   :1.909
 3rd Qu.:2.000   3rd Qu.:2.00   3rd Qu.:2.000   3rd Qu.:2.000
 Max.   :2.000   Max.   :2.00   Max.   :2.000   Max.   :2.000

     Male           Female           Total           Hhweight
 Min.   : 0.000   Min.   : 0.000   Min.   : 1.000   Min.   : 11.44
 1st Qu.: 2.000   1st Qu.: 2.000   1st Qu.: 4.000   1st Qu.: 75.06
 Median : 3.000   Median : 3.000   Median : 5.000   Median :103.98
 Mean   : 2.866   Mean   : 2.922   Mean   : 5.789   Mean   :118.68
 3rd Qu.: 4.000   3rd Qu.: 4.000   3rd Qu.: 7.000   3rd Qu.:148.03
 Max.   :12.000   Max.   :14.000   Max.   :26.000   Max.   :595.15



##### IND #####
> dim( IND )
[1] 48021    19

> summary( IND )
    SerialNr          HhID          VillageID        Province
 0008437:   26   150102003:   26   1501020:  189   13     : 4491
 0008381:   21   150303601:   21   0801112:  175   01     : 3996
 0009891:   21   070100408:   20   1503036:  161   07     : 3875
 0003561:   20   150102005:   20   0706088:  157   14     : 3404
 0008447:   20   150102006:   20   1501018:  150   16     : 3170
 0008448:   20   150102008:   20   0703069:  149   06     : 3128
 (Other):47893   (Other)  :47894   (Other):47040   (Other):25957
   DistrictID     VillageType       Hhnumber     Interview_Month
 1401   : 1106   Min.   :1.000   20     : 2961   Min.   : 1.000
 0106   :  850   1st Qu.:2.000   17     : 2895   1st Qu.: 3.000
 0901   :  803   Median :2.000   16     : 2892   Median : 6.000
 1501   :  793   Mean   :1.909   21     : 2875   Mean   : 6.443
 0706   :  787   3rd Qu.:2.000   18     : 2857   3rd Qu.: 9.000
 0501   :  775   Max.   :3.000   22     : 2832   Max.   :12.000
 (Other):42907                   (Other):30709
```

```
        PersID           PCode           P1Q2            P1Q3
 01010010201:     1   01      :8296   Min.    :1.000   Min.    :1.000
 01010010202:     1   02      :8265   1st Qu.:2.000   1st Qu.:1.000
 01010010203:     1   03      :8020   Median :4.000   Median :2.000
 01010010204:     1   04      :7256   Mean    :3.549   Mean    :1.505
 01010010205:     1   05      :5773   3rd Qu.:4.000   3rd Qu.:2.000
 01010010206:     1   06      :4051   Max.    :9.000   Max.    :2.000
 (Other)     :48015   (Other):6360
     P1Q4a            P1Q4b            P1Q4c           P1Q5
 Min.    : 1.00   Min.    : 1.000   Min.    :1898   Min.    :  0.00
 1st Qu.: 5.00   1st Qu.: 3.000   1st Qu.:1968   1st Qu.: 10.00
 Median :10.00   Median : 6.000   Median :1987   Median : 20.00
 Mean    :13.37   Mean    : 7.884   Mean    :1983   Mean    : 25.32
 3rd Qu.:17.00   3rd Qu.: 9.000   3rd Qu.:1997   3rd Qu.: 39.00
 Max.    :99.00   Max.    :99.000   Max.    :9999   Max.    :999.00

      P1Q6           P1Q7          Hhweight
 Min.    :1.00   Min.    : 1.00   Min.    : 11.44
 1st Qu.:1.00   1st Qu.: 1.00   1st Qu.: 72.84
 Median :1.00   Median : 2.00   Median :102.13
 Mean    :1.53   Mean    :11.98   Mean    :116.76
 3rd Qu.:2.00   3rd Qu.:19.00   3rd Qu.:145.23
 Max.    :4.00   Max.    :50.00   Max.    :595.14



##### EDU #####
> dim( EDU )
[1] 41455    53

> summary( EDU )
   SerialNr            HhID            VillageID           Province
 Length:41455       Length:41455       Length:41455       Length:41455
 Class :character   Class :character   Class :character   Class :character
 Mode  :character   Mode  :character   Mode  :character   Mode  :character



  DistrictID         VillageType       Hhnumber      Interview_Month
 Length:41455       Min.    :1.00   Min.    : 1.00   Min.    : 1.000
 Class :character   1st Qu.:2.00   1st Qu.: 7.00   1st Qu.: 3.500
 Mode  :character   Median :2.00   Median :15.00   Median : 6.000
                    Mean    :1.89   Mean    :13.37   Mean    : 6.459
                    3rd Qu.:2.00   3rd Qu.:19.00   3rd Qu.: 9.000
                    Max.    :3.00   Max.    :31.00   Max.    :12.000

    PersID             PCode             P3Q1            P3Q2
 Length:41455       Min.    : 1.000   Min.    :1.000   Min.    :1.000
 Class :character   1st Qu.: 2.000   1st Qu.:1.000   1st Qu.:1.000
 Mode  :character   Median : 3.000   Median :1.000   Median :1.000
                    Mean    : 3.411   Mean    :1.582   Mean    :1.591
                    3rd Qu.: 5.000   3rd Qu.:2.000   3rd Qu.:2.000
                    Max.    :22.000   Max.    :3.000   Max.    :3.000

      P3Q3           P3Q4         P3Q4Other             P3Q5
```

```
Min.    :1.00   Min.    :1.00    Length:41455       Min.    :0.000
1st Qu.:1.00   1st Qu.:3.00    Class :character   1st Qu.:2.000
Median :1.00   Median :4.00    Mode  :character   Median :2.000
Mean   :1.21   Mean   :4.13                       Mean   :1.922
3rd Qu.:1.00   3rd Qu.:5.00                       3rd Qu.:2.000
Max.   :2.00   Max.   :9.00                       Max.   :2.000
               NA's   :32791                      NA's   :8707
     P3Q6            P3Q7a            P3Q7b            P3Q8
Min.    :1.000   Min.    :0.000   Min.    :0.000   Min.    :1.000
1st Qu.:1.000   1st Qu.:1.000   1st Qu.:1.000   1st Qu.:1.000
Median :3.000   Median :1.000   Median :2.000   Median :1.000
Mean   :2.343   Mean   :1.546   Mean   :2.407   Mean   :1.024
3rd Qu.:3.000   3rd Qu.:2.000   3rd Qu.:3.000   3rd Qu.:1.000
Max.   :3.000   Max.   :5.000   Max.   :9.000   Max.   :9.000
NA's   :8699    NA's   :29196   NA's   :29245   NA's   :29544
  P3Q8Other          P3Q9          P3Q9Other          P3Q10
Min.    :1.00    Min.    : 1.00   Min.    : NA     Min.    :1911
1st Qu.:1.00    1st Qu.: 2.00   1st Qu.: NA     1st Qu.:1977
Median :1.00    Median : 4.00   Median : NA     Median :1993
Mean   :1.11    Mean   : 4.25   Mean   :NaN     Mean   :2032
3rd Qu.:1.00    3rd Qu.: 6.00   3rd Qu.: NA     3rd Qu.:2001
Max.   :2.00    Max.   :10.00   Max.   : NA     Max.   :9999
NA's   :41446   NA's   :41355   NA's   :41455   NA's   :8805
    P3Q11a          P3Q11b          P3Q12        P3Q12Other
Min.    :0.000   Min.    :0.000   Min.    : 1.00   Length:41455
1st Qu.:1.000   1st Qu.:2.000   1st Qu.: 2.00   Class :character
Median :1.000   Median :3.000   Median : 3.00   Mode  :character
Mean   :1.567   Mean   :2.962   Mean   : 3.47
3rd Qu.:2.000   3rd Qu.:4.000   3rd Qu.: 3.00
Max.   :9.000   Max.   :9.000   Max.   :99.00
NA's   :8828    NA's   :9870    NA's   :38169
    P3Q14a             P3Q14b             P3Q14c             P3Q14d
Min.    :       0   Min.    :      0   Min.    :      0   Min.    :      0
1st Qu.:       0   1st Qu.:      0   1st Qu.:      0   1st Qu.:      0
Median :       0   Median :      0   Median :      0   Median :      0
Mean   :   19497   Mean   :   2842   Mean   :  37026   Mean   :   6368
3rd Qu.:       0   3rd Qu.:      0   3rd Qu.:  32000   3rd Qu.:      0
Max.   :20160000   Max.   :2000000   Max.   :5000000   Max.   :5000000
NA's   :20         NA's   :24        NA's   :3         NA's   :31
    P3Q14e             P3Q14f             P3Q14g             P3Q14i
Min.    :      0   Min.    :       0   Min.    :       0   Min.    :      0
1st Qu.:      0   1st Qu.:       0   1st Qu.:       0   1st Qu.:      0
Median :      0   Median :       0   Median :       0   Median :      0
Mean   :  12049   Mean   :   55326   Mean   :   23323   Mean   :   1917
3rd Qu.:  10000   3rd Qu.:       0   3rd Qu.:       0   3rd Qu.:      0
Max.   :4100000   Max.   :75940000   Max.   :16000000   Max.   :4147000
NA's   :4         NA's   :16         NA's   :11         NA's   :295
    P3Q14h             P3Q15            P3Q16              P3Q17
Min.    :       0   Min.    :0.000   Min.    :       0   Min.    : 0.0000
1st Qu.:       0   1st Qu.:2.000   1st Qu.:   50000   1st Qu.: 0.0000
Median :       0   Median :2.000   Median :  100000   Median : 0.0000
Mean   :  158175   Mean   :1.935   Mean   :  472369   Mean   : 0.5583
3rd Qu.:   82000   3rd Qu.:2.000   3rd Qu.:  300000   3rd Qu.: 0.0000
Max.   :78840000   Max.   :2.000   Max.   :13000000   Max.   :80.0000
NA's   :9          NA's   :29269   NA's   :40736      NA's   :7
    P3Q18a           P3Q18b           P3Q19         P3Q19Other
```

```
 Min.    : 0.00   Min.    : 0.00   Min.    :1.000   Min.    :1.0
 1st Qu.: 0.00   1st Qu.: 5.00   1st Qu.:1.000   1st Qu.:1.0
 Median : 0.00   Median :10.00   Median :1.000   Median :1.5
 Mean   : 0.21   Mean   :11.99   Mean   :1.479   Mean   :1.5
 3rd Qu.: 0.00   3rd Qu.:15.00   3rd Qu.:2.000   3rd Qu.:2.0
 Max.    :40.00   Max.    :52.00   Max.    :9.000   Max.    :2.0
 NA's    :33257   NA's    :29421   NA's    :29262   NA's    :41451
     p3Q20           P3Q21           P3Q22           P3Q23
 Min.    :0.000   Min.    :0.000   Min.    : 0.000   Min.    :0.000
 1st Qu.:1.000   1st Qu.:1.000   1st Qu.: 1.000   1st Qu.:1.000
 Median :2.000   Median :2.000   Median : 2.000   Median :1.000
 Mean   :1.657   Mean   :1.523   Mean   : 2.601   Mean   :1.253
 3rd Qu.:2.000   3rd Qu.:2.000   3rd Qu.: 3.250   3rd Qu.:2.000
 Max.    :9.000   Max.    :9.000   Max.    :85.000   Max.    :5.000
 NA's    :29203   NA's    :29259   NA's    :29491   NA's    :29302
     P3Q24           P3Q25           P3Q26          P3Q26Other
 Min.    :0.000   Min.    :0.0     Min.    :1.00   Min.    : 9
 1st Qu.:0.000   1st Qu.:5.0     1st Qu.:3.00   1st Qu.: 9
 Median :0.000   Median :5.0     Median :6.00   Median :54
 Mean   :1.117   Mean   :4.8     Mean   :4.59   Mean   :54
 3rd Qu.:0.000   3rd Qu.:5.0     3rd Qu.:6.00   3rd Qu.:99
 Max.    :7.000   Max.    :7.0     Max.    :9.00   Max.    :99
 NA's    :2848   NA's    :32596   NA's    :41026   NA's    :41451
    Hhweight
 Min.    : 11.44
 1st Qu.: 73.82
 Median :102.68
 Mean   :117.91
 3rd Qu.:146.82
 Max.    :595.14


##### INC #####
> dim( INC )
[1] 4126   28

> summary( INC )
    PersID              HhID             SerialNr          VillageID
 Length:4126        Length:4126        Length:4126        Length:4126
 Class :character   Class :character   Class :character   Class :character
 Mode  :character   Mode  :character   Mode  :character   Mode  :character



  DistrictID          Province          VillageType     Interview_Month
 Length:4126        Length:4126        Min.    :1.000   Min.    : 1.000
 Class :character   Class :character   1st Qu.:1.000   1st Qu.: 4.000
 Mode  :character   Mode  :character   Median :1.000   Median : 7.000
                                       Mean   :1.526   Mean   : 6.768
                                       3rd Qu.:2.000   3rd Qu.: 9.000
                                       Max.    :3.000   Max.    :12.000

      P1Q2            P1Q3            P1Q5            P1Q6
 Min.    :1.000   Min.    :1.000   Min.    : 0.00   Min.    :1.000
```

```
 1st Qu.:1.000   1st Qu.:1.000   1st Qu.:27.00   1st Qu.:2.000
 Median :2.000   Median :1.000   Median :39.00   Median :2.000
 Mean   :2.353   Mean   :1.341   Mean   :38.98   Mean   :1.874
 3rd Qu.:4.000   3rd Qu.:2.000   3rd Qu.:50.00   3rd Qu.:2.000
 Max.   :9.000   Max.   :2.000   Max.   :92.00   Max.   :4.000

      P1Q7           Hhweight         Incom800           Incom801
 Min.   : 1.000   Min.   : 12.76   Min.   :     800   Min.   :  20000
 1st Qu.: 1.000   1st Qu.: 86.78   1st Qu.:  300000   1st Qu.: 300000
 Median : 1.000   Median :124.02   Median :  500000   Median : 500000
 Mean   : 4.702   Mean   :142.84   Mean   :  696501   Mean   : 739806
 3rd Qu.: 1.000   3rd Qu.:165.89   3rd Qu.:  750000   3rd Qu.: 800000
 Max.   :50.000   Max.   :595.14   Max.   :30000000   Max.   :3000000
                                   NA's   :966        NA's   :4090
    Incom802           Incom803           Incom804           Incom805
 Min.   :   30000   Min.   :   30000   Min.   :    5000   Min.   :   70000
 1st Qu.:  100000   1st Qu.:  166667   1st Qu.:  300000   1st Qu.:  375000
 Median :  200000   Median :  420000   Median :  690500   Median : 1000000
 Mean   :  764637   Mean   : 1271848   Mean   : 1275161   Mean   : 2572645
 3rd Qu.:  500000   3rd Qu.: 1260000   3rd Qu.: 1135000   3rd Qu.: 3225000
 Max.   :15000000   Max.   :10500000   Max.   :14000000   Max.   :20000000
 NA's   :4029       NA's   :4049       NA's   :4070       NA's   :4095
    Incom806           Incom807           Incom808           Incom809
 Min.   :   30000   Min.   :  15800   Min.   :   10000   Min.   :1.40e+04
 1st Qu.:  462500   1st Qu.: 365000   1st Qu.:  225500   1st Qu.:9.00e+05
 Median :  775000   Median : 500000   Median :  500000   Median :1.58e+06
 Mean   : 4915556   Mean   : 702088   Mean   : 1037069   Mean   :3.13e+06
 3rd Qu.: 1825000   3rd Qu.: 710500   3rd Qu.: 1000000   3rd Qu.:2.88e+06
 Max.   :56000000   Max.   :4700000   Max.   :10000000   Max.   :1.10e+08
 NA's   :4108       NA's   :4017      NA's   :3776       NA's   :3714
    Incom810           Incom811           Incom812          IncomeOth
 Min.   :   9000   Min.   :   15000   Min.   :   38000   Length:4126
 1st Qu.: 120000   1st Qu.:  247500   1st Qu.:  256500   Class :character
 Median : 300000   Median :  755000   Median :  600000   Mode  :character
 Mean   : 540811   Mean   : 2103781   Mean   : 1378298
 3rd Qu.: 503000   3rd Qu.: 2410000   3rd Qu.: 1525000
 Max.   :2800000   Max.   :13000000   Max.   :11960000
 NA's   :4083      NA's   :4094       NA's   :4079


##### DIA #####
> dim( DIA )
[1] 1358317      19

> summary( DIA )
   SerialNr            HhID            VillageID          Province
 Length:1358317     Length:1358317     Length:1358317     Length:1358317
 Class :character   Class :character   Class :character   Class :character
 Mode  :character   Mode  :character   Mode  :character   Mode  :character



  DistrictID         VillageType       Hhnumber      Interview_Month
 Length:1358317     Min.   :1.000   Min.   : 1.00   Min.   : 1.000
 Class :character   1st Qu.:1.000   1st Qu.: 7.00   1st Qu.: 4.000
```

```
 Mode  :character   Median :2.000   Median :16.00   Median : 7.000
                    Mean   :1.839   Mean   :13.58   Mean   : 6.612
                    3rd Qu.:2.000   3rd Qu.:20.00   3rd Qu.:10.000
                    Max.   :3.000   Max.   :31.00   Max.   :12.000

    DiaryID             Page          Serial_1           Unit
 Min.   :      1   Min.   : 3.00   Min.   :      1   Min.   :  1.000
 1st Qu.: 339761   1st Qu.: 6.00   1st Qu.:   2479   1st Qu.:  1.000
 Median : 679482   Median :10.00   Median :   4861   Median :  4.000
 Mean   : 679464   Mean   :10.42   Mean   :   5599   Mean   :  5.851
 3rd Qu.:1019161   3rd Qu.:14.00   3rd Qu.:   7503   3rd Qu.:  9.000
 Max.   :1358869   Max.   :24.00   Max.   :8006223   Max.   :118.000
                                   NA's   :93        NA's   :6
    Quantity            Kip                Kind          Produced
 Min.   :   0.000   Min.   :1.00e+00   Min.   :1.000   Min.   :1.000
 1st Qu.:   1.000   1st Qu.:2.00e+03   1st Qu.:1.000   1st Qu.:1.000
 Median :   1.000   Median :5.00e+03   Median :2.000   Median :1.000
 Mean   :   3.188   Mean   :3.41e+04   Mean   :1.704   Mean   :1.003
 3rd Qu.:   3.000   3rd Qu.:1.20e+04   3rd Qu.:2.000   3rd Qu.:1.000
 Max.   :2700.000   Max.   :5.00e+08   Max.   :4.000   Max.   :3.000
 NA's   :620
    Purpose          Item          Hhweight
 Min.   :1.00   Min.   :  1.0   Min.   : 11.44
 1st Qu.:2.00   1st Qu.:124.0   1st Qu.: 75.94
 Median :2.00   Median :135.0   Median :109.52
 Mean   :2.01   Mean   :185.5   Mean   :124.21
 3rd Qu.:2.00   3rd Qu.:199.0   3rd Qu.:153.52
 Max.   :3.00   Max.   :812.0   Max.   :595.14



##### DUR #####
> dim( DUR )
[1] 83753    13

> summary( DUR )
        HhID          SerialNr       VillageID       DistrictID
 010501103:   24   0009891:   30   0105013:  282   0106   : 2293
 010200723:   23   0004681:   25   0701001:  267   0901   : 1672
 010204814:   23   0000271:   24   0103030:  265   0101   : 1610
 010205320:   23   0000309:   23   0101013:  262   1301   : 1602
 010100713:   22   0000715:   23   0102007:  254   0501   : 1598
 010101319:   22   0000728:   23   0106061:  253   0103   : 1595
 (Other)  :83616   (Other):83605   (Other):82170   (Other):73383
    Province      VillageType    Interview_Month    Hhweight
 01      :10782   Min.   :1.000   Min.   : 1.00   Min.   : 11.44
 13      : 8694   1st Qu.:1.000   1st Qu.: 4.00   1st Qu.: 78.60
 16      : 6461   Median :2.000   Median : 7.00   Median :111.47
 10      : 6435   Mean   :1.791   Mean   : 6.55   Mean   :125.71
 08      : 6009   3rd Qu.:2.000   3rd Qu.: 9.00   3rd Qu.:155.13
 12      : 5550   Max.   :3.000   Max.   :12.00   Max.   :595.14
 (Other):39822
    DurCode          P8Q1a           P8Q1b             P8Q2
 Min.   : 1.00   Min.   : 0.00   Min.   :  1.00   Min.   :1.000e+03
 1st Qu.: 9.00   1st Qu.: 0.00   1st Qu.:  1.00   1st Qu.:5.000e+04
 Median :17.00   Median : 0.00   Median :  1.00   Median :2.100e+05
```

```
 Mean   :16.04   Mean   : 0.01   Mean   :  1.77   Mean   :1.944e+07
 3rd Qu.:22.00   3rd Qu.: 0.00   3rd Qu.:  2.00   3rd Qu.:1.296e+06
 Max.   :32.00   Max.   :30.00   Max.   :220.00   Max.   :6.498e+11
                 NA's   :39243   NA's   :5980
    P8Oth
 Min.   :32
 1st Qu.:32
 Median :32
 Mean   :32
 3rd Qu.:32
 Max.   :32
 NA's   :83752



### Housing ###
> dim(Housing)
[1] 8296   38
> summary(Housing)
   SerialNr            HhID            VillageID           Province
 Length:8296        Length:8296        Length:8296        Length:8296
 Class :character   Class :character   Class :character   Class :character
 Mode  :character   Mode  :character   Mode  :character   Mode  :character



  DistrictID         VillageType       Hhnumber      Interview_Month
 Length:8296        Min.   :1.000   Min.   : 1.00   Min.   : 1.000
 Class :character   1st Qu.:2.000   1st Qu.: 7.00   1st Qu.: 3.750
 Mode  :character   Median :2.000   Median :16.00   Median : 6.000
                    Mean   :1.882   Mean   :13.68   Mean   : 6.473
                    3rd Qu.:2.000   3rd Qu.:20.00   3rd Qu.: 9.000
                    Max.   :3.000   Max.   :31.00   Max.   :12.000

      P9Q1          P9Q1Oth              P9Q2              P9Q3a
 Min.   :1.000   Length:8296        Min.   :       9   Min.   :0.000
 1st Qu.:1.000   Class :character   1st Qu.:  300000   1st Qu.:3.000
 Median :1.000   Mode  :character   Median :  720000   Median :4.000
 Mean   :1.018                      Mean   : 2012094   Mean   :3.542
 3rd Qu.:1.000                      3rd Qu.: 1800000   3rd Qu.:5.000
 Max.   :4.000                      Max.   :67000000   Max.   :8.000
                                                       NA's   :181
     P9Q3b          P9Q3Oth              P9Q4          P9Q4Oth
 Min.   :0.000   Length:8296        Min.   :1.000   Length:8296
 1st Qu.:0.000   Class :character   1st Qu.:3.000   Class :character
 Median :4.000   Mode  :character   Median :3.000   Mode  :character
 Mean   :2.398                      Mean   :3.576
 3rd Qu.:4.000                      3rd Qu.:4.000
 Max.   :8.000                      Max.   :7.000
 NA's   :4799
      P9Q5          P9Q5Oth          P9Q6a             P9Q6b
 Min.   :1.000   Min.   :4      Min.   :  0.00   Min.   : 0.000
 1st Qu.:2.000   1st Qu.:4      1st Qu.:  4.00   1st Qu.: 0.000
 Median :4.000   Median :4      Median :  7.00   Median : 2.000
 Mean   :3.737   Mean   :4      Mean   :  9.51   Mean   : 3.376
```

```
 3rd Qu.:4.000   3rd Qu.:4      3rd Qu.: 12.00   3rd Qu.: 5.000
 Max.   :7.000   Max.   :4      Max.   :150.00   Max.   :36.000
                 NA's   :8295                    NA's   :6383
     P9Q7             P9Q7b            P9Q8         P9Q8Oth
 Min.   :   4.00   Min.   : 0.000   Min.   :1.000   Length:8296
 1st Qu.:  35.00   1st Qu.: 2.000   1st Qu.:2.000   Class :character
 Median :  49.00   Median : 2.000   Median :2.000   Mode  :character
 Mean   :  63.99   Mean   : 2.429   Mean   :3.008
 3rd Qu.:  72.00   3rd Qu.: 3.000   3rd Qu.:4.000
 Max.   :6800.00   Max.   :12.000   Max.   :6.000

     P9Q9             P9Q10          P9Q10Oth            P9Q11
 Min.   :   0.00   Min.   : 1.000   Length:8296        Min.   :    0.00
 1st Qu.:   0.00   1st Qu.: 2.000   Class :character   1st Qu.:    0.00
 Median :   8.00   Median : 2.000   Mode  :character   Median :   15.00
 Mean   :  59.99   Mean   : 2.935                      Mean   :   85.48
 3rd Qu.:  50.00   3rd Qu.: 4.000                      3rd Qu.:   60.00
 Max.   :8000.00   Max.   :60.000                      Max.   :10000.00
 NA's   :2         NA's   :3
    P9Q12         P9Q12Oth            P9Q13        P9Q13Oth
 Min.   :0.000   Length:8296        Min.   :0.00   Length:8296
 1st Qu.:2.000   Class :character   1st Qu.:1.00   Class :character
 Median :2.000   Mode  :character   Median :2.00   Mode  :character
 Mean   :3.227                      Mean   :1.68
 3rd Qu.:5.000                      3rd Qu.:2.00
 Max.   :5.000                      Max.   :5.00
 NA's   :9                          NA's   :6
    P9Q14         P9Q14Oth            P9Q15        P9Q15Oth
 Min.   :0.000   Length:8296        Min.   :0.000   Length:8296
 1st Qu.:3.000   Class :character   1st Qu.:1.000   Class :character
 Median :3.000   Mode  :character   Median :1.000   Mode  :character
 Mean   :3.352                      Mean   :2.598
 3rd Qu.:3.000                      3rd Qu.:4.000
 Max.   :8.000                      Max.   :6.000
 NA's   :2                          NA's   :8
   Hhweight      New.Province
 Min.   : 11.44   Length:8296
 1st Qu.: 75.06   Class :character
 Median :103.98   Mode  :character
 Mean   :118.68
 3rd Qu.:148.03
 Max.   :595.15



### Purchase ###
> dim(Purchase)
[1] 12609    18
> summary(Purchase)
   SerialNr            HhID            VillageID          Province
 Length:12609       Length:12609       Length:12609       Length:12609
 Class :character   Class :character   Class :character   Class :character
 Mode  :character   Mode  :character   Mode  :character   Mode  :character
```

```
 DistrictID         VillageType       Hhnumber      Interview_Month
Length:12609       Min.    :1.000   Min.    : 1.00   Min.    : 1.000
Class :character   1st Qu.:1.000   1st Qu.: 7.00   1st Qu.: 4.000
Mode  :character   Median :2.000   Median :16.00   Median : 7.000
                   Mean   :1.781   Mean   :13.51   Mean   : 6.534
                   3rd Qu.:2.000   3rd Qu.:20.00   3rd Qu.: 9.000
                   Max.   :3.000   Max.   :31.00   Max.   :12.000
    P14S1        ItemB          Bought            KipB
Min.   :1   Min.   :201   Min.   :1.000   Min.   :        0
1st Qu.:1   1st Qu.:218   1st Qu.:1.000   1st Qu.:    90000
Median :1   Median :270   Median :1.000   Median :   300000
Mean   :1   Mean   :259   Mean   :1.001   Mean   :  1732785
3rd Qu.:1   3rd Qu.:295   3rd Qu.:1.000   3rd Qu.:  1080000
Max.   :1   Max.   :356   Max.   :2.000   Max.   :796000000
ItemB2080th        ItemB2370th        ItemB2720th        ItemB3040th
Length:12609       Length:12609       Length:12609       Length:12609
Class :character   Class :character   Class :character   Class :character
Mode  :character   Mode  :character   Mode  :character   Mode  :character


   Hhweight      New.Province
Min.   : 11.44   Length:12609
1st Qu.: 76.36   Class :character
Median :109.13   Mode  :character
Mean   :124.34
3rd Qu.:155.13
Max.   :595.15
```

The above results were summarized in the next table.

Table: Organization of original micro data files

R data frame	Original file name	nrow	original ncol	Unit	Questionnaire	Remarks
HHB	HhHouseholds	8,296	33	Household	Household business: summary of VIII, X, XI, XII, XIV, XV and XVI	
IND	HhComposition	48,021	19	Individual	Household Questionnaire/I Household composition	
EDU	HhEducation	41,455	53	Individual	Household Questionnaire/III Education	
INC	HhIncome	4,126	28	Individual	Household Questionnaire/XV Income and transfers	
DIA	HhDiarySheet	1,358,317	19	Household, Transaction	Diary Sheet	
DUR	HhDurables	83,753	13	Household, Durables	Household Questionnaire/ VIII Household possession of durables	
Housing	HhHousing	8296	37	Household	Household Questionnaire/ IX Housing conditions	
Purchase	HhPurchase1	12609	17	Household ItemB	Household Questionnaire/ XIV Households' purchase and selling of durables	

Note:The number of ncol is based on the original data files, excluding the variable of New.Province.

Problems found:

1. The next variables included terms in Lao language and could not be displayed in the console.

EDU$P3Q4Other

EDU$P3Q12Other

INC$IncomeOth

2. In DiarySheet data frame (DIA) when converted from SPSS using parameter “use.value.labels=T”, the variable of Item was a factor variable in R, which has the value of ItemNo as numeric, and the level of ItemDescription. It was not convenient for data processing. Also, when converted from SPSS using parameter “use.value.labels=F”, the variable of Item is composed of item code, which is different from ItemNo

For convenience of usages by other software, the values and the levels of the factor variable were converted to different variables; ItemNo and ItemDescription, **which will be included in DIA.**

```
> df<-data.frame(read.spss("HhDiary Sheet.sav",use.value.labels=T))
> str(df)
'data.frame':   1358317 obs. of  19 variables:
 $ SerialNr       : Factor w/ 8281 levels ".       ","0000001",..: 267 267 267 267 267
 $ HhID           : Factor w/ 8296 levels "010100102","010100103",..: 1 1 1 1 1 1 1 1 1
 :
 $ Item           : Factor w/ 443 levels "Glutinous rice",..: 322 321 11 12 322 284 271  ...
> head(df$Item)
[1] Take away food           Catering, sit-down meals Other
[4] Pork                     Take away food           Mobile phone charges
443 Levels: Glutinous rice Ordinary rice Maize grain Flour Salapau bread ... Other current
tranfers Specify¥x85
> head(as.numeric(df$Item))
[1] 322 321  11  12 322 284
> head(as.character(df$Item))
[1] "Take away food "          "Catering, sit-down meals" "Other"
[4] "Pork"                     "Take away food "          "Mobile phone charges"
```

- The values of the vector “Item”

```
> ItemNo<-as.numeric(df$Item)
> head(ItemNo)
[1] 322 321  11  12 322 284
> length(ItemNo)
[1] 1358317
```

- The levels of the vector “Item”

```
> ItemDescription<-as.character(df$Item)
```

```
> head(ItemDescription)
[1] "Take away food "          "Catering, sit-down meals"
[3] "Other"                    "Pork"
[5] "Take away food "          "Mobile phone charges"
> length(ItemDescription)
[1] 1358317
```

- Appended the variables of ItemNo and ItemDescription to DIA.

```
> DIA$ItemNo<-ItemNo
> DIA$ItemDescription<-ItemDescription

> outfiles[[5]]<-DIA
```

- List of ItemNo and ItemDescription

```
> df<-data.frame(ItemNo,ItemDescription)
> dim(df)
[1] 1358317       2
> df2<-subset(df,!duplicated(df))
> dim(df2)
[1] 443   2
> item.list<-df2[order(df2$ItemNo),]
> dim(item.list)
[1] 443   2
> head(item.list)
     ItemNo ItemDescription
117       1  Glutinous rice
319       2   Ordinary rice
2267      3     Maize grain
6422      4           Flour
3728      5   Salapau bread
344       6     Other bread
> tail(item.list)
       ItemNo                       ItemDescription
12260     438           Pension and life insurance
2493      439   Remittance, gifts in cash for Laos
17861     440 Remittance, gifts in cash for abroad
124984    441   Remittance, gifts in kind for Laos
144147    442 Remittance, gifts in kind for abroad
10625     443   Other current tranfers Specify¥x85
```

5.3.Frequency tables of categorical variables

```
> file.names<-c("HHB","IND","EDU","INC","DIA","DUR")
> file.list<-list(HHB,IND,EDU,INC,DIA,DUR)
> HHBno<-9:29
> INDno<-c(11,12,17,18)
> EDUno<-c(11:14,16,17,20,22,27,38,43,45,46,48,51)
> INCno<-c(9,10,12,13)
> DIAno<-c(12,15:17)
> DURno<-9
> check.list<-list(HHBno,INDno,EDUno,INCno,DIAno,DURno)
>
> for(j in 1:length(file.names)){
+ cat(c("¥n¥n","#### FREQUENCY OF VARIABLES IN", file.names[j],
+ "##################################################"),"¥n¥n")
+ for(k in check.list[[j]]){
+ variable.name<-colnames(file.list[[j]])[k]
+ cat(c("-----",variable.name,"----------------------------------------------------------"))
+ print(table(file.list[[j]][k],useNA="ifany"))
+ }
+ }


 #### FREQUENCY OF VARIABLES IN HHB ##################################################

----- P8 ---------------------------------------------------
   1    2
8282   14
----- P10Q1a_1 ---------------------------------------------------
   1    2
 646 7650
----- P10Q1a_2 ---------------------------------------------------
   1    2
  74 8222
----- P10Q1a_3 ---------------------------------------------------
   1    2
  39 8257
----- P11Q1S1 ---------------------------------------------------
   1    2
2012 6284
----- P12S1Q1 ---------------------------------------------------
   1    2
7037 1259
----- P12S3Dry ---------------------------------------------------
        1
7083 1213
----- P12S3Wet ---------------------------------------------------
        2
1480 6816
----- P12S5Q1 ---------------------------------------------------
   1    2
5954 2342
----- P12S6Q1 ---------------------------------------------------
   1    2
6360 1936
```

```
----- P12S7Q1 -------------------------------------------------------
   1    2
1986 6310
----- P12S7Q2 -------------------------------------------------------
   1    2
 777 7519
----- P12S8Q1 -------------------------------------------------------
   1    2
6379 1917
----- P14S1 ---------------------------------------------------------
   1    2
5113 3183
----- P14S2 ---------------------------------------------------------
   1    2
1150 7146
----- P14S3 ---------------------------------------------------------
   1    2
  73 8223
----- P14S4 ---------------------------------------------------------
   1    2
  18 8278
----- P14S5 ---------------------------------------------------------
   1    2
  21 8275
----- P15 -----------------------------------------------------------
   1    2
2568 5728
----- P16S1Q1 -------------------------------------------------------
   1    2
1767 6529
----- P16S2Q1 -------------------------------------------------------
   1    2
 756 7540


 #### FREQUENCY OF VARIABLES IN IND ################################################

----- P1Q2 ----------------------------------------------------------
    1     2     3     4     5     6     7     8     9
 8296  7714  1650 23488  1962   537   264  4083    27
----- P1Q3 ----------------------------------------------------------
    1     2
23777 24244
----- P1Q6 ----------------------------------------------------------
    1     2     3     4
25791 20402   457  1371
----- P1Q7 ----------------------------------------------------------
    1     2     3     4     5     6     7     8     9    10    11    12    13    14    16
22570  1809  1494  1643   244     8     4   182  6048   270    36   271     3     3   288
   17    18    19    20    21    22    23    24    25    26    27    28    29    30    31
   27   857   620   272   512   801   675    61   101   205   747   277   330   101     5
   32    34    35    37    38    41    42    43    44    46    47    48    49    50
  208     1    80    99     5  1291   716   231     1   113    84  4471     7   250


 #### FREQUENCY OF VARIABLES IN EDU ################################################
```

```
----- P3Q1 ----------------------------------------------------
    1     2     3
26809  5180  9466
----- P3Q2 ----------------------------------------------------
    1     2     3
26549  5319  9587
----- P3Q3 ----------------------------------------------------
    1     2
32761  8694
----- P3Q4 ----------------------------------------------------
    1     2     3     4     5     6     7     8     9  <NA>
  765    65  2764  1801  1640  1028   108   176   317 32791
----- P3Q5 ----------------------------------------------------
    0     1     2  <NA>
    5  2551 30192  8707
----- P3Q6 ----------------------------------------------------
    1     2     3  <NA>
 9250  3011 20495  8699
----- P3Q8 ----------------------------------------------------
    1     2     3     9  <NA>
11668   226    12     5 29544
----- P3Q9 ----------------------------------------------------
    1     2     3     4     5     6     7     8     9    10  <NA>
   22     4     5    28    12     9    14     1     2     3 41355
----- P3Q12 ---------------------------------------------------
    1     2     3     4     5     6     7     8    99  <NA>
  241  1200  1127   510    28    67     8    84    21 38169
----- P3Q15 ---------------------------------------------------
    0     1     2  <NA>
   50   686 11450 29269
----- P3Q19 ---------------------------------------------------
    1     2     3     4     5     6     7     9  <NA>
 8650  1924  1347    47   145    13    50    17 29262
----- p3Q20 ---------------------------------------------------
    0     1     2     3     7     9  <NA>
    7  5670  5112  1460     1     2 29203
----- P3Q21 ---------------------------------------------------
    0     1     2     3     4     5     6     9  <NA>
   94  5666  6420    10     2     1     1     2 29259
----- P3Q23 ---------------------------------------------------
    0     1     2     3     4     5  <NA>
   18  9085  3031     4     5    10 29302
----- P3Q26 ---------------------------------------------------
    1     2     3     4     5     6     9  <NA>
   33    50    36    72     2   231     5 41026


 #### FREQUENCY OF VARIABLES IN INC ##################################################

----- P1Q2 ----------------------------------------------------
   1    2    3    4    5    6    7    8    9
2042  609   54 1074  249   14   12   70    2
----- P1Q3 ----------------------------------------------------
   1    2
2717 1409
```

```
----- P1Q6 ----------------------------------------------------
   1    2    3    4
 886 3020   73  147
----- P1Q7 ----------------------------------------------------
   1    2    3    4    5    6    7    8    9   10   11   12   13   16   17   18   19   20
3130  142  118   53   22    3    1    1  205   44    1    3    1    4    2   11   26    4
  21   22   23   24   25   26   27   28   29   30   32   34   38   41   42   43   47   48
  12   56    4   11   16   25   45   10   23    2    3    1    2   14   24    5    1   74
  49   50
   1   26


 #### FREQUENCY OF VARIABLES IN DIA ###############################################

----- Unit ----------------------------------------------------
     1      2      3      4      5      6      7      8      9     10     11     12     13
600879  36327    708 165032 138849  43256   3370  16266  25437   4325   5314  34917   8584
    14     15     16     17     18     97    118   <NA>
 34292  49489  10802    412 180050      1      1      6
----- Kind ----------------------------------------------------
     1      2      3      4
571847 701284    437  84749
----- Produced ------------------------------------------------
      1       2       3
1354433    3883       1
----- Purpose -------------------------------------------------
      1       2       3
  79438 1186529   92350


 #### FREQUENCY OF VARIABLES IN DUR ################################################

----- DurCode -------------------------------------------------
   1    2    3    4    5    6    7    8    9   10   11   12   13   14   15   16   17   18
7917  269  871  557 4288 3321  105 2644 1218  392   40 2307 7164 7295 2024  337 6706 5216
  19   20   21   22   23   24   25   26   27   28   29   30   31   32
 997 4651  162 4357 4941  696 3372  324 1530  130  163 1773 7425  561
>



#### FREQUENCY OF VARIABLES IN Housing ############################################

> no<-c(9,12,13,17,22,23,26,29,31,33,35)
> for(k in no){
+ variable.name<-colnames(Housing)[k]
+ cat(c("¥n-----",variable.name,"----------------------------------------------------"))
+ print(table(Housing[k],useNA="ifany"))
+ }

----- P9Q1 ----------------------------------------------------
   1    2    3    4
8210   22   61    3

----- P9Q3a ---------------------------------------------------
   0    1    2    3    4    5    6    7    8 <NA>
```

```
  39 1867   27  100 4021 2005    8   17   31  181

----- P9Q3b --------------------------------------------------
   0    1    2    3    4    5    6    7    8 <NA>
1275  337   38   38 1250  529    7   12   11 4799

----- P9Q5 ---------------------------------------------------
   1    2    3    4    5    6    7
  62 2046   67 4653  812  618   38

----- P9Q7b --------------------------------------------------
   0    1    2    3    4    5    6    7    8    9   11   12
  70 1788 2773 2462  816  227  122   17   14    5    1    1

----- P9Q8 ---------------------------------------------------
   1    2    3    4    5    6
 760 3742 1221  945  501 1127

----- P9Q10 --------------------------------------------------
   1    2    3    4    5    6   10   20   30   40   60 <NA>
 774 3862 1276 1195   12 1169    1    1    1    1    1    3

----- P9Q12 --------------------------------------------------
   0    1    2    3    4    5 <NA>
   7  226 4172  588   62 3232    9

----- P9Q13 --------------------------------------------------
   0    1    2    3    4    5 <NA>
   3 2964 5049  228   45    1    6

----- P9Q14 --------------------------------------------------
   0    1    2    3    4    5    6    7    8 <NA>
   1  104   33 6577  139 1363    7   69    1    2

----- P9Q15 --------------------------------------------------
   0    1    2    3    4    5    6 <NA>
   2 4368  183  281 2196  375  883    8


#### FREQUENCY OF VARIABLES IN Purchase ##########################################################

----- Bought -------------------------------------------------------
> table(Purchase$Bought,useNA="ifany")
    1     2
12602     7
```

Cross table in EDU

- Level and class now or last year

```
> addmargins(table(EDU$P3Q7a,EDU$P3Q7b,useNA="ifany"))
```

Level \ Class→	0	1	2	3	4	5	6	9	<NA>	Sum
0	46	0	0	0	0	0	0	0	23	69
1	31	2338	1742	1406	1284	1149	0	0	14	7964
2	2	841	850	664	0	0	0	0	1	2358
3	0	427	495	519	0	0	0	0	11	1452
4	0	64	58	40	0	0	0	0	0	162
5	0	62	71	54	42	21	2	1	1	254
<NA>	0	1	0	0	0	0	0	0	29195	29196
Sum	79	3733	3216	2683	1326	1170	2	1	29245	41455

- Highest level and class completed

```
> addmargins(table(EDU$P3Q11a,EDU$P3Q11b,useNA="ifany"))
```

Level \ Class→	0	1	2	3	4	5	6	7	8	9	<NA>	Sum
0	442	1	0	0	0	0	0	0	0	0	784	1227
1	214	2670	3287	3830	2747	6694	0	0	0	0	254	19696
2	3	1669	1610	3153	0	0	0	0	0	0	1	6436
3	2	592	726	1935	0	0	1	0	0	0	2	3258
4	1	163	159	975	0	0	0	0	0	0	1	1299
5	0	73	91	171	108	193	15	20	3	31	1	706
9	0	0	0	0	0	0	0	0	0	4	1	5
<NA>	0	1	0	1	0	0	0	0	0	0	8826	8828
Sum	662	5169	5873	10065	2855	6887	16	20	3	35	9870	41455

ItemNo in DIA

```
> ItemNo<-as.numeric(DIA$Item)
> table(DIA$ItemNo)

    1     2     3     4     5     6     7     8     9    10    11
 7521  2267  1500    48   450  1893  8531  2696  1731 11516 10782
   12    13    14    15    16    17    18    19    20    21    22
19575 20143  3261   927  1238  4428  1280  3720 22374  2880  2543
   23    24    25    26    27    28    29    30    31    32    33
 2075  3781  5280   293  1878   841   252   756   309  9482   966
   34    35    36    37    38    39    40    41    42    43    44
 1484  1568    74  2944  1693  3470  1115  2032  1196   318  1086
   45    46    47    48    49    50    51    52    53    54    55
   59    19    44    15   223    56   445   203   305    82  4896
   56    57    58    59    60    61    62    63    64    65    66
 1087 14379  5857  3520   744   131   593  2768  2100  3738  9616
   67    68    69    70    71    72    73    74    75    76    77
  534  2343  1570  1256   526  4563    61   112   382   108  2030
   78    79    80    81    82    83    84    85    86    87    88
 8749  3645  4767   266    65  1739 10583   203   101  1146   410
   89    90    91    92    93    94    95    96    97    98    99
  589   229    99   238    81   240   116   492  3981  2445    33
  100   101   102   103   104   105   106   107   108   109   110
 1368  4220  2402   528  5229   475  4871  1396    84   490 16024
  111   112   113   114   115   116   117   118   119   120   121
  288   232   996  1030  4261  4428  2429   403  5494   248   381
  122   123   124   125   126   127   128   129   130   131   132
  407   934 23364  4451   870 173259 30144  1448   362  1212   488
  133   134   135   136   137   138   139   140   141   142   143
 1240 90479 91154  9566   744 15204  1635   544    65   262 22783
  144   145   146   147   148   149   150   151   152   153   154
 2659 72114   279    24   141   300     5  2377    11   205   559
  155   156   157   158   159   160   161   162   163   164   165
14177   116   586   166    38    27   249   496   177   374   252
  166   167   168   169   170   171   172   173   174   175   176
  281   139   251   219    76   149   304   222   282    76   212
  177   178   179   180   181   182   183   184   185   186   187
  235    61    96   220   101   129  2092    23   655   105    23
  188   189   190   191   192   193   194   195   196   197   198
  595  1883   248    46  1076 114988  1332    13    16    86     6
  199   200   201   202   203   204   205   206   207   208   209
   31    19     8   129    26   117    58   155    74    29    21
  210   211   212   213   214   215   216   217   218   219   220
  276    60     9    59    24    29     6    77    95    44    18
  221   222   223   224   225   226   227   228   229   230   231
  117   136   109    44    40    10     9    43    13    54   724
  232   233   234   235   236   237   238   239   240   241   242
   71   203    54    84     4   113   196    31   224    12   351
  243   244   245   246   247   248   249   250   251   252   253
  675   170    66  1065    63    40    28  6420  1205   235  2424
  254   255   256   257   258   259   260   261   262   263   264
    4   135   403  8349    92   428   155    68   181    40   125
  265   266   267   268   269   270   271   272   273   274   275
  102    96   655   757  1038  4506 23618   644   597   416   988
```

```
  276   277   278   279   280   281   282   283   284   285   286
  935   473     9     4    35   225    18   201  5415     4   183
  287   288   289   290   291   292   293   294   295   296   297
   58    42    20    16    28     9    73     8    35    66   288
  298   299   300   301   302   303   304   305   306   307   308
   51    46   308    34  1071    65    16  2334  1887   478    23
  309   310   311   312   313   314   315   316   317   318   319
  282    41    88   305   277   472    33  1429   108   232    55
  320   321   322   323   324   325   326   327   328   329   330
 1781  6185 40972    73   343   197  4751  2675   199    79   608
  331   332   333   334   335   336   337   338   339   340   341
  300  2454   442   810    86   107    50    11   131   441   373
  342   343   344   345   346   347   348   349   350   351   352
   11    33   166   479  2925  3223  3467  1475  1450   180   441
  353   354   355   356   357   358   359   360   361   362   363
   22  2501   515   810  3123   360  1561   768  1840     3   200
  364   365   366   367   368   369   370   371   372   373   374
  828   194  2941   387  1534  3009    80    23    24   464 48299
  375   376   377   378   379   380   381   382   383   384   385
  277   121    62   572   252    17  2091    65   101  1016    43
  386   387   388   389   390   391   392   393   394   395   396
  576   262    81  1216    15   879  9557   954  5092  1828   112
  397   398   399   400   401   402   403   404   405   406   407
 4783  9604    28    12  1651 23109  1204 18719 10494    16  2429
  408   409   410   411   412   413   414   415   416   417   418
   62   589    98   478    12     7   336    16   347   226    48
  419   420   421   422   423   424   425   426   427   428   429
  703    14     2  1130   144    32     4    61    11    12     2
  430   431   432   433   434   435   436   437   438   439   440
    4  3244    19    60   112    19    12    38    37   753   139
  441   442   443
   26     9    52
```

 # List of frequency by Item

```
> t<-tapply(DIA$DiaryID,DIA$ItemNo,length)
> dim(t)
[1] 443
> t<-data.frame(Item=names(t),Freq=t,row.names=NULL)

> tt<-unique(DIA[,c("Item","ItemNo","ItemDescription")])
> tt<-merge(tt,t)
> tt[,c(1,2,4,3)]
    Item ItemNo   Freq                                ItemDescription
1      1      1   7521                                 Glutinous rice
2      2      2   2267                                  Ordinary rice
3      3      3   1500                                    Maize grain
4      4      4     48                                          Flour
5      5      5    450                                 Salapau bread
6      6      6   1893                                   Other bread
7      7      7   8531                                   Dry noodles
8      8      8   2696                             Fresh rice noodles
9      9      9   1731                                  Other noodles
10    10     10  11516                            Cakes and biscuits
11    11     11  10782                                         Other
12    12     12  19575                                          Pork
```

13	13	13	20143	Beef
14	14	14	3261	Chicken
15	15	15	927	Duck, turkey, other bread birds
16	16	16	1238	Sausages
17	17	17	4428	Meat from hunting,trapping (wild animals and birds)
18	18	18	1280	Offal
19	19	19	3720	Other meat
20	20	20	22374	Fresh fish
21	21	21	2880	Canned fish
22	22	22	2543	Frozen fish
23	23	23	2075	Dried fish and smoked fish
24	24	24	3781	Prawns, crabs, squid, etc.
25	25	25	5280	Fermented fish
26	26	26	293	Preserved fish
27	27	27	1878	Other
28	28	28	841	Condensed milk
29	29	29	252	Powdered milk
30	30	30	756	Fresh milk
31	31	31	309	Cheese, cream, yogurt
32	32	32	9482	Eggs
33	33	33	966	Other
34	34	34	1484	Lard,dipping (animal fat)
35	35	35	1568	Vegetable oil
36	36	36	74	Other
37	37	37	2944	Bananas
38	38	38	1693	Papayas
39	39	39	3470	Oranges
40	40	40	1115	Pineapples
41	41	41	2032	Lemon,lime
42	42	42	1196	Longan
43	43	43	318	Young coconuts
44	44	44	1086	Melon
45	45	45	59	Sepadila
46	46	46	19	Peaches
47	47	47	44	Gooseberry
48	48	48	15	Avocado
49	49	49	223	Custard apple
50	50	50	56	Guava
51	51	51	445	Tamarind
52	52	52	203	Jujube
53	53	53	305	Jackfruit
54	54	54	82	Preserved fruits
55	55	55	4896	Other fruits
56	56	56	1087	Water melon
57	57	57	14379	Chilli
58	58	58	5857	Cucumber
59	59	59	3520	Eggplant
60	60	60	744	Wax gourd
61	61	61	131	Loofah
62	62	62	593	Pumpkin
63	63	63	2768	Tomato
64	64	64	2100	Other
65	65	65	3738	Cabbage
66	66	66	9616	Chinese cabbage
67	67	67	534	Water convolvulus
68	68	68	2343	Mustard

69	69	69	1570	Lettuce
70	70	70	1256	Mint
71	71	71	526	Paksi
72	72	72	4563	Coriander
73	73	73	61	Peo
74	74	74	112	Basil
75	75	75	382	Phartemopey
76	76	76	108	Chun chai
77	77	77	2030	Garlic
78	78	78	8749	Onion
79	79	79	3645	Long beans
80	80	80	4767	Bamboo shots
81	81	81	266	Spinach
82	82	82	65	Green pepper
83	83	83	1739	Morning glory
84	84	84	10583	Other vegetables
85	85	85	203	Mungbeans
86	86	86	101	Cowpea
87	87	87	1146	Other legumes
88	88	88	410	Coconuts
89	89	89	589	Peanuts, ground (shelled)
90	90	90	229	Other
91	91	91	99	Potatoes
92	92	92	238	Sweet potatoes
93	93	93	81	Cassava
94	94	94	240	Yam
95	95	95	116	Chips and crisps
96	96	96	492	Other roots and tubers
97	97	97	3981	Sugar
98	98	98	2445	Sweets
99	99	99	33	Honey
100	100	100	1368	Ice cream
101	101	101	4220	Other
102	102	102	2402	Coffee
103	103	103	528	Tea
104	104	104	5229	Chocolate drink, e.g. Ovaltine
105	105	105	475	Other
106	106	106	4871	Salt
107	107	107	1396	Fish,shrimp sauces and paste
108	108	108	84	Tomato sauce
109	109	109	490	Soya
110	110	110	16024	Spices and seasoning
111	111	111	288	Baking powder
112	112	112	232	Vinegar
113	113	113	996	Other, specify
114	114	114	1030	Fruit juice, squashes
115	115	115	4261	Bottled water
116	116	116	4428	Other soft drinks (non-alcohol)
117	117	117	2429	Beer (bought in shops)
118	118	118	403	Beer (taken at bars, etc.)
119	119	119	5494	Lao Lao (bought in shops, etc.)
120	120	120	248	Lao Lao (taken at bars, etc.)
121	121	121	381	Other alcohol (bought in shops, etc.)
122	122	122	407	Other alcohol (taken at bars, etc.)
123	123	123	934	Tobacco for cigarettes
124	124	124	23364	Cigarettes

125	125	125	4451	Pipe tobacco
126	126	126	870	Other smokables
127	127	127	173259	Glutinous rice
128	128	128	30144	Ordinary rice
129	129	129	1448	Maize
130	130	130	362	Other grain crops
131	131	131	1212	Cassava
132	132	132	488	Sweet potatoes
133	133	133	1240	Other roots and tubers
134	134	134	90479	Vegetables, grown
135	135	135	91154	Vegetables collected (growing naturally)
136	136	136	9566	Fruits, grown
137	137	137	744	Fruits collected (growing naturally)
138	138	138	15204	Poultry and poultry products
139	139	139	1635	Own raised pigs (whole or parts)
140	140	140	544	Own raised cattle (whole or parts)
141	141	141	65	Own goats (whole or parts)
142	142	142	262	Other livestock raised (rabbits,¥x85..)
143	143	143	22783	Hunted or trapped animals
144	144	144	2659	Fish cultivated
145	145	145	72114	Fish, captured naturally grown
146	146	146	279	Coffee
147	147	147	24	Tea
148	148	148	141	Coconut
149	149	149	300	Soybean
150	150	150	5	Cardamon
151	151	151	2377	Citronella
152	152	152	11	Areca
153	153	153	205	Ginger
154	154	154	559	Other industrial crops
155	155	155	14177	Other own products, specify
156	162	156	496	Jeans
157	163	157	177	Other trousers
158	164	158	374	Jackets
159	165	159	252	Sportswear
160	166	160	281	Suits
161	167	161	139	T-shirts
162	168	162	251	Shirts
163	169	163	219	Underwear
164	170	164	76	Others
165	171	165	149	Lao skirt
166	172	166	304	Other skirt
167	173	167	222	Suits, dresses
168	174	168	282	Blouse
169	175	169	76	T-shirt
170	176	170	212	Jeans
171	177	171	235	Other trousers
172	178	172	61	Others
173	179	173	96	Shorts
174	180	174	220	Trousers
175	181	175	101	Skirt
176	182	176	129	T-shirt
177	183	177	2092	Shirts
178	184	178	23	Dresses
179	185	179	655	Blouses
180	186	180	105	Others

181	187	181	23	Tailoring charges
182	188	182	595	Cloth, materials for tailoring
183	189	183	1883	Footwear
184	190	184	248	Gross rent of house or flat (furnished or unfurnished)
185	191	185	46	Material for repair,maintenance of house
186	192	186	1076	Labour cost for repair,maintenance of house
187	193	187	114988	Material + labour if not possible to separate
188	194	188	1332	Water charges
189	195	189	13	Electricity
190	196	190	16	Kerosene
191	197	191	86	Charcoal
192	198	192	6	Firewood (purchased)
193	199	193	31	Firewood (own produced)
194	200	194	19	Other
195	201	195	8	Beds
196	202	196	129	Tables, chairs sofas
197	203	197	26	Cupboard
198	204	198	117	Dining room suite
199	205	199	58	Lounge suite
200	206	200	155	Desks and sideboards
201	207	201	74	Stools and benches
202	208	202	29	Others
203	209	203	21	Repair of furniture
204	210	204	276	Mats and rugs
205	211	205	60	Bed sheets
206	212	206	9	Blankets
207	213	207	59	Towels
208	214	208	24	Curtains
209	215	209	29	Table cloth, napkins,serviettes
210	216	210	6	Others
211	217	211	77	Repair of textiles
212	218	212	95	Carpets
213	219	213	44	Baskets, ashtrays, laundry bags
214	220	214	18	Flower posts, plants boxes
215	221	215	117	Flowers, flower pots
216	222	216	136	Repair of furnishings
217	223	217	109	Lamps, pictures
218	224	218	44	Others
219	225	219	40	Steam rice cooker
220	226	220	10	Electric rice cooker
221	227	221	9	Electric water cooker
222	228	222	43	Rice basket
223	229	223	13	Bucket
224	230	224	54	Stove with or without oven (gas or electric)
225	231	225	724	Refrigerator,deep freezer
226	232	226	71	Iron (electric, non-electric)
227	233	227	203	Air conditioner
228	234	228	54	Electric fan
229	235	229	84	Sewing machine
230	236	230	4	Washing machine
231	237	231	113	Other, specify
232	238	232	196	Repair of household appliances
233	239	233	31	Cutlery (knives, spoons, forks, etc.)
234	240	234	224	Glassware (glasses, glass bowls, etc.)
235	241	235	12	Plates and cups
236	242	236	351	Tea set

237	243	237	675	Dinner set
238	244	238	170	Other
239	245	239	66	Tools for gardening
240	246	240	1065	Other tools
241	247	241	63	Repair of utensils
242	248	242	40	Bulbs
243	249	243	28	Candles
244	250	244	6420	Torches
245	251	245	1205	Mops and brushes
246	252	246	235	Matches
247	253	247	2424	Needles and pins
248	254	248	4	Polish (furniture, floor, metal)
249	255	249	135	Shoe brush and polish
250	256	250	403	Soap laundry
251	257	251	8349	Batteries
252	258	252	92	Hire of furniture and household equipment
253	259	253	428	Other household goods
254	260	254	155	Domestic wages in kind
255	261	255	68	Domestic wages in cash
256	262	256	181	Other household services
257	263	257	40	Medicines
258	264	258	125	Therapeutic appliances and equipment
259	265	259	102	Payment for hospital services medical aid, fees
260	266	260	96	Non-hospital and paramedical services
261	267	261	655	Sickness and accident insurance services
262	268	262	757	Other
263	269	263	1038	Motor cars and vans
264	270	264	4506	Motor cycles
265	271	265	23618	Bicycles
266	272	266	644	Others, specify
267	273	267	597	Tyres and tubes
268	274	268	416	Parts and accessories incl. car batteries
269	275	269	988	Repair charges
270	276	270	935	Gasoline, petrol
271	277	271	473	Diesel oil
272	278	272	9	Other oil and greases
273	279	273	4	Servicing
274	280	274	35	Miscellaneous charges
275	281	275	225	Fares on buses (excl. school bus fares)
276	282	276	18	Fares on taxis and tuc tuc
277	283	277	201	Fares on boats
278	284	278	5415	Tickets on domestic airlines
279	285	279	4	Tickets on international airlines
280	286	280	183	Transport charges of goods
281	287	281	58	Other
282	288	282	42	Postal service charges
283	289	283	20	Telephone charges (fixed lines)
284	290	284	16	Mobile phone charges
285	291	285	28	Telegraph and telex
286	292	286	9	Radio or radio cassettes, VCD-, DVD-players
287	293	287	73	Television set
288	294	288	8	Parabola antenna
289	295	289	35	Video recorder
290	296	290	66	Cameras
291	297	291	288	Musical instrument
292	298	292	51	Cellular phone, handsets

293	299	293	46	Telephone sets
294	300	294	308	Computers
295	301	295	34	Repair of such items
296	302	296	1071	Film and develop a photograph
297	303	297	65	Other equipment
298	304	298	16	Parts and accessories of recreational goods
299	305	299	2334	Repair of recreational goods
300	306	300	1887	Cinema,theatre tickets
301	307	301	478	Lessons on sports and others
302	308	302	23	Lottery
303	309	303	282	Hire of video tapes
304	310	304	41	Veterinary and other services for pets
305	311	305	88	Traditional ceremonies
306	312	306	305	Other expenditure on recreation and cultural activities
307	313	307	277	Books
308	314	308	472	Magazines, journals and newspaper
309	315	309	33	Pen and pencils
310	316	310	1429	Other stationery
311	317	311	108	Costs for packages tours
312	318	312	232	Tuition fees (excl. of payments for food, beverage, shelter)
313	319	313	55	Teachers association fee or levy
314	320	314	1781	School uniform (incl. shoes)
315	321	315	6185	School sports wear
316	322	316	40972	Stationery for school
317	323	317	73	Border fees
318	324	318	343	Contribution to schools in cash
319	325	319	197	Contributions to schools in kind
320	326	320	4751	Other expenditure on education
321	327	321	2675	Catering, sit-down meals
322	328	322	199	Take away food
323	329	323	79	Expenditure in hotels
324	330	324	608	Services of barber shops,hair dressers
325	331	325	300	Services of beauty shops, massages, etc.
326	332	326	2454	Toilet soap
327	333	327	442	Shampoo
328	334	328	810	Toilet paper
329	335	329	86	Baby diapers
330	336	330	107	Skin cream
331	337	331	50	Tooth brush
332	338	332	11	Tooth paste
333	339	333	131	Powder, perfume
334	340	334	441	Other toilet articles
335	341	335	373	Watches
336	342	336	11	Jewelry, rings, precious stones
337	343	337	33	Repair of such items
338	344	338	166	Travel goods
339	345	339	479	Umbrellas
340	346	340	2925	Other personal goods
341	347	341	3223	Fees for legal services in cash
342	348	342	3467	Fees for legal services in kind
343	349	343	1475	Interests
344	350	344	1450	Other financial services
345	351	345	180	Membership fees
346	352	346	441	Rice milling charges
347	353	347	22	Gifts and contribution to Buddhist temple in cash
348	354	348	2501	Remittances given in cash to other households

349	356	349	810	Other, specify
350	401	350	1651	Glutinous rice
351	402	351	23109	Ordinary rice
352	403	352	1204	Maize
353	404	353	18719	Other cereals
354	405	354	10494	Home produced crops (see list)
355	406	355	16	Fodder
356	407	356	2429	Industrial crops
357	408	357	62	Vegetables, legumes
358	409	358	589	Roots and tubers
359	410	359	98	Fruits
360	411	360	478	Livestock
361	412	361	12	Poultry
362	413	362	7	Milk products
363	414	363	336	Eggs
364	415	364	16	Wild animals
365	416	365	347	Fish cultivated
366	417	366	226	Fish naturally grown
367	418	367	48	Wood, timber, firewood
368	419	368	703	Other sold proucts
369	420	369	14	Other receipts in cash
370	421	370	2	Other receipts in kind

>

Problems found from the above data check;

Data frame	Variable	Problems found
EDU	P3Q4Other, P3Q12Other	Included terms in Lao and could not be displayed on the console
EDU	P3Q14i	Definition is unclear
INC	IncomeOth	Included terms in Lao and could not be displayed on the console
DIA	Item	Factor variable in R. So, descriptions of items in English were displayed as levels.
The next variables include off-codes.		
INC	P1Q4a, P1Q4b, P1Q4c, P1Q5	Included 99/999/9999.
EDU	P3Q5, P3Q8, P3Q9, P3Q12, P3Q15, P3Q20, P3Q21, P3Q23, P3Q26	
EDU	P3Q7b, P3Q11a, P3Q11b	
INC	(None)	
DIA	Unit, Produced	
DUR	(None)	

5.4 Sample design

Number of province

```
> unique(HHB$Province)
 [1] "01" "02" "03" "04" "05" "06" "07" "08" "09" "10" "11" "12" "13" "14" "15" "16" "17" "18"
> unique(HHB$New.Province)
 [1] "01" "02" "03" "04" "05" "06" "07" "08" "09" "10" "11" "12" "13" "14" "15" "16" "17"
```

- The number of provinces in the provided data set was 18. However, there were 17 provinces in Lao PDR according to the survey report.

Revision of Province codes

- ☐ **Prior to 2006, the number of provinces was 18. The special administrative zone Xaisomboun created in 1994 was dissolved on January 13 2006.**

- ☐ **Hypothesis: Sample design of LECS4 was conducted based on the results of 2005 Population Census and the administrative code as of 2005 was applied for LECS4 implemented from April 2007 to March 2008. However the new administrative code after dissolution of Xaisomboun in 2006 was used in the official tabulation and publication.**

- ☐ Province codes and new provinces code were provided as "Region Province District Codes.xls" in IHSN website, as discussed in 5.1.

	Province		Region
1	Vientiane M	1	Vientiane M
2	Phongsaly	2	North
3	Luangnamtha	2	North
4	Oudumxay	2	North
5	Bokeo	2	North
6	Luangprabang	2	North
7	Huaphanh	2	North
8	Xayabury	2	North
9	Xiengkhuang	3	Central
10	Vientiane	3	Central
11	Borikhamxay	3	Central
12	Khammuane	3	Central
13	Savannakhet	3	Central
14	Saravane	4	South
15	Sekong	4	South
16	Champasack	4	South
17	Attapeu	4	South
18	Xaysomboun SR	3	Central

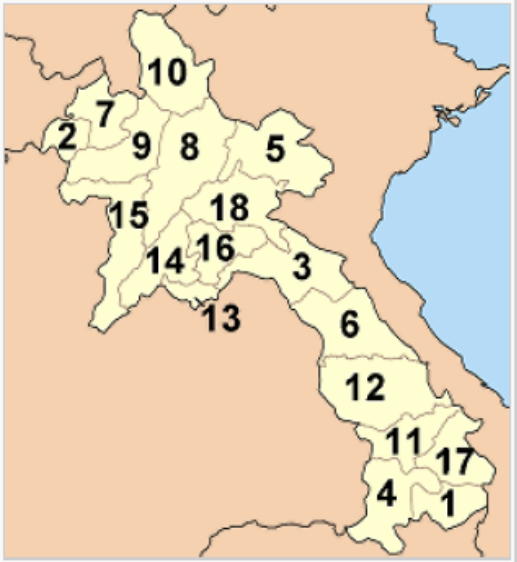
	New Province		New Region
1	Vientiane M	1	Vientiane M
2	Phongsaly	2	North
3	Luangnamtha	2	North
4	Oudumxay	2	North
5	Bokeo	2	North
6	Luangprabang	2	North
7	Huaphanh	2	North
8	Xayabury	2	North
9	Xiengkhuang	3	Central
10	Vientiane	3	Central
11	Borikhamxay	3	Central
12	Khammuane	3	Central
13	Savannakhet	3	Central
14	Saravane	4	South
15	Sekong	4	South
16	Champasack	4	South
17	Attapeu	4	South

1	District Code	District Name	Province	New Province
141	1801	Saysomboun	18	10
142	1802	Thathom	18	9
143	1803	Phoun	18	10
144				

According to Wikipedia, the transition might be summarized as follows;

Prior to 2006 dissolution of Xaisomboun in 2006 [edit]

1. Attapu
2. Bokeo
3. Bolikhamxai
4. Champasak
5. Houaphan (Houaphanh)
6. Khammouan
7. Loung Namtha
8. Louangphabang
9. Oudomxai
10. Phongsali
11. Salavan
12. Savannakhet
13. Vientiane Prefecture and Vientiane Capital (municipality)
14. Vientiane Province
15. Sainyabuli
16. Xaisomboun (special administrative zone, dissolved in 2006)
17. Sekong
18. Xiangkhoang



Provinces of Laos

Note: Province codes of the maps in Wikipedia are different from those of the province map at page 8.

In 2006 Xaisomboun special region (16), originally consisted of five districts, was dissolved. Then, Longsan, Xaysomboun, Phun, and Hom districts were added to Vientiane province (14), while Thathon district was transferred to Xiengkhuang province (14).

Administrative divisions of the Former Xaisomboun province were as follows;

Xaisomboun (also **Saysomboun**, Lao) was a special zone (*khetphiset*) of Laos, located in the north of the country, near the capital Vientiane. The special zone was created 1994 with area split off from the provinces Vientiane, and Xiangkhoang. It was dissolved on January 13, 2006.

Statistics	
Capital:	Ban Mouang Cha
Area:	7,105 km²
Inhabitants:	70,600 *(2004 est)*
Pop. density:	10 inh./km²
ISO 3166-2:	LA-XN
Geocode:	1800

Map

Administrative divisions [edit]

The province was originally up of the following districts:

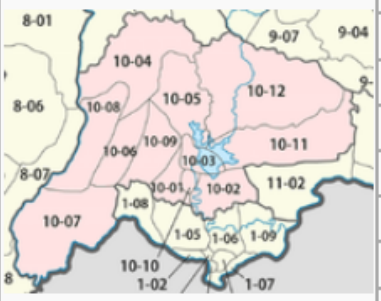
1. Hom (18-03)
2. Longsane (18-04)
3. Phun (18-05)
4. Thathom (18-02)
5. Xaysomboun (18-01)

- On September 23, 2004 the districts Hom and Longsane were merged. The new district, still named Hom, was reassigned to Vientiane Province.
- On June 27, 2005 the districts Phun and Xaysomboun were merged, with the new district still named Xaysomboun.
- On January 13, 2006 the special area was dissolved. Xaysomboun district was reassigned to Vientiane Province, while Thaton went to Xiangkhoang Province.

Administrative divisions of Vientiane Province (now) are as follows;

Administrative divisions [edit]

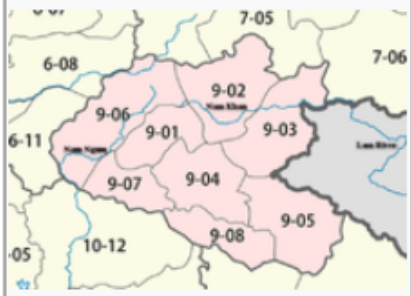
The province is made up of the following 10 districts:[23]

Map	Code	Name	Lao
	10-01	Phonhong	
	10-02	Thoulakhom	
	10-03	Keo Oudom	
	10-04	Kasy	
	10-05	Vangvieng	
	10-06	Feuang	
	10-07	Xanakharm	
	10-08	Mad	
	10-09	Hineherb	
	10-10	Viengkham	
	10–11	Hom	
	10–12	Xaisomboun (Saysomboun)	

Administrative divisions of Xiengkhuang province (now) are as follows;

Administrative divisions [edit]

The province is made up of the following eight districts which cover a total land area of 15,880 square kilometres (6,130 sq mi).[3] The district Thatom was reassigned from the special zone Xaisomboun when it was dissolved in January 2006.

Map	Code	Name	Lao
	09-01	Pek District	
	09-02	Kham District	
	09-03	Nonghed District	
	09-04	Khoune District	
	09-05	Morkmay District	
	09-06	Phookood District	
	09-07	Phaxay District	
	09-08	Thatom District	

Summary of the above transition;

Xaisomboun Province

Original districts in 1994		In 2006, assigned to;	New districts
Hom (1803)	Hom (1803)	Vientiane Province	(1011)
Longsane (1804)	Merged in 2004		
Phun (1805)		Xiangkhong Province	(0908)
Thathom (1802)			
Xaysomboun (1801)	Xaisomboun (1801)	Vientiane Province	(1012)
	Merged in 2005		

☐ **Generated the variable of Region for each data frame.**

"Region Province District Codes.xls" in IHSN website

	New Province		New Region
1	Vientiane M	1	Vientiane M
2	Phongsaly	2	North
3	Luangnamtha	2	North
4	Oudumxay	2	North
5	Bokeo	2	North
6	Luangprabang	2	North
7	Huaphanh	2	North
8	Xayabury	2	North
9	Xiengkhuang	3	Central
10	Vientiane	3	Central
11	Borikhamxay	3	Central
12	Khammuane	3	Central
13	Savannakhet	3	Central
14	Saravane	4	South
15	Sekong	4	South
16	Champasack	4	South
17	Attapeu	4	South

```
> for(j in 1:6){
+ df<-outfiles[[j]]
+ df$Region<-cut(as.integer(df$New.Province),breaks=c(1,2,9,14,17),right=F,
+ include.lowest=T,labels=1:4)
+ outfiles[[j]]<-df
+ }
> HHB<-outfiles[[1]]
> table(HHB$Region,HHB$New.Province)
    01  02  03  04  05  06  07  08  09  10  11  12  13  14  15  16  17
  1 768   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
  2   0 384 368 352 384 544 544 560   0   0   0   0   0   0   0   0   0
  3   0   0   0   0   0   0   0   0 400 608 368 544 768   0   0   0   0
  4   0   0   0   0   0   0   0   0   0   0   0   0   0 569 271 576 288

> Housing$Region<-cut(as.integer(Housing$New.Province),breaks=c(1,2,9,14,17),right=F,
+ include.lowest=T,labels=1:4)
> Purchase$Region<-cut(as.integer(Purchase$New.Province),breaks=c(1,2,9,14,17),
+ right=F, include.lowest=T,labels=1:4)
```

Number of sample village and household

PSU: number of sample villages

```
> length(unique(HHB$VillageID))
[1] 519
```

Remarks: 518 villages in the survey report (Table i in the survey report).

The number of sample villages of 519 in the micro data set was confirmed by the Delegates.

It was caused by the relocation on one sample village due to dam construction.

Table i : Number Sample for Survey

Target	LECS 1 (92/93)	LECS 2 (97/98)	LECS 3 (02/03)	LECS 4 (07/08)
Villages	147	450	540	518
Households	2 937	8 882	8 092	8 296

SSU: number of sample household

```
> nrow(HHB)
[1] 8296
```

Number of sample household within the village

```
> nhh.byVillage<-as.vector(tapply(HHB$HhID,HHB$VillageID,FUN=length))
> table(nhh.byVillage)
nhh.byVillage
 10  15  16
  1   2 516
```

516 psu have 16 sample households as sample design, but two psu have 15 households and one psu has 10 households.

Sample allocation over survey month

Allocation of sample households over month

```
> addmargins(table(HHB$Interview_Month))
   1    2    3    4    5    6    7    8    9   10   11   12  Sum
```

```
 688  682  704  752  672  688  686  688  688  672  688  688 8296
```

Completely the same as the table ii in the survey report!!

Table ii: Sample allocation over survey months [1]

	Month	Villages	Households	Persons
2007	April	45	752	4 364
	May	42	672	3 993
	June	43	688	3 907
	July	43	686	4 083
	August	43	688	3 872
	September	43	688	3 781
	October	42	672	3 797
	November	42	688	4 111
	December	44	688	3 979
2008	January	43	688	4 227
	February	43	682	3 938
	March	45	704	3 973
	Total	**518**	**8 296**	**48 025**

 # Allocation of sample household members over month

```
> addmargins(table(IND$Interview_Month))
    1     2     3     4     5     6     7     8     9    10    11    12   Sum
 4227  3938  3973  4362  3992  3907  4083  3872  3781  3796  4111  3979 48021
```

Remarks: 48,025 persons in the survey report

 # Allocation of sample village over month

```
> for(j in 1:12){
+ df<-subset(HHB, Interview_Month==j)
+ cat(c(j,"th month :", length(unique(df$VillageID)),"¥n"))
+ }
```

1 th month : 43

2 th month : 43

3 th month : 44

4 th month : 47

5 th month : 42

6 th month : 43

7 th month : 43

8 th month : 43

9 th month : 43

10 th month : 42

11 th month : 43

12 th month : 43

Remarks: Different from the table iii of the survey report.

Table iii: Number of sample villages in each stratum

Code	Province	Urban villages	Rural villages with access to road	Rural villages without access to road	Total
01	Vientiane C.	33	15	0	48
02	Phongsaly	3	8	13	24
03	Luangnamtha	5	13	5	23
04	Oudomxay	5	13	3	21
05	Bokeo	4	15	5	24
06	Luangprabang	5	19	10	34
07	Huaphanh	5	27	2	34
08	Xayabury	10	24	1	35
09	Xiengkhuang	5	17	3	25
10	Vientiane	17	21	0	38
11	Borikhamxay	3	16	4	23
12	Khammuane	5	28	1	34
13	Savannakhet	10	36	2	48
14	Saravane	4	30	2	36
15	Sekong	5	8	4	17
16	Champasack	9	17	10	36
17	Attapeu	2	12	4	18
	Total	**130**	**319**	**69**	**518**

 # Number of sample villages by province and village type

```
> t<-by(HHB, list(HHB$New.Province, HHB$VillageType),
+ FUN=function(df) length(unique(df$VillageID)))
> m<-matrix(as.vector(t), 17, 3)
> rownames(m)<-Province
> colnames(m)<-c("Urban","Rural_with","Rural_without")
> m[is.na(m)]<-0
> addmargins(m)
```

	Urban	Rural_with	Rural_without	Sum
01 Vientiane C.	33	15	0	48
02 Phongsaly	3	8	13	24
03 Luangnamtha	5	13	5	23
04 Oudomxay	5	14	3	22
05 Bokeo	4	15	5	24
06 Luangprabang	5	19	10	34
07 Huaphanh	5	27	2	34
08 Xayabury	10	24	1	35
09 Xiengkhuang	5	17	3	25
10 Vientiane	16	22	0	38
11 Borikhamxay	3	16	4	23
12 Khammuane	5	28	1	34
13 Savannakhet	10	36	2	48
14 Saravane	4	30	2	36
15 Sekong	5	8	4	17
16 Champasack	9	17	10	36
17 Attapeu	2	13	3	18
Sum	129	322	68	519

Remarks: Different from the table iii of the survey report.

Estimated number of households, household members and household size

```
> sum(HHB$Hhweight)/1000
[1] 984.61
```

This is the same as Table 2.1

```
> sum(IND$Hhweight)/1000
[1] 5607.019
> sum(IND$Hhweight)/sum(HHB$Hhweight)
[1] 5.69466
```

Estimated number of households by province

```
> round(tapply(HHB$Hhweight,HHB$New.Province,sum)/1000)
 01  02  03  04  05  06  07  08  09  10  11  12  13  14  15  16  17
125  29  28  44  27  69  44  64  39  77  40  63 134  58  14 109  20
```

Table 2.1: Household size and number of households by provinces and regions in 2007/08

	Number of households 2007/08 (1000 households)	Number of households 2002/03 (1000 households)	Household size LECS 2007/08	Confidence interval (margin of error)	Household size LECS 2002/03	Confidence interval (margin of error)
Lao PDR	**985**	**867**	**5.7**	**± 0.0**	**6.1**	± 0.1
Urban	302	240	5.4	± 0.1	5.8	± 0.2
Rural	683	627	5.8	± 0.0	6.2	± 0.1
North	**305**	**266**	**5.9**	**± 0.1**	**6.2**	± 0.2
Phongsaly	29	25	6.0	± 0.3	6.5	± 0.4
Luangnamtha	28	23	5.9	± 0.2	6.0	± 0.3
Oudomxay	44	38	6.4	± 0.2	6.5	± 0.5
Bokeo	27	25	5.0	± 0.2	5.4	± 0.4
Luangprabang	69	61	5.9	± 0.1	6.3	± 0.4
Huaphanh	44	37	7.0	± 0.2	7.3	± 0.3
Xayaboury	64	58	5.3	± 0.2	5.6	± 0.3
Center	**478**	**423**	**5.5**	**± 0.1**	**6.0**	± 0.1
Vientiane C.	125	111	5.2	± 0.1	5.7	± 0.2
Xiengkhuang	39	30	6.3	± 0.2	7.4	± 0.4
Vientiane P.	77	62	5.6	± 0.1	5.9	± 0.3
Borikhamxay	40	38	5.1	± 0.2	5.6	± 0.4
Khammuane	63	55	5.3	± 0.1	5.8	± 0.3
Savannakhet	134	122	5.8	± 0.1	6.3	± 0.2
South	**201**	**178**	**5.7**	**± 0.1**	**5.9**	± 0.2
Saravane	58	51	6.1	± 0.2	6.0	± 0.3
Sekong	14	12	6.7	± 0.4	6.4	± 0.5
Champasack	109	97	5.5	± 0.1	5.9	± 0.2
Attapeu	20	17	5.5	± 0.3	5.9	± 0.4

 # Estimated number of households by province

```
> t<-tapply(HHB$Hhweight,HHB$New.Province,sum)
> Province<-c("01 Vientiane C.","02 Phongsaly","03 Luangnamtha","04 Oudomxay",
+ "05 Bokeo","06 Luangprabang","07 Huaphanh","08 Xayabury","09 Xiengkhuang",
+ "10 Vientiane","11 Borikhamxay","12 Khammuane","13 Savannakhet","14 Saravane",
+ "15 Sekong","16 Champasack","17 Attapeu")
> data.frame(Province, No.Households=t,row.names=NULL)
          Province No.Households
1  01 Vientiane C.        124867
2     02 Phongsaly         28802
3   03 Luangnamtha         28145
4      04 Oudomxay         44231
5         05 Bokeo         27223
6  06 Luangprabang         69265
7      07 Huaphanh         43964
8      08 Xayabury         63682
9   09 Xiengkhuang         39425
10    10 Vientiane         77069
11  11 Borikhamxay         39827
12    12 Khammuane         62597
13  13 Savannakhet        134069
14     14 Saravane         58117
15       15 Sekong         13772
16   16 Champasack        109108
17      17 Attapeu         20447
```

 # Estimated number of households by province and village type

```
> t<-round(tapply(HHB$Hhweight,list(HHB$New.Province,HHB$VillageType),sum)/1000)
> rownames(t)<-Province
> colnames(t)<-c("Urban","Rural_with","Rural_without")
> t
               Urban Rural_with Rural_without
01 Vientiane C.    81         44            NA
02 Phongsaly        4         10            15
03 Luangnamtha      5         17             6
04 Oudomxay        10         31             3
05 Bokeo            4         20             3
06 Luangprabang    16         38            16
07 Huaphanh         5         37             2
08 Xayabury        19         43             2
```

09 Xiengkhuang	9	26	4
10 Vientiane	19	58	NA
11 Borikhamxay	8	28	4
12 Khammuane	14	47	2
13 Savannakhet	68	65	2
14 Saravane	5	51	2
15 Sekong	3	8	3
16 Champasack	28	54	27
17 Attapeu	5	14	2

Conclusions:

The hypothesis is not rejected regarding the number of households by province.

Weight

Variable of Hhweight in IND differs slightly from that of HHB. However the gaps are less than 0.01.

```
> z<-merge(HHB[c("HhID","Hhweight")],IND[c("HhID","Hhweight")],by="HhID")
> sum(abs(z$Hhweight.x-z$Hhweight.y)>0.01)
[1] 0
> sum(abs(z$Hhweight.x-z$Hhweight.y)>0.001)
[1] 43954
```

6. Household income

☐ **According to the survey report,**
Household income is the sum of income from all sources that household members have. It contains wages and social benefits, pensions, dividends and royalties received, transfers from abroad in cash or kind, entrepreneurial income from household businesses and agriculture, fishery and forestry.

☐ **However, no figures about the monthly or annual amount of household income was found in the survey report.**

Income, remittances and transfers

There are two sources; INC and DIA.

- The data frame INC includes income from wages and social benefits, pensions, dividends and royalties received, transfers from abroad in cash or kind.

The unit of INC is individual.
The reference period for the amount is one month.
The number of records in INC is 4,126 and the number of households having INC records is 2,571.

```
> dim(INC)
[1] 4126   28

> length(unique(INC$HhID))
[1] 2571

> colnames(INC)
 [1] "PersID"         "HhID"           "SerialNr"       "VillageID"
 [5] "DistrictID"     "Province"       "VillageType"    "Interview_Month"
 [9] "P1Q2"           "P1Q3"           "P1Q5"           "P1Q6"
[13] "P1Q7"           "Hhweight"       "Incom800"       "Incom801"
[17] "Incom802"       "Incom803"       "Incom804"       "Incom805"
[21] "Incom806"       "Incom807"       "Incom808"       "Incom809"
[25] "Incom810"       "Incom811"       "Incom812"       "IncomeOth"
```

☐ Generated data frame hhinc, collapsed INC by household

```
> hhinc<-aggregate(INC[15:27],list(INC$HhID),FUN=sum,na.rm=T)
> colnames(hhinc)[1]<-"HhID"
> hhinc["IncomSum"]<-rowSums(hhinc[,2:14],na.rm=T)
> colnames(hhinc)
 [1] "HhID"     "Incom800" "Incom801" "Incom802" "Incom803" "Incom804"
 [7] "Incom805" "Incom806" "Incom807" "Incom808" "Incom809" "Incom810"
[13] "Incom811" "Incom812" "IncomSum"
> head(hhinc)
```

```
       HhID Incom800 Incom801 Incom802 Incom803 Incom804 Incom805 Incom806
1 010100102  2807000        0        0        0        0        0        0
2 010100103   800000        0        0        0        0        0        0
3 010100104  1045100        0   700000        0        0        0        0
4 010100105  1100000        0   180000        0        0        0        0
5 010100106  1650000        0        0        0        0        0        0
6 010100108   833000        0        0        0        0        0        0
  Incom807 Incom808 Incom809 Incom810 Incom811 Incom812 IncomSum
1        0        0        0        0        0        0  2807000
2        0        0        0        0        0        0   800000
3        0        0        0        0        0        0  1745100
4        0        0        0        0        0        0  1280000
5        0        0        0        0        0        0  1650000
6        0        0  2865000        0        0        0  3698000
```

□ Appended weight to hhinc

```
> hhinc<-merge(hhinc,HHB[,c("HhID","Hhweight")],all.x=T)
> dim(hhinc)
[1] 2571   16
> head(hhinc)
       HhID Incom800 Incom801 Incom802 Incom803 Incom804 Incom805 Incom806
1 010100102  2807000        0        0        0        0        0        0
2 010100103   800000        0        0        0        0        0        0
3 010100104  1045100        0   700000        0        0        0        0
4 010100105  1100000        0   180000        0        0        0        0
5 010100106  1650000        0        0        0        0        0        0
6 010100108   833000        0        0        0        0        0        0
  Incom807 Incom808 Incom809 Incom810 Incom811 Incom812 IncomSum Hhweight
1        0        0        0        0        0        0  2807000 174.0088
2        0        0        0        0        0        0   800000 174.0088
3        0        0        0        0        0        0  1745100 174.0088
4        0        0        0        0        0        0  1280000 174.0088
5        0        0        0        0        0        0  1650000 174.0088
6        0        0  2865000        0        0        0  3698000 174.0088
```

□ Average monthly household income (in 1000 Kip)

```
> ave.hhinc<-colSums(hhinc[,2:15]*hhinc$Hhweight)/sum(HHB$Hhweight)/1000
> round(ave.hhinc,1)
Incom800 Incom801 Incom802 Incom803 Incom804 Incom805 Incom806 Incom807
   341.4      5.4      9.4     14.6     10.8     13.6     10.3      9.0
Incom808 Incom809 Incom810 Incom811 Incom812 IncomSum
    52.5    187.6      4.7     11.3      7.9    678.7
```

□ Comparison with diary data DIA

Income items in Diary are as follows;

Kind=4: income in cash or in kind
ItemNo: 431 to 443

```
# Created subset of DIA with income item
> DIA.inc<-subset(DIA,ItemNo>=431&ItemNo<=443&Kind==4)
> dim(DIA.inc)
[1] 4232   21
> length(unique(DIA.inc$HhID))
[1] 1457

> head(DIA.inc[,c(2,14:20)])
          HhID    Kip Kind Produced Purpose Item Hhweight ItemNo
2249 010100201  20000    4        1       2  800   255.34    431
2255 010100201 130000    4        1       2  800   255.34    431
2327 010100201  40000    4        1       2  800   255.34    431
2374 010100201 865000    4        1       2  800   255.34    431
2416 010100202 300000    4        1       2  800   255.34    431
2457 010100202 425000    4        1       2  800   255.34    431


# Generated data frame DIA.hhinc, collapsed DIA.inc by household and item
> t<-tapply(DIA.inc$Kip,list(DIA.inc$HhID,DIA.inc$ItemNo),FUN=sum,na.rm=T)
> dim(t)
[1] 1457   13
> head(t)
              431 432 433 434   435 436 437 438   439 440 441 442 443
010100201 1055000  NA  NA  NA    NA  NA  NA  NA    NA  NA  NA  NA  NA
010100202 1450000  NA  NA  NA 80000  NA  NA  NA 3e+05  NA  NA  NA  NA
010100215 1000000  NA  NA  NA    NA  NA  NA  NA    NA  NA  NA  NA  NA
010100218  500000  NA  NA  NA    NA  NA  NA  NA    NA  NA  NA  NA  NA
010100223 1500000  NA  NA  NA    NA  NA  NA  NA    NA  NA  NA  NA  NA
010101310  100000  NA  NA  NA    NA  NA  NA  NA    NA  NA  NA  NA  NA
> DIA.hhinc<-data.frame(HhID=rownames(t),t,row.names=NULL)
> DIA.hhinc[is.na(DIA.hhinc)]<-0
> DIA.hhinc$sum<-rowSums(DIA.hhinc[,-1])
> head(DIA.hhinc)
       HhID    X431 X432 X433 X434  X435 X436 X437 X438  X439 X440 X441 X442
1 010100201 1055000    0    0    0     0    0    0    0 0e+00    0    0    0
2 010100202 1450000    0    0    0 80000    0    0    0 3e+05    0    0    0
3 010100215 1000000    0    0    0     0    0    0    0 0e+00    0    0    0
```

```
4 010100218   500000     0     0     0      0     0     0     0 0e+00     0     0     0
5 010100223  1500000     0     0     0      0     0     0     0 0e+00     0     0     0
6 010101310   100000     0     0     0      0     0     0     0 0e+00     0     0     0
  X443      sum
1     0 1055000
2     0 1830000
3     0 1000000
4     0  500000
5     0 1500000
6     0  100000
> dim(DIA.hhinc)
[1] 1457   15
```

Appended weight to DIA.hhinc

```
> DIA.hhinc<-merge(DIA.hhinc,HHB[c("HhID","Hhweight")],all.x=T)
> dim(DIA.hhinc)
[1] 1457   16
```

Average monthly household income

```
> round(sapply(DIA.hhinc[,2:15],function(x)
sum(x*DIA.hhinc$Hhweight)/sum(HHB$Hhweight)/1000),1)
 X431  X432  X433  X434  X435  X436  X437  X438  X439  X440  X441  X442  X443
124.0   2.7   1.1   3.6   1.0   1.7   0.5   1.1  38.2  41.1   0.7   0.5   3.6
  sum
219.8
```

☐ Comparison of monthly income per household between DIA and INC (in 1000 Kip)

Summary from DIA			Summary from INC	
ItemNo	Description	Average income	Variable	Average income
431	Wages, salaries in cash	124.0	Income800	341.4
432	Social security	2.7	Income801	5.4
433	Wages, salaries in kind	1.1	Income802	9.4
434	Interest and royalties	3.6	Income803	14.6
435	Dividends	1.0	Income804	10.8
436	Other rent	1.7	Income805	13.6
437	Land rent	0.5	Income806	10.3
438	Pension and life insurance	1.1	Income807	9.0
439	Remittance, gifts in cash from Laos	38.2	Income808	52.5
440	Remittance, gifts in cash from abroad	41.1	Income809	187.6
441	Remittance, gifts in kind from Laos	0.7	Income810	4.7

442	Remittance, gifts in kind from abroad	0.5	Income811	11.3
443	Other current transfers Specify	3.6	Income812	7.9
	Total	219.8	Total	678.7

Conclusion:
There are big differences between two sources. The summary from INC is expected to use for estimation of household income.

Remarks:
There are no figures about the above results in the survey report.

Agricultural income

DIA

Revenue: Itemlev3=60: ItemNo=350 to 370
Costs: Itemlev3=61: ItemNo=371 to 391

```
> agri<-subset(DIA, ItemNo>=350&ItemNo<=391)
> dim(agri)
[1] 79203    21
> length(unique(agri$HhID))
[1] 5873
> addmargins(table(agri$ItemNo,useNA="ifany"))

  350   351   352   353   354   355   356   357   358   359   360   361   362
 1450   180   441    22  2501   515   810  3123   360  1561   768  1840     3
  363   364   365   366   367   368   369   370   371   372   373   374   375
  200   828   194  2941   387  1534  3009    80    23    24   464 48299   277
  376   377   378   379   380   381   382   383   384   385   386   387   388
  121    62   572   252    17  2091    65   101  1016    43   576   262    81
  389   390   391   Sum
 1216    15   879 79203
```

Generated data frame AGR.hhinc, collapsed agri by household and item

```
> t<-tapply(agri$Kip,list(agri$HhID,agri$ItemNo),FUN=sum,na.rm=T)
> dim(t)
[1] 5873   42
> head(t)
          350 351 352 353 354 355 356    357 358 359 360 361 362 363 364 365
010100103  NA  NA  NA  NA  NA  NA  NA     NA  NA  NA  NA  NA  NA  NA  NA  NA
010100116  NA  NA  NA  NA  NA  NA  NA     NA  NA  NA  NA  NA  NA  NA  NA  NA
010100119  NA  NA  NA  NA  NA  NA  NA     NA  NA  NA  NA  NA  NA  NA  NA  NA
010100122  NA  NA  NA  NA  NA  NA  NA     NA  NA  NA  NA  NA  NA  NA  NA  NA
010100201  NA  NA  NA  NA  NA  NA  NA     NA  NA  NA  NA  NA  NA  NA  NA  NA
010100202  NA  NA  NA  NA  NA  NA  NA 453700  NA  NA  NA  NA  NA  NA  NA  NA
          366 367 368 369 370 371 372   373    374 375 376 377   378 379 380
010100103  NA  NA  NA  NA  NA  NA  NA    NA  98000  NA  NA  NA    NA  NA  NA
010100116  NA  NA  NA  NA  NA  NA  NA    NA 401000  NA  NA  NA    NA  NA  NA
010100119  NA  NA  NA  NA  NA  NA  NA    NA  47000  NA  NA  NA    NA  NA  NA
010100122  NA  NA  NA  NA  NA  NA  NA    NA     NA  NA  NA  NA 40000  NA  NA
010100201  NA  NA  NA  NA  NA  NA  NA    NA  10000  NA  NA  NA    NA  NA  NA
010100202  NA  NA  NA  NA  NA  NA  NA 47000     NA  NA  NA  NA 25000  NA  NA
          381 382 383 384 385 386 387 388 389 390 391
010100103  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA
010100116  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA
010100119  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA
```

```
010100122  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA
010100201  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA
010100202  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA

> AGR.hhinc<-data.frame(HhID=rownames(t),t,row.names=NULL)
> AGR.hhinc[is.na(AGR.hhinc)]<-0


> AGR.hhinc$revenues<-rowSums(AGR.hhinc[,2:22])
> AGR.hhinc$costs<-rowSums(AGR.hhinc[,23:43])
> AGR.hhinc$agrinc<-AGR.hhinc$revenues-AGR.hhinc$costs
> head(AGR.hhinc)
       HhID X350 X351 X352 X353 X354 X355 X356   X357 X358 X359 X360 X361 X362
1 010100103    0    0    0    0    0    0    0      0    0    0    0    0    0
2 010100116    0    0    0    0    0    0    0      0    0    0    0    0    0
3 010100119    0    0    0    0    0    0    0      0    0    0    0    0    0
4 010100122    0    0    0    0    0    0    0      0    0    0    0    0    0
5 010100201    0    0    0    0    0    0    0      0    0    0    0    0    0
6 010100202    0    0    0    0    0    0    0 453700    0    0    0    0    0
  X363 X364 X365 X366 X367 X368 X369 X370 X371 X372  X373   X374 X375 X376
1    0    0    0    0    0    0    0    0    0    0     0  98000    0    0
2    0    0    0    0    0    0    0    0    0    0     0 401000    0    0
3    0    0    0    0    0    0    0    0    0    0     0  47000    0    0
4    0    0    0    0    0    0    0    0    0    0     0      0    0    0
5    0    0    0    0    0    0    0    0    0    0     0  10000    0    0
6    0    0    0    0    0    0    0    0    0    0 47000      0    0    0
  X377  X378 X379 X380 X381 X382 X383 X384 X385 X386 X387 X388 X389 X390 X391
1    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0
2    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0
3    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0
4    0 40000    0    0    0    0    0    0    0    0    0    0    0    0    0
5    0     0    0    0    0    0    0    0    0    0    0    0    0    0    0
6    0 25000    0    0    0    0    0    0    0    0    0    0    0    0    0
  revenues  costs  agrinc
1        0  98000  -98000
2        0 401000 -401000
3        0  47000  -47000
4        0  40000  -40000
5        0  10000  -10000
6   453700  72000  381700
> dim(AGR.hhinc)
[1] 5873   46

# Appended weight to AGR.hhinc
> AGR.hhinc<-merge(AGR.hhinc,HHB[c("HhID","Hhweight")],all.x=T)
> dim(AGR.hhinc)
[1] 5873   47
```

```
# Average monthly household income (1000 Kip)
> t<-round(sapply(AGR.hhinc[,2:46],
+ function(x) sum(x*AGR.hhinc$Hhweight)/sum(HHB$Hhweight)/1000),1)
> t
    X350     X351     X352     X353     X354     X355     X356     X357
    63.4      5.0     83.6      0.2     19.6      2.9     51.9     18.8
    X358     X359     X360     X361     X362     X363     X364     X365
     2.4     10.7     89.3     14.7      0.0      2.3      3.5      2.4
    X366     X367     X368     X369     X370     X371     X372     X373
    17.3     14.0     13.7     76.5      0.5      0.6      0.3      7.8
    X374     X375     X376     X377     X378     X379     X380     X381
    28.2     39.6      0.9      0.0     14.5      2.3      0.1     12.6
    X382     X383     X384     X385     X386     X387     X388     X389
     0.6     54.0     21.6      0.3      3.3      1.9      2.6     30.3
    X390     X391 revenues    costs   agrinc
     0.4     10.7    492.6    232.6    260.0

# Average annual household income (1000 Kip)
> 12*t
    X350     X351     X352     X353     X354     X355     X356     X357
   760.8     60.0   1003.2      2.4    235.2     34.8    622.8    225.6
    X358     X359     X360     X361     X362     X363     X364     X365
    28.8    128.4   1071.6    176.4      0.0     27.6     42.0     28.8
    X366     X367     X368     X369     X370     X371     X372     X373
   207.6    168.0    164.4    918.0      6.0      7.2      3.6     93.6
    X374     X375     X376     X377     X378     X379     X380     X381
   338.4    475.2     10.8      0.0    174.0     27.6      1.2    151.2
    X382     X383     X384     X385     X386     X387     X388     X389
     7.2    648.0    259.2      3.6     39.6     22.8     31.2    363.6
    X390     X391 revenues    costs   agrinc
     4.8    128.4   5911.2   2791.2   3120.0
```

Table 5.3: Agricultural production, by province and region in 2002/03. Annual income and costs, 1000 Kip/household

	Income						Costs				Entreprenurial income
	Grain	Vegetables and Fruits	Meat	Fish	Forestry	Others	Seed and fodder	Equipment	Wages	Others	
Lao PDR	***8,136***	***1,292***	***2,554***	***1,288***	***210***	***1,278***	***552***	***405***	***460***	***651***	***12,688***
Urban	6,646	1,458	2,586	1,311	131	1,541	905	255	575	818	11,120
Rural	8,481	1,253	2,546	1,282	228	1,217	470	440	434	612	13,051

```
> t<-round(sapply(AGR.hhinc[,2:46],
+ function(x) sum(x*AGR.hhinc$Hhweight)/sum(AGR.hhinc$Hhweight)/1000),1)
> t
    X350     X351     X352     X353     X354     X355     X356     X357
    89.9      7.1    118.5      0.2     27.8      4.0     73.6     26.6
```

```
    X358     X359     X360     X361     X362     X363     X364     X365
     3.4     15.2    126.5     20.8      0.0      3.2      5.0      3.4
    X366     X367     X368     X369     X370     X371     X372     X373
    24.5     19.9     19.5    108.4      0.7      0.9      0.4     11.0
    X374     X375     X376     X377     X378     X379     X380     X381
    40.0     56.1      1.3      0.1     20.6      3.3      0.2     17.8
    X382     X383     X384     X385     X386     X387     X388     X389
     0.8     76.5     30.6      0.4      4.7      2.7      3.6     43.0
    X390     X391 revenues    costs   agrinc
     0.6     15.2    698.2    329.7    368.6
> 12*t
    X350     X351     X352     X353     X354     X355     X356     X357
  1078.8     85.2   1422.0      2.4    333.6     48.0    883.2    319.2
    X358     X359     X360     X361     X362     X363     X364     X365
    40.8    182.4   1518.0    249.6      0.0     38.4     60.0     40.8
    X366     X367     X368     X369     X370     X371     X372     X373
   294.0    238.8    234.0   1300.8      8.4     10.8      4.8    132.0
    X374     X375     X376     X377     X378     X379     X380     X381
   480.0    673.2     15.6      1.2    247.2     39.6      2.4    213.6
    X382     X383     X384     X385     X386     X387     X388     X389
     9.6    918.0    367.2      4.8     56.4     32.4     43.2    516.0
    X390     X391 revenues    costs   agrinc
     7.2    182.4   8378.4   3956.4   4423.2

# Grain
> sum(t[1:7])*12
[1] 3130.8
```

Business income

DIA

Revenue: Itemlev3=62: ItemNo=392 to 403
Costs: Itemlev3=63: ItemNo=404 to 419

```
> hhb<-subset(DIA, ItemNo>=392&ItemNo<=419)
> dim(hhb)
[1] 92514    21
> length(unique(hhb$HhID))
[1] 3077
> addmargins(table(hhb$ItemNo,useNA="ifany"))
  392   393   394   395   396   397   398   399   400   401   402   403   404
 9557   954  5092  1828   112  4783  9604    28    12  1651 23109  1204 18719
  405   406   407   408   409   410   411   412   413   414   415   416   417
10494    16  2429    62   589    98   478    12     7   336    16   347   226
  418   419   Sum
   48   703 92514
```

Generated data frame HHB.hhinc, collapsed hhb by household and item

```
> t<-tapply(hhb$Kip,list(hhb$HhID,hhb$ItemNo),FUN=sum,na.rm=T)
> dim(t)
[1] 3077   28
> head(t)
             392   393     394 395 396 397    398 399   400 401     402
010100103     NA    NA 7480000  NA  NA  NA 223000  NA 2e+05  NA 5340100
010100105 4135000    NA      NA  NA  NA  NA 171000  NA    NA  NA  130000
010100108 3129000    NA      NA  NA  NA  NA   5000  NA    NA  NA      NA
010100110      NA 21000      NA  NA  NA  NA 492000  NA    NA  NA 2327000
010100117      NA    NA      NA  NA  NA  NA     NA  NA    NA  NA 5221000
010100118      NA    NA 1142500  NA  NA  NA   6000  NA    NA  NA  132000
             403     404     405 406 407 408 409 410    411 412 413 414 415
010100103     NA 2470000 4880000  NA  NA  NA  NA  NA     NA  NA  NA  NA  NA
010100105     NA  189000 5172000  NA  NA  NA  NA  NA     NA  NA  NA  NA  NA
010100108     NA 3496057  179000  NA  NA  NA  NA  NA 213000  NA  NA  NA  NA
010100110     NA      NA      NA  NA  NA  NA  NA  NA     NA  NA  NA  NA  NA
010100117     NA 4895000   10000  NA  NA  NA  NA  NA     NA  NA  NA  NA  NA
010100118 198000  184000 1527000  NA  NA  NA  NA  NA     NA  NA  NA  NA  NA
          416 417 418 419
010100103  NA  NA  NA  NA
010100105  NA  NA  NA  NA
010100108  NA  NA  NA  NA
010100110  NA  NA  NA  NA
010100117  NA  NA  NA  NA
010100118  NA  NA  NA  NA
```

```
> HHB.hhinc<-data.frame(HhID=rownames(t),t,row.names=NULL)
> HHB.hhinc[is.na(HHB.hhinc)]<-0


> HHB.hhinc$revenues<-rowSums(HHB.hhinc[,2:13])
> HHB.hhinc$costs<-rowSums(HHB.hhinc[,14:29])
> HHB.hhinc$hhbinc<-HHB.hhinc$revenues-HHB.hhinc$costs
> head(HHB.hhinc)
       HhID    X392  X393    X394 X395 X396 X397   X398 X399  X400 X401
1 010100103       0     0 7480000    0    0    0 223000    0 2e+05    0
2 010100105 4135000     0       0    0    0    0 171000    0 0e+00    0
3 010100108 3129000     0       0    0    0    0   5000    0 0e+00    0
4 010100110       0 21000       0    0    0    0 492000    0 0e+00    0
5 010100117       0     0       0    0    0    0      0    0 0e+00    0
6 010100118       0     0 1142500    0    0    0   6000    0 0e+00    0
     X402   X403    X404    X405 X406 X407 X408 X409 X410   X411 X412 X413
1 5340100       0 2470000 4880000    0    0    0    0    0      0    0    0
2  130000       0  189000 5172000    0    0    0    0    0      0    0    0
3       0       0 3496057  179000    0    0    0    0    0 213000    0    0
4 2327000       0       0       0    0    0    0    0    0      0    0    0
5 5221000       0 4895000   10000    0    0    0    0    0      0    0    0
6  132000  198000  184000 1527000    0    0    0    0    0      0    0    0
  X414 X415 X416 X417 X418 X419 revenues   costs  hhbinc
1    0    0    0    0    0    0 13243100 7350000 5893100
2    0    0    0    0    0    0  4436000 5361000 -925000
3    0    0    0    0    0    0  3134000 3888057 -754057
4    0    0    0    0    0    0  2840000       0 2840000
5    0    0    0    0    0    0  5221000 4905000  316000
6    0    0    0    0    0    0  1478500 1711000 -232500
> dim(HHB.hhinc)
[1] 3077   32


# Appended weight to HHB.hhinc
> HHB.hhinc<-merge(HHB.hhinc,HHB[c("HhID","Hhweight")],all.x=T)
> dim(HHB.hhinc)
[1] 3077   33

# Average monthly household income (1000 Kip)
> t<-round(sapply(HHB.hhinc[,2:32],
+ function(x) sum(x*HHB.hhinc$Hhweight)/sum(HHB$Hhweight)/1000),1)
> t
    X392     X393     X394     X395     X396     X397     X398     X399
   597.3      9.5    181.1     52.5     14.8     82.1     15.4      0.8
    X400     X401     X402     X403     X404     X405     X406     X407
     1.0     32.1    981.5     74.4   1269.7    189.5      0.4     39.5
```

```
    X408      X409      X410      X411      X412      X413      X414      X415
     7.8      10.7       3.8       3.8       0.3     194.2      14.1       0.3
    X416      X417      X418      X419  revenues     costs    hhbinc
     1.9       0.9       1.6       8.5    2042.5    1747.0     295.5
```

```
# Average monthly household business income per households operating a business
(1000 Kip)
> t<-round(sapply(HHB.hhinc[,2:32],
+ function(x) sum(x*HHB.hhinc$Hhweight)/sum(HHB.hhinc$Hhweight)/1000),1)
> t
    X392      X393      X394      X395      X396      X397      X398      X399
  1481.5      23.5     449.0     130.2      36.8     203.5      38.2       2.1
    X400      X401      X402      X403      X404      X405      X406      X407
     2.4      79.6    2434.2     184.6    3149.0     469.9       1.0      97.9
    X408      X409      X410      X411      X412      X413      X414      X415
    19.4      26.6       9.4       9.3       0.8     481.8      35.0       0.6
    X416      X417      X418      X419  revenues     costs    hhbinc
     4.8       2.3       3.9      21.0    5065.7    4332.7     733.0
```

Table 5.13: Household business, by region , 1000 Kip/business household per month

	HH with business* (%)	Revenues from:					Costs for:						Entrepreneurial income
		Trade	Production	Comm work	Services	Others	Materials	Goods resale	OP cost	Wages	Tools	Other costs	
Lao PDR	34	18,786	2,173	385	1,793	915	2,274	13,732	644	172	129	102	20,534
Urban	60	37,712	5,939	630	2,407	2,537	6,738	26,852	747	392	255	123	23,547
Rural	23	10,420	508	277	1,521	198	300	7,932	598	75	73	92	17,009
North	24	16,342	654	495	1,530	314	257	11,410	677	76	66	60	28,658
Central	42	22,168	3,862	408	2,045	1,576	3,988	15,487	681	291	182	163	22,272
South	32	14,469	467	163	1,591	258	1,262	13,090	507	36	99	17	6,054

* Households that have business incomes and/or business costs in the diary

Table 5.12: Per cent of households operating a business

	Households operating business %	Households operating one business %	Households operating two businesses %	Households operating three or more businesses %
Total country	28.0	23.0	4.0	0.7
Urban	49.0	39.0	8.0	1.5
Rural	32.0	27.0	5.0	0.8

```
# Proportion of households with household business data in a diary
> sum(HHB.hhinc$Hhweight)/sum(HHB$Hhweight)
[1] 0.4032002

# Proportion of households operating household business
> sum((HHB$P11Q1S1==1)*HHB$Hhweight)/sum(HHB$Hhweight)
[1] 0.2822866

# Proportion of households with positive household business revenues in a diary
> sum((HHB.hhinc$revenues>0)*HHB.hhinc$Hhweight)/sum(HHB$Hhweight)
[1] 0.384743

# Proportion of households with positive household business income in a diary
> sum((HHB.hhinc$hhbinc>0)*HHB.hhinc$Hhweight)/sum(HHB$Hhweight)
[1] 0.3287369

# Proportion of households with both positive household business revenues and
positive costs in a diary
>
sum((HHB.hhinc$revenues>0&HHB.hhinc$costs>0)*HHB.hhinc$Hhweight)/sum(HHB$Hhweigh
t)
[1] 0.2469224
```

☐ Combined household-level income data frames;

Data frame	nrow	ncol	Original	Remarks
hhinc	2571	16	INC	one month
DIA.hhinc	1457	15	DIA	one month
AGR.hhinc	5873	47	DIA	one month
HHB.hhinc	3077	33	DIA	one month

```
> HHINC<-HHB[,c(2,38,34,6,33)]
> dim(HHINC)
[1] 8296    5
> colnames(HHINC)
[1] "HhID"         "Region"       "New.Province" "VillageType"
[5] "Hhweight"

> HHINC<-merge(HHINC,hhinc[,-16],by="HhID",all.x=T)
> colnames(HHINC)
 [1] "HhID"         "Region"       "New.Province" "VillageType"
 [5] "Hhweight"     "Incom800"     "Incom801"     "Incom802"
 [9] "Incom803"     "Incom804"     "Incom805"     "Incom806"
[13] "Incom807"     "Incom808"     "Incom809"     "Incom810"
[17] "Incom811"     "Incom812"     "IncomSum"

> HHINC<-merge(HHINC,DIA.hhinc[,-16],by="HhID",all.x=T)
> colnames(HHINC)
 [1] "HhID"         "Region"       "New.Province" "VillageType"
 [5] "Hhweight"     "Incom800"     "Incom801"     "Incom802"
 [9] "Incom803"     "Incom804"     "Incom805"     "Incom806"
[13] "Incom807"     "Incom808"     "Incom809"     "Incom810"
[17] "Incom811"     "Incom812"     "IncomSum"     "X431"
[21] "X432"         "X433"         "X434"         "X435"
[25] "X436"         "X437"         "X438"         "X439"
[29] "X440"         "X441"         "X442"         "X443"
[33] "sum"

> HHINC<-merge(HHINC,AGR.hhinc[,-47],by="HhID",all.x=T)
> colnames(HHINC)
 [1] "HhID"         "Region"       "New.Province" "VillageType"
 [5] "Hhweight"     "Incom800"     "Incom801"     "Incom802"
 [9] "Incom803"     "Incom804"     "Incom805"     "Incom806"
[13] "Incom807"     "Incom808"     "Incom809"     "Incom810"
[17] "Incom811"     "Incom812"     "IncomSum"     "X431"
[21] "X432"         "X433"         "X434"         "X435"
[25] "X436"         "X437"         "X438"         "X439"
[29] "X440"         "X441"         "X442"         "X443"
[33] "sum"          "X350"         "X351"         "X352"
[37] "X353"         "X354"         "X355"         "X356"
[41] "X357"         "X358"         "X359"         "X360"
[45] "X361"         "X362"         "X363"         "X364"
[49] "X365"         "X366"         "X367"         "X368"
[53] "X369"         "X370"         "X371"         "X372"
[57] "X373"         "X374"         "X375"         "X376"
[61] "X377"         "X378"         "X379"         "X380"
[65] "X381"         "X382"         "X383"         "X384"
```

```
[69] "X385"         "X386"         "X387"         "X388"
[73] "X389"         "X390"         "X391"         "revenues"
[77] "costs"        "agrinc"

> HHINC<-merge(HHINC,HHB.hhinc[,-33],by="HhID",all.x=T)
> colnames(HHINC)
  [1] "HhID"          "Region"        "New.Province" "VillageType"
  [5] "Hhweight"      "Incom800"      "Incom801"     "Incom802"
  [9] "Incom803"      "Incom804"      "Incom805"     "Incom806"
 [13] "Incom807"      "Incom808"      "Incom809"     "Incom810"
 [17] "Incom811"      "Incom812"      "IncomSum"     "X431"
 [21] "X432"          "X433"          "X434"         "X435"
 [25] "X436"          "X437"          "X438"         "X439"
 [29] "X440"          "X441"          "X442"         "X443"
 [33] "sum"           "X350"          "X351"         "X352"
 [37] "X353"          "X354"          "X355"         "X356"
 [41] "X357"          "X358"          "X359"         "X360"
 [45] "X361"          "X362"          "X363"         "X364"
 [49] "X365"          "X366"          "X367"         "X368"
 [53] "X369"          "X370"          "X371"         "X372"
 [57] "X373"          "X374"          "X375"         "X376"
 [61] "X377"          "X378"          "X379"         "X380"
 [65] "X381"          "X382"          "X383"         "X384"
 [69] "X385"          "X386"          "X387"         "X388"
 [73] "X389"          "X390"          "X391"         "revenues.x"
 [77] "costs.x"       "agrinc"        "X392"         "X393"
 [81] "X394"          "X395"          "X396"         "X397"
 [85] "X398"          "X399"          "X400"         "X401"
 [89] "X402"          "X403"          "X404"         "X405"
 [93] "X406"          "X407"          "X408"         "X409"
 [97] "X410"          "X411"          "X412"         "X413"
[101] "X414"          "X415"          "X416"         "X417"
[105] "X418"          "X419"          "revenues.y"   "costs.y"
[109] "hhbinc"


> dim(HHINC)
[1] 8296  109

> HHINC[is.na(HHINC)]<-0
> HHINC$hhinc<-HHINC$IncomSum+HHINC$sum+HHINC$agrinc+HHINC$hhbinc
> nrow(subset(HHINC,hhinc>0))
[1] 5730
> nrow(subset(HHINC,hhinc<0))
[1] 1533
> nrow(subset(HHINC,hhinc==0))
[1] 1033


> weighted.mean(HHINC$hhinc,HHINC$Hhweight)/1000
[1] 1454.058

> save(INC,DIA,hhinc,DIA.hhinc,AGR.hhinc,HHB.hhinc,HHINC,file="HHINC.RData")
```

7. Household consumption

☐ According to the survey report,

Household expenditure includes purchase, or other exchange, of goods and services in the market. Consumption of the household is equal to the expenditure of the household plus the value of own produced goods. The difference between expenditure and consumption, is basically consumption of own produced goods, free collected firewood and the use of owner occupied houses.

CONSUMPTION = EXPENDITURE + VALUE OF OWN PRODUCED GOODS

☐ The survey report describes the result of household consumption by group, as the next.Table 3.11.

☐ The sources for estimating household consumption might be;

Diary,

IX Housing conditions, and

XIV Household purchase and selling of durables.

However, only data file of Diary was provided at first.

So, the latter two data files were provided upon request on the occasion of 2017 Workshop.

☐ Classification of Diary Item codes has major groups and mid-level groups.

"ItemforDiarySheet.xlsx" was provided to Sinfonica. The sheet included the following columns; ItemID, Txt_Lao, Item, ItemGr, ItemNo, Txt_Eng, Itemlev2, Itemlev3 and Frequency. However, it was not complete. As for food items, it included Item code/ Item No, Item description in English, ItemGr, Itemlev2 and Itemlev3, but it did not include information on Itemlev2 and Itemlev3 for non-food items.

☐ Therefore, the items other than food items were grouped into Itemlev3 and Itemlev2 as below, and the attached Item list was completed by the author (Attachment 3).

It means that the list is provisional and not guaranteed by Lao Department of Statistics at this moment.

Table 3.11: Household consumption by group of goods and services. Total and monthly household averages. (Percentages)

Group of goods and services	LECS 1992/93		LECS 1997/98		LECS 2002/03		LECS 2007/08		
	Percent of grand total	Percent of group total	Percent of grand total	Percent of group	Percent of grand total	Percent of group total	Percent of grand total	Percent of group total	Monthly con-sumption per household (1000 kip)
Food expenditure	**26**	**100**	**27**	**100**	**28**	**100**	**22.7**	**100.0**	**492.5**
Rice	5	17	7	27	4	15	3.3	14.5	71.4
Other cereals and bread	1	5	1	5	1	5	1.2	5.3	26.2
Meat	8	29	7	25	8	31	7.2	31.6	155.6
Fish	3	11	3	10	3	12	2.9	13.0	64.0
Milk, cheese and eggs	1	3	1	2	1	2	0.6	2.8	13.7
Oils and fats	0	1	0	1	0	1	0.1	0.5	2.3
Fruits	1	3	1	3	3	11	0.9	4.0	19.9
Vegetables and potatoes	3	10	2	8	1	4	2.0	8.9	44.0
Sugar and sweets	1	4	1	2	1	3	0.3	1.4	6.9
Non-alcoholic beverage coffee & tea	1	4	1	3	1	3	0.7	2.9	14.5
Other food	1	6	1	5	1	5	0.8	3.4	16.9
Meals	2	9	3	9	3	10	2.6	11.6	57.2
Own produced food	**38**	**100**	**34**	**100**	**29**	**100**	**23.4**	**100.0**	**507.0**
Own produced rice	23	60	21	61	16	54	14.5	62.3	315.6
Own produced other grains	.	.	0	0	0	0	0.0	0.2	0.8
Own produced meat	4	11	3	9	4	15	2.9	12.4	63.1
Own produced fish	4	11	5	16	4	15	3.1	13.1	66.3
Own produced fruits	0	1	0	1	0	1	0.1	0.6	3.2
Own produced vegetables	3	8	3	10	4	13	2.4	10.1	51.1
Other own produced	3	9	1	4	1	2	0.3	1.3	6.8
Clothing and footwear	**4**	**100**	**3**	**100**	**2**	**100**	**2.0**	**100.0**	**43.7**
Housing	**7**	**100**	**7**	**100**	**13**	**100**	**12.8**	**100.0**	**278.7**
Rent of houses	0	0	0	0	0	0	0.0	0.0	0.1
Imputed rent	5	66	5	67	9	68	9.2	73.1	200.2
Firewood collected	1	18	1	15	3	20	1.9	14.7	40.2
Water, electricity	1	15	1	18	2	12	1.5	12.1	33.2
Household utensils and operations	**4**	**100**	**5**	**100**	**4**	**100**	**4.3**	**100.0**	**93.3**
Medical care	**2**	**100**	**2**	**100**	**2**	**100**	**1.8**	**100.0**	**38.9**
Transport and communications	**7**	**100**	**11**	**100**	**12**	**100**	**19.8**	**100.0**	**429.9**
Education	**1**	**100**	**1**	**100**	**1**	**100**	**1.3**	**100.0**	**27.9**
Personal care	**3**	**100**	**1**	**100**	**2**	**100**	**2.6**	**100.0**	**56.3**
Recreation	**4**	**100**	**6**	**100**	**4**	**100**	**4.6**	**100.0**	**100.5**
Alcohol and tobacco	**3**	**100**	**3**	**100**	**3**	**100**	**2.3**	**100.0**	**49.2**
Others	**1**	**100**	**1**	**100**	**3**	**100**	**2.4**	**100.0**	**52.4**
Total consumption	**100**	**100**	**100**	**100**	**100**	**100**	**100.0**	**100.0**	**2170.7**

Table: Groups of Diary Item codes

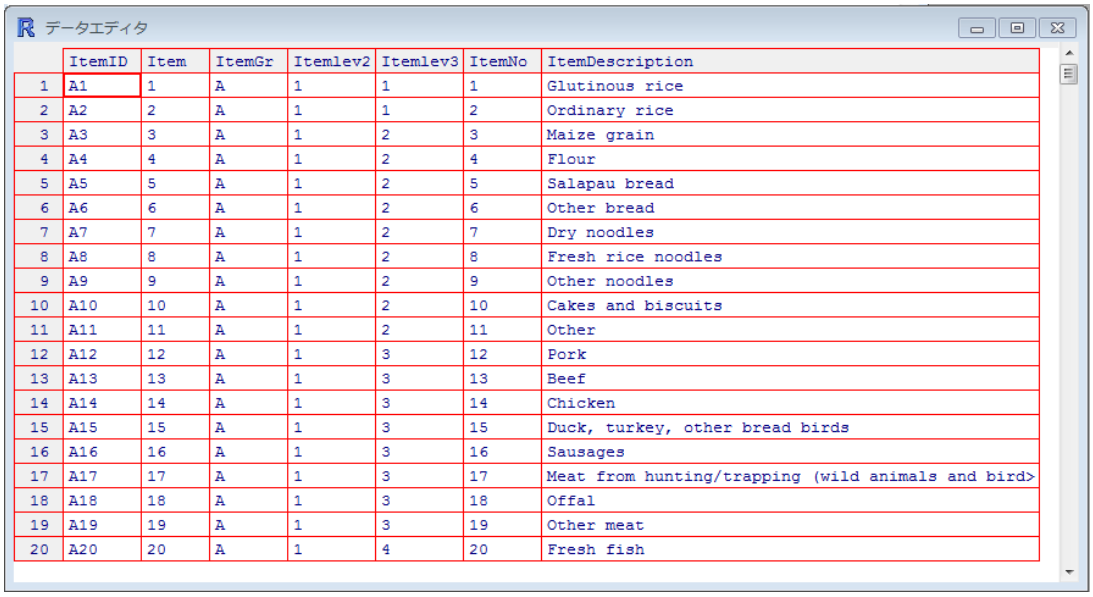
Itemlev2		Itemlev3	
1	Food expenditure	**1**	Rice.
		2	Other cereals and bread.
		3	Meat.
		4	Fish.
		5	Milk, cheese and eggs.
		6	Oils and fats.
		7	Fruits.
		8	Vegetables and potatoes.
		9	Sugar and sweets.
		10	Non-alcoholic beverages, coffee and tea.
		11	Other food.
		12	Meals.
2	Consumption of own produced food	**13**	Own produced rice.
		14	Own produced other grains.
		15	Own produced meat.
		16	Own produced fish.
		17	Own produced fruits.
		18	Own produced vegetables.
		19	Other own produces.
3	Clothing and footwear	**20**	Clothing and footwear.
4	Housing	**21**	Rent
		22	Imputed rent.
		23	Firewood collected.
		24	Water, electricity, other fuels
5	Household utensils and operations	**25**	Household utensils and operations.
6	Medical care	**26**	Medical care.
7	Transport and communications	**27**	Transport.
		28	Communications.
8	Education.	**29**	Education.
9	Personal care	**30**	Personal care.
10	Recreation	**31**	Recreation.
		32	Accommodation.
11	Alcohol and tobacco.	**33**	Alcohol and tobacco.
12	Other	**34**	Miscellaneous goods and services.
		35	Remittances given away.
		36	Taxes
13	Sales of goods	**50**	Sales of goods
14	Agricultural income	**60**	Agricultural income
15	Agricultural cost	**61**	Agricultural cost
16	Business income	**62**	Business income

17	Business cost	**63**	Business cost
18	Income, remittances and transfers	**80**	Wages and salaries
		81	Property income
		82	Pensions and other transf.
		83	Remitt. in cash fr Laos
		84	Remitt. in cash fr abroad
		85	Remitt. in kind fr Laos
		86	Remitt. in kind fr abroad
19	Interests	**96**	Interests
20	Repair/mainten.of houses	**97**	Repair/mainten.of houses
21	Investments	**98**	Investments

☐ Appended item subgroups

➢ Tentatively, completed the list of Diary Item in Excel by the author and imported it to R.

```
> DiaryItem<-read.csv("diaryitem.csv",header=T)
> dim(DiaryItem)
[1] 443   7
> colnames(DiaryItem)
[1] "ItemID"          "Item"            "ItemGr"          "Itemlev2"        "Itemlev3"
[6] "ItemNo"          "ItemDescription"
> head(DiaryItem)
  ItemID Item ItemGr Itemlev2 Itemlev3 ItemNo ItemDescription
1     A1    1      A        1        1      1  Glutinous rice
2     A2    2      A        1        1      2   Ordinary rice
3     A3    3      A        1        2      3     Maize grain
4     A4    4      A        1        2      4           Flour
5     A5    5      A        1        2      5   Salapau bread
6     A6    6      A        1        2      6     Other bread
> fix(DiaryItem)
```



データエディタ

	ItemID	Item	ItemGr	Itemlev2	Itemlev3	ItemNo	ItemDescription
1	A1	1	A	1	1	1	Glutinous rice
2	A2	2	A	1	1	2	Ordinary rice
3	A3	3	A	1	2	3	Maize grain
4	A4	4	A	1	2	4	Flour
5	A5	5	A	1	2	5	Salapau bread
6	A6	6	A	1	2	6	Other bread
7	A7	7	A	1	2	7	Dry noodles
8	A8	8	A	1	2	8	Fresh rice noodles
9	A9	9	A	1	2	9	Other noodles
10	A10	10	A	1	2	10	Cakes and biscuits
11	A11	11	A	1	2	11	Other
12	A12	12	A	1	3	12	Pork
13	A13	13	A	1	3	13	Beef
14	A14	14	A	1	3	14	Chicken
15	A15	15	A	1	3	15	Duck, turkey, other bread birds
16	A16	16	A	1	3	16	Sausages
17	A17	17	A	1	3	17	Meat from hunting/trapping (wild animals and bird>
18	A18	18	A	1	3	18	Offal
19	A19	19	A	1	3	19	Other meat
20	A20	20	A	1	4	20	Fresh fish

Appended the above information to DIA

```
> DIA2<-merge(DIA,DiaryItem[,c(-2,-7)],by="ItemNo")
> colnames(DIA2)
 [1] "ItemNo"          "SerialNr"        "HhID"            "VillageID"
 [5] "Province"        "DistrictID"      "VillageType"     "Hhnumber"
 [9] "Interview_Month" "DiaryID"         "Page"            "Serial_1"
[13] "Unit"            "Quantity"        "Kip"             "Kind"
[17] "Produced"        "Purpose"         "Item"            "Hhweight"
[21] "ItemDescription" "ItemID"          "ItemGr"          "Itemlev2"
[25] "Itemlev3"
> dim(DIA2)
[1] 1358317      25
> outfiles[[5]]<-DIA2
```

☐ Household expenditure by subgroup

```
> hhexp<-data.frame(matrix(round(tapply(DIA2$Kip*DIA2$Hhweight,
+ DIA2$Itemlev3,sum)/sum(HHB$Hhweight)/1000,1),34,1))
> dim(hhexp)
[1] 34  1

> conlev3<-c("1 Rice","2 Other cereals and bread","3 Meat","4 Fish","5 Milk, cheese and eggs",
+ "6 Oils and fats","7 Fruits","8 Vegetables and potatoes","9 Sugar and sweets",
+ "10 Non-alcoholic beverages, coffee and tea","11 Other food","12 Meals","13 Own produced rice",
+ "14 Own produced other grains","15 Own produced meat","16 Own produced fish",
+ "17 Own produced fruits","18 Own produced vegetables","19 Other own produces",
+ "20 Clothing and footwear","21 Rent","23 Firewood collected","24 Water, electricity, other fuels",
+ "25 Household utensils and operations","26 Medical care","27 Transport","28 Communications",
+ "29 Education","30 Personal care","31 Recreation","32 Accommodation","33 Alcohol and tobacco",
+ "34 Miscellaneous goods and services","35 Remittances given away")
> rownames(hhexp)<-conlev3
> colnames(hhexp)<-"Expenditure"
> hhexp<-rbind(hhexp,colSums(hhexp))
> rownames(hhexp)[35]<-"Total expenditure"
> hhexp
                                       Expenditure
1 Rice                                        71.4
2 Other cereals and bread                     26.2
3 Meat                                       155.6
4 Fish                                        64.0
5 Milk, cheese and eggs                       13.7
6 Oils and fats                                2.3
7 Fruits                                      20.4
8 Vegetables and potatoes                     44.3
9 Sugar and sweets                             6.9
10 Non-alcoholic beverages, coffee and tea    14.5
11 Other food                                 16.2
12 Meals                                      59.0
13 Own produced rice                         315.6
14 Own produced other grains                   0.8
15 Own produced meat                          63.1
```

16 Own produced fish	66.3
17 Own produced fruits	3.3
18 Own produced vegetables	51.1
19 Other own produces	6.7
20 Clothing and footwear	43.6
21 Rent	0.1
23 Firewood collected	40.2
24 Water, electricity, other fuels	33.2
25 Household utensils and operations	58.1
26 Medical care	38.9
27 Transport	247.9
28 Communications	24.4
29 Education	27.9
30 Personal care	35.8
31 Recreation	60.6
32 Accommodation	1.3
33 Alcohol and tobacco	49.2
34 Miscellaneous goods and services	36.6
35 Remittances given away	26.4
Total expenditure	1725.6

☐ Comparison with the survey report

Table: Monthly average household consumption by group of goods and

(1000 Kip)

Group of goods and services	Table 3.12 of the report	Computed from DIA	Gap	Remarks
Food expenditure	492.5			
Rice	71.4	71.4	0.0	
Other cereals and bread	26.2	26.2	0.0	
Meat	155.6	155.6	0.0	
Fish	64.0	64.0	0.0	
Milk cheese and eggs	13.7	13.7	0.0	
Oils and fats	2.3	2.3	0.0	
Fruits	19.9	20.4	0.5	
Vegetables	44.0	44.3	0.0	
Sugar and sweets	6.9	6.9	0.0	
Non-alcoholic beverages coffee & tea	14.5	14.5	0.0	
Other foods	16.9	16.2	-0.7	
Meals	57.2	59.0	1.8	
Own produced food	507.0	507.0	0.0	
Rice own produced	315.6	315.6	0.0	
Other own grain products	0.8	0.8	0.0	
Meat own produced	63.1	63.1	0.0	
Fish own produced	66.3	66.3	0.0	
Fruits own produced	3.2	3.3	0.1	
Vegetables own produced	51.1	51.1	0.0	
Other own products	6.8	6.7	-0.1	
Clothing footwear tailoring	43.7	43.6	-0.1	
Housing	273.7	73.5	-200.2	
Rent of houses	0.1	0.1	0.0	
Imputed rent	200.2	—	-200.2	1)
Fetched firewood	40.2	40.2	0.0	
Water electricity etc	33.2	33.2	0.0	
Household utensils and operations	93.3	58.1	-35.2	2)
Medical care	38.9	38.9	0.0	
Transport	429.9	247.9	-157.6	2)
Communication		24.4		
Education	27.9	27.9	0.0	
Personal care	56.3	35.8	-20.5	2)
Recreation	105.9	60.6	-45.4	2)
Alcohol and tobacco	49.2	49.2	0.0	
Miscellaneous goods and services	52.4	36.6	10.6	
Remittances given away		26.4		
Total consumption	2170.7	1725.6	-445.1	

Note 1) To be estimated from IX Housing condition

2)Some items to be estimated from XIV Household's purchase and selling of durables

```
### Housing ###
# Monthly average imputed rent estimated from Housing
> df<-Housing
> sum(df$P9Q2*df$Hhweight)/sum(df$Hhweight)/12/1000
[1] 200.236



### Purchase ###

> df<-Purchase
# Monthly purchase of durables
> t<-round(tapply(df$KipB*df$Hhweight,df$ItemB,sum)/984610/1000/12,1)
> t
 201  202  203  204  205  206  207  208  209  218  223  230  231  232  233  234  235
 1.8  2.8  9.1  1.2  1.3  0.7  0.6  1.1  0.1  0.8  1.2  0.2  7.1  0.3  0.6  1.8  0.2
 236  237  238  269  270  271  272  284  285  292  293  294  295  296  297  298  299
 1.0  1.7  0.3 83.7 58.8  3.1  7.5  0.2  1.5  1.1  8.6  0.5  2.8  0.1  0.8 12.4  0.5
 300  304  305  306  341  342  343  344  356
 0.8  1.3  0.0  0.1  0.1  5.1 14.5  0.0  3.2
> sum(t)
[1] 240.6
> length(t)
[1] 43

# Household utensils and operations
> t[1:20]
201 202 203 204 205 206 207 208 209 218 223 230 231 232 233 234 235 236 237 238
1.8 2.8 9.1 1.2 1.3 0.7 0.6 1.1 0.1 0.8 1.2 0.2 7.1 0.3 0.6 1.8 0.2 1.0 1.7 0.3
> sum(t[1:20])
[1] 33.9

# Transport
> t[21:24]
 269  270  271  272
83.7 58.8  3.1  7.5
> sum(t[21:24])
[1] 153.1

# Personal care
> t[39:42]
 341  342  343  344
 0.1  5.1 14.5  0.0
> sum(t[39:42])
[1] 19.7

# Recreation
> t[c(25:38,43)]
 284  285  292  293  294  295  296  297  298  299  300  304  305  306  356
 0.2  1.5  1.1  8.6  0.5  2.8  0.1  0.8 12.4  0.5  0.8  1.3  0.0  0.1  3.2
```

```
> sum(t[c(25:38,43)])
[1] 33.9
```

8 Resampling of micro data

Strategy for reorganizing and resampling micro data files

- ☐ The next variables were appended to all data files;
  - Region
  - New.Province

- ☐ The next variables were appended to HHB;
  - IND.male
  - IND.female
  - IND.total

- ☐ The next variables were appended to DIA;
  - ItemNo
  - ItemDescription
  - ItemID
  - Item
  - ItemGr
  - Itemlev2
  - Itemlev3

- ☐ To select HhID at the rate of 80 % using SYS; Interval=5, Random start number=1, and set as HhID.selected.

- ☐ To select records in each data file which belong to the HhID.selected.

- ☐ Add WT=Hhweight/0.8 to each data file.

```
> ls()
[1] "outfiles"
> HHB<-outfiles[[1]]
> IND<-outfiles[[2]]
> EDU<-outfiles[[3]]
> INC<-outfiles[[4]]
> DIA<-outfiles[[5]]
> DUR<-outfiles[[6]]

> HHB<-HHB[order(HHB$HhID),]

# Selected HHID at the rate of 80%
> HHB["sn"]<-1:nrow(HHB)
> HHB80<-HHB[HHB$sn%%5!=1,]
> nrow(HHB80)/nrow(HHB)
[1] 0.7999036
> HHB80<-HHB80[1:38]
> HHB80["WT"]<-HHB80$Hhweight/0.8
> dim(HHB80)
[1] 6636   39
# Selected HhID
```

```
> HhID.selected<-as.vector(HHB80$HhID)
> length(HhID.selected)
[1] 6636

# Generated 80% resampled micro data files
> IND80<-subset(IND,is.element(HhID,HhID.selected))
> IND80["WT"]<- IND80$Hhweight/0.8
> dim(IND80)
[1] 38439    22
> EDU80<-subset(EDU,is.element(HhID,HhID.selected))
> EDU80["WT"]<- EDU80$Hhweight/0.8
> dim(EDU80)
[1] 33196    56
> INC80<-subset(INC,is.element(HhID,HhID.selected))
> INC80["WT"]<- INC80$Hhweight/0.8
> dim(INC80)
[1] 3252   31
> DIA80<-subset(DIA,is.element(HhID,HhID.selected))
> DIA80["WT"]<- DIA80$Hhweight/0.8
> dim(DIA80)
[1] 1085932      28
> DUR80<-subset(DUR,is.element(HhID,HhID.selected))
> DUR80["WT"]<- DUR80$Hhweight/0.8
> dim(DUR80)
[1] 67056    16

> Housing80<-subset(Housing,is.element(HhID,HhID.selected))
> Housing80$WT<-Housing80$Hhweight/0.8
> dim(Housing80)
[1] 6636   38

> Purchase80<-subset(Purchase1,is.element(HhID,HhID.selected))
> Purchase80$WT<-Purchase80$Hhweight/0.8
> dim(Purchase80)
[1] 10140    18


> save(DIA80,DUR80,EDU80,HHB80,INC80,IND80,Housing80,Purchase80,
+ file="Resampled.LECS4.rev.RData")
```

Exported the resampled data in CSV format

```
> write.table(HHB80,file="HHB80.csv",sep=",",row.names=F)
> write.table(IND80,file="IND80.csv",sep=",",row.names=F)
> write.table(EDU80,file="EDU80.csv",sep=",",row.names=F)
> write.table(INC80,file="INC80.csv",sep=",",row.names=F)
> write.table(DIA80,file="DIA80.csv",sep=",",row.names=F)
> write.table(DUR80,file="DUR80.csv",sep=",",row.names=F)
> write.table(Housing80,file="Housing80.csv",sep=",",row.names=F)
```

```
> write.table(Purchase80,file="Purchase80.csv",sep=",",row.names=F)

> colnames(HHB80)
 [1] "SerialNr"       "HhID"           "VillageID"      "Province"       "DistrictID"
 [6] "VillageType"    "Hhnumber"       "Interview_Month" "P8"            "P10Q1a_1"
[11] "P10Q1a_2"       "P10Q1a_3"       "P11Q1S1"        "P12S1Q1"        "P12S3Dry"
[16] "P12S3Wet"       "P12S5Q1"        "P12S6Q1"        "P12S7Q1"        "P12S7Q2"
[21] "P12S8Q1"        "P14S1"          "P14S2"          "P14S3"          "P14S4"
[26] "P14S5"          "P15"            "P16S1Q1"        "P16S2Q1"        "Male"
[31] "Female"         "Total"          "Hhweight"       "New.Province"   "IND.total"
[36] "IND.male"       "IND.female"     "Region"         "WT"

> colnames(IND80)
 [1] "SerialNr"       "HhID"           "VillageID"      "Province"       "DistrictID"
 [6] "VillageType"    "Hhnumber"       "Interview_Month" "PersID"        "PCode"
[11] "P1Q2"           "P1Q3"           "P1Q4a"          "P1Q4b"          "P1Q4c"
[16] "P1Q5"           "P1Q6"           "P1Q7"           "Hhweight"       "New.Province"
[21] "Region"         "WT"

> colnames(EDU80)
 [1] "SerialNr"       "HhID"           "VillageID"      "Province"       "DistrictID"
 [6] "VillageType"    "Hhnumber"       "Interview_Month" "PersID"        "PCode"
[11] "P3Q1"           "P3Q2"           "P3Q3"           "P3Q4"           "P3Q4Other"
[16] "P3Q5"           "P3Q6"           "P3Q7a"          "P3Q7b"          "P3Q8"
[21] "P3Q8Other"      "P3Q9"           "P3Q9Other"      "P3Q10"          "P3Q11a"
[26] "P3Q11b"         "P3Q12"          "P3Q12Other"     "P3Q14a"         "P3Q14b"
[31] "P3Q14c"         "P3Q14d"         "P3Q14e"         "P3Q14f"         "P3Q14g"
[36] "P3Q14i"         "P3Q14h"         "P3Q15"          "P3Q16"          "P3Q17"
[41] "P3Q18a"         "P3Q18b"         "P3Q19"          "P3Q19Other"     "p3Q20"
[46] "P3Q21"          "P3Q22"          "P3Q23"          "P3Q24"          "P3Q25"
[51] "P3Q26"          "P3Q26Other"     "Hhweight"       "New.Province"   "Region"
[56] "WT"

> colnames(INC80)
 [1] "PersID"         "HhID"           "SerialNr"       "VillageID"      "DistrictID"
 [6] "Province"       "VillageType"    "Interview_Month" "P1Q2"          "P1Q3"
[11] "P1Q5"           "P1Q6"           "P1Q7"           "Hhweight"       "Incom800"
[16] "Incom801"       "Incom802"       "Incom803"       "Incom804"       "Incom805"
[21] "Incom806"       "Incom807"       "Incom808"       "Incom809"       "Incom810"
[26] "Incom811"       "Incom812"       "IncomeOth"      "New.Province"   "Region"
[31] "WT"

> colnames(DIA80)
 [1] "ItemNo"         "SerialNr"       "HhID"           "VillageID"      "Province"
 [6] "DistrictID"     "VillageType"    "Hhnumber"       "Interview_Month" "DiaryID"
[11] "Page"           "Serial_1"       "Unit"           "Quantity"       "Kip"
[16] "Kind"           "Produced"       "Purpose"        "Item"           "Hhweight"
[21] "ItemDescription" "ItemID"        "ItemGr"         "Itemlev2"       "Itemlev3"
[26] "New.Province"   "Region"         "WT"

> colnames(DUR80)
 [1] "HhID"           "SerialNr"       "VillageID"      "DistrictID"     "Province"
 [6] "VillageType"    "Interview_Month" "Hhweight"      "DurCode"        "P8Q1a"
[11] "P8Q1b"          "P8Q2"           "P8Oth"          "New.Province"   "Region"
[16] "WT"
```

```
> colnames(Housing80)
 [1] "SerialNr"        "HhID"            "VillageID"       "Province"
 [5] "DistrictID"      "VillageType"     "Hhnumber"        "Interview_Month"
 [9] "P9Q1"            "P9Q10th"         "P9Q2"            "P9Q3a"
[13] "P9Q3b"           "P9Q30th"         "P9Q4"            "P9Q40th"
[17] "P9Q5"            "P9Q50th"         "P9Q6a"           "P9Q6b"
[21] "P9Q7"            "P9Q7b"           "P9Q8"            "P9Q80th"
[25] "P9Q9"            "P9Q10"           "P9Q100th"        "P9Q11"
[29] "P9Q12"           "P9Q120th"        "P9Q13"           "P9Q130th"
[33] "P9Q14"           "P9Q140th"        "P9Q15"           "P9Q150th"
[37] "Hhweight"        "WT"

> colnames(Purchase80)
 [1] "SerialNr"        "HhID"            "VillageID"       "Province"
 [5] "DistrictID"      "VillageType"     "Hhnumber"        "Interview_Month"
 [9] "P14S1"           "ItemB"           "Bought"          "KipB"
[13] "ItemB2080th"     "ItemB2370th"     "ItemB2720th"     "ItemB3040th"
[17] "Hhweight"        "WT"
```

9 Tables generated from other data files

9.1 HHB: Household operating business

HHB

```
> HHB<-outfiles[[1]]
> nrow(HHB)
[1] 8296
```

P11Q1S1: Operating non-agricultural business

```
# Proportion of sample household operating non-agricultural business
> round(prop.table(table(HHB$P11Q1S1))*100,1)
   1    2
24.3 75.7


# Proportion of estimated number of household operating non-agricultural business
> round(prop.table(tapply(HHB$Hhweight,HHB$P11Q1S1,sum))*100,1)
   1    2
28.2 71.8


# Rate of the estimated number of household operating non-agricultural business by province
> hhob<-matrix(by(HHB,list(HHB$New.Province), function(df)
+ sum((df$P11Q1S1==1)*df$Hhweight)/sum(df$Hhweight)*100),17,1)
> Province<-c("01 Vientiane C.","02 Phongsaly","03 Luangnamtha","04 Oudomxay",
+ "05 Bokeo","06 Luangprabang","07 Huaphanh","08 Xayabury","09 Xiengkhuang",
+ "10 Vientiane","11 Borikhamxay","12 Khammuane","13 Savannakhet","14 Saravane",
+ "15 Sekong","16 Champasack","17 Attapeu")
> rownames(hhob)<-Province
> colnames(hhob)<-"Operating business"
> round(hhob,1)
               Operating business
01 Vientiane C.               57.5
02 Phongsaly                   8.6
03 Luangnamtha                12.3
04 Oudomxay                   11.0
05 Bokeo                      12.1
06 Luangprabang               32.1
07 Huaphanh                    8.0
08 Xayabury                   30.1
09 Xiengkhuang                17.5
10 Vientiane                  31.9
11 Borikhamxay                29.3
12 Khammuane                  20.0
13 Savannakhet                28.6
14 Saravane                   14.6
15 Sekong                     15.8
16 Champasack                 32.2
17 Attapeu                    35.5
```

Slightly different from Table 5.12 of the survey report.

Table 5.12: Per cent of households operating a business

	Households operating business %	Households operating one business %	Households operating two businesses %	Households operating three or more businesses %
Total country	28.0	23.0	4.0	0.7
Urban	49.0	39.0	8.0	1.5
Rural	32.0	27.0	5.0	0.8
North	19.0	15.0	3.0	0.4
Phongsaly	8.0	8.0	0.0	0.0
Luangnamtha	12.0	10.0	2.0	0.1
Oudomxay	11.0	10.0	1.0	0.0
Bokeo	12.0	10.0	2.0	0.2
Luangprabang	32.0	24.0	7.0	0.8
Huaphanh	8.0	6.0	1.0	0.7
Xayaboury	30.0	24.0	6.0	0.5
Center	34.0	28.0	5.0	0.9
Vientiane C.	57.0	45.0	11.0	2.0
Xiengkhuang	17.0	16.0	1.0	0.1
Vientiane P.	29.0	25.0	4.0	0.9
Borikhamxay	29.0	25.0	4.0	0.0
Khammuane	20.0	18.0	2.0	0.0
Savannakhet	29.0	25.0	3.0	0.8
South	26.0	21.0	4.0	0.7
Saravane	15.0	13.0	1.0	0.3
Sekong	15.0	13.0	2.0	0.0
Champasack	32.0	26.0	5.0	1.0
Attapeu	35.0	27.0	8.0	0.8

9.2 IND: Household member data file

– Age heaping, household size, dependency ratio, consumption unit

IND

```
> IND<-outfiles[[2]]
> nrow(IND)
[1] 48021
```

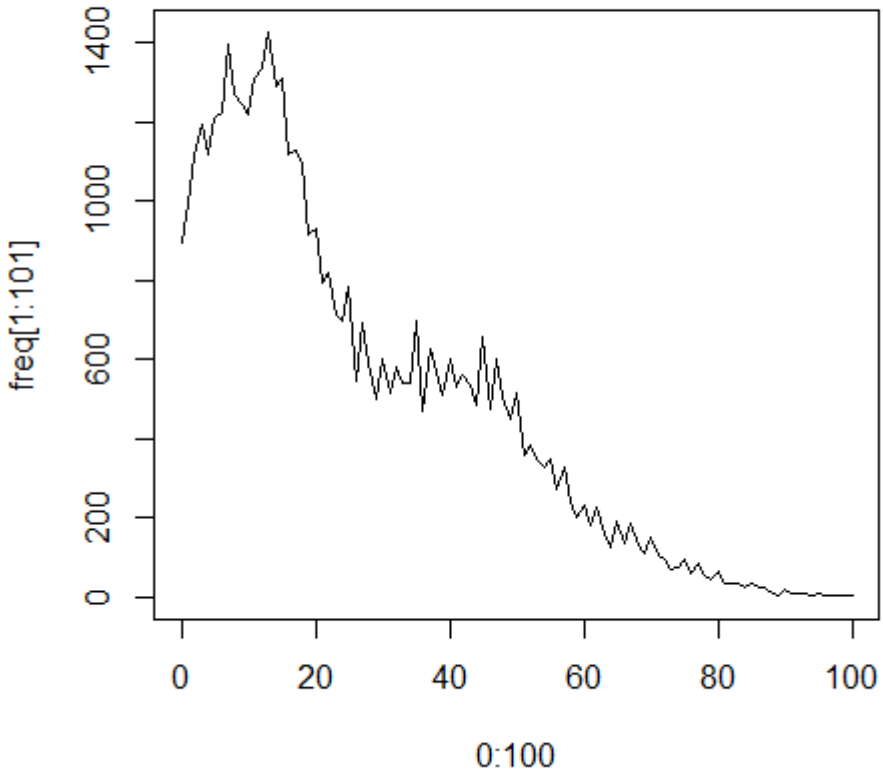
Age (IND$P1Q5)

```
> summary(IND$P1Q5)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
   0.00   10.00   20.00   25.32   39.00  999.00

> table(IND$P1Q5)
   0    1    2    3    4    5    6    7    8    9   10   11   12   13   14
 894  994 1109 1194 1116 1207 1223 1396 1268 1243 1218 1310 1334 1423 1289
  15   16   17   18   19   20   21   22   23   24   25   26   27   28   29
1311 1114 1126 1090  914  928  793  818  713  697  783  545  693  591  499
  30   31   32   33   34   35   36   37   38   39   40   41   42   43   44
 599  515  580  539  539  698  469  625  572  509  602  531  562  532  484
  45   46   47   48   49   50   51   52   53   54   55   56   57   58   59
 658  474  599  502  447  514  355  383  345  329  345  273  328  240  199
  60   61   62   63   64   65   66   67   68   69   70   71   72   73   74
 233  178  223  158  123  192  133  185  129  109  149  103   96   69   74
  75   76   77   78   79   80   81   82   83   84   85   86   87   88   89
  96   56   86   52   43   65   35   31   31   23   33   24   21    8    5
  90   91   92   93   94   95   96   97   98   99  100  101  102  106  108
  18    8    6    9    4    9    2    3    1    2    2    1    1    1    1
 110  999
   1    9
```

The value 999 may represent missing value.

```
# Age heaping
> freq<-as.vector(table(IND$P1Q5))
> plot(0:100,freq[1:101],type="l")
```



Age heaping phenoenon was found, but it was not severe.

Household size

- Collapsed IND by household and generated variables of household size

```
> IND["Total"]<-1
> IND["Male"]<-ifelse(IND$P1Q3==1,1,0)
> IND["Female"]<-ifelse(IND$P1Q3==2,1,0)
> x<-aggregate(IND[c("Total","Male","Female")],list(IND$HhID),FUN=sum)
> class(x)
[1] "data.frame"
> dim(x)
[1] 8296    4
> colnames(x)<-c("HhID","T","M","F")
> head(x)
       HhID T M F
1 010100102 7 4 3
2 010100103 6 2 4
3 010100104 4 2 2
4 010100105 4 2 2
5 010100106 6 3 3
6 010100108 7 1 6
```

- Compared with household size in HHB

```
> y<-merge(x,HHB[c("HhID","Total","Male","Female")],by="HhID")
> dim(y)
[1] 8296    7
> head(y)
       HhID T M F Total Male Female
1 010100102 7 4 3     7    4      3
2 010100103 6 2 4     6    2      4
3 010100104 4 2 2     4    2      2
4 010100105 4 2 2     4    2      2
5 010100106 6 3 3     6    3      3
6 010100108 7 1 6     7    1      6
```

Compared variables between T and Total, between M and Male, and between F and Female.

```
> sum(y[2]!=y[5])
[1] 8
> sum(y[3]!=y[6])
[1] 6
> sum(y[4]!=y[7])
[1] 11
```

Inconsistency about the number of Male

```
> y[y[3]!=y[6],]
          HhID T M F Total Male Female
807  020105111 8 4 4     8    3      5
1044 020502105 7 3 4     7    2      5
1152 020702023 7 2 5     7    3      4
1574 040102511 7 4 3     7    5      2
2234 050502017 5 2 3     5    3      2
7775 160611312 7 5 2     6    4      2
```

```
# Displayed household members who belonged the households with inconsistency
> (hhid.err<-y[y[3]!=y[6],"HhID"])
[1] 020105111 020502105 020702023 040102511 050502017 160611312
8296 Levels: 010100102 010100103 010100104 010100105 010100106 ... 180300423

> IND[is.element(IND$HhID,hhid.err),c("HhID","PCode","P1Q2","P1Q3","P1Q5")]
           HhID PCode P1Q2 P1Q3 P1Q5
4240  020105111    01    1    1   56
4241  020105111    02    2    2   55
4242  020105111    03    4    1   24
4243  020105111    04    4    2   21
4244  020105111    05    4    2   19
4245  020105111    06    4    1   18
4246  020105111    07    4    1   12
4247  020105111    08    4    2    2

5708  020502105    01    1    1   35
5709  020502105    02    2    2   34
5710  020502105    03    4    2   17
5711  020502105    04    4    1   15
5712  020502105    05    4    1   13
5713  020502105    06    3    2   65
5714  020502105    07    3    2   90

6319  020702023    01    1    1   41
6320  020702023    02    2    2   39
6321  020702023    03    3    2   75
6322  020702023    04    4    2   15
6323  020702023    05    4    2   14
6324  020702023    06    4    2   11
6325  020702023    07    4    1    7

8776  040102511    01    1    1   46
8777  040102511    02    2    2   42
8778  040102511    03    4    2   18
8779  040102511    04    4    1   15
8780  040102511    05    4    1   14
8781  040102511    06    3    1   86
8782  040102511    07    3    2   85

12539 050502017    01    1    1   44
12540 050502017    02    2    2   36
12541 050502017    03    4    2   15
12542 050502017    04    4    1   12
12543 050502017    05    3    2   71

45031 160611312    01    1    1   42
45032 160611312    02    2    2   38
45033 160611312    03    4    1   18
45034 160611312    04    4    1   14
45035 160611312    05    4    1   11
45036 160611312    06    4    2    6
45037 160611312    07    4    1    4
```

It was confirmed that the number of household members by sex from micro data might be more reliable.

Inconsistency about the number of Female

```
> y[y[4]!=y[7],]
          HhID  T M F Total Male Female
335  010400622  7 5 2     6    5      1
454  010600608  6 3 3     7    3      4
807  020105111  8 4 4     8    3      5
1044 020502105  7 3 4     7    2      5
1152 020702023  7 2 5     7    3      4
1574 040102511  7 4 3     7    5      2
2234 050502017  5 2 3     5    3      2
2471 060403514  7 3 4     6    3      3
2654 060710221  8 3 5     7    3      4
3205 070611607 11 7 4    12    7      5
6892 140505220  5 2 3     6    2      4

> (hhid.err<-y[y[4]!=y[7],"HhID"])
 [1] 010400622 010600608 020105111 020502105 020702023 040102511 050502017
 [8] 060403514 060710221 070611607 140505220
8296 Levels: 010100102 010100103 010100104 010100105 010100106 ... 180300423

> IND[is.element(IND$HhID,hhid.err),c("HhID","PCode","P1Q2","P1Q3","P1Q5")]
           HhID PCode P1Q2 P1Q3 P1Q5
1759  010400622    01    1    1   51
1760  010400622    02    2    2   44
1761  010400622    03    4    1   21
1762  010400622    04    4    1   19
1763  010400622    05    4    1   16
1764  010400622    06    4    1   10
1765  010400622    07    4    2   20

2388  010600608    01    1    1   50
2389  010600608    03    3    2   80
2390  010600608    04    4    1   23
2391  010600608    05    4    1   22
2392  010600608    06    5    2   21
2393  010600608    07    8    2    0

4240  020105111    01    1    1   56
4241  020105111    02    2    2   55
4242  020105111    03    4    1   24
4243  020105111    04    4    2   21
4244  020105111    05    4    2   19
4245  020105111    06    4    1   18
4246  020105111    07    4    1   12
4247  020105111    08    4    2    2

5708  020502105    01    1    1   35
5709  020502105    02    2    2   34
5710  020502105    03    4    2   17
5711  020502105    04    4    1   15
5712  020502105    05    4    1   13
5713  020502105    06    3    2   65
5714  020502105    07    3    2   90
```

6319	020702023	01	1	1	41
6320	020702023	02	2	2	39
6321	020702023	03	3	2	75
6322	020702023	04	4	2	15
6323	020702023	05	4	2	14
6324	020702023	06	4	2	11
6325	020702023	07	4	1	7
8776	040102511	01	1	1	46
8777	040102511	02	2	2	42
8778	040102511	03	4	2	18
8779	040102511	04	4	1	15
8780	040102511	05	4	1	14
8781	040102511	06	3	1	86
8782	040102511	07	3	2	85
12539	050502017	01	1	1	44
12540	050502017	02	2	2	36
12541	050502017	03	4	2	15
12542	050502017	04	4	1	12
12543	050502017	05	3	2	71
13837	060403514	01	1	1	54
13838	060403514	02	2	2	40
13839	060403514	03	4	2	19
13840	060403514	04	4	1	15
13841	060403514	05	4	2	11
13842	060403514	06	4	1	7
13843	060403514	07	4	2	5
14896	060710221	01	1	1	48
14897	060710221	02	2	2	43
14898	060710221	03	5	1	27
14899	060710221	04	4	2	19
14900	060710221	05	4	2	20
14901	060710221	06	8	2	2
14902	060710221	07	8	1	0
14903	060710221	08	8	2	67
18644	070611607	01	1	1	70
18645	070611607	02	2	2	60
18646	070611607	03	4	1	27
18647	070611607	04	5	2	27
18648	070611607	05	8	1	8
18649	070611607	07	8	1	2
18650	070611607	08	4	1	12
18651	070611607	09	4	1	10
18652	070611607	10	4	1	7
18653	070611607	11	4	2	15
18654	070611607	12	4	2	12
39687	140505220	01	1	1	41
39688	140505220	02	2	2	41
39689	140505220	04	4	1	18
39690	140505220	05	4	2	15
39691	140505220	06	4	2	6

It was confirmed that the number of household members by sex from micro data might be more reliable.

- Added variables of IND.total, IND.male and IND.female to data frame HHB

```
> HHB["IND.total"]<-x$T
> HHB["IND.male"]<-x$M
> HHB["IND.female"]<-x$F
> dim(HHB)
[1] 8296   37
> outfiles[[1]]<-HHB
```

Dependency ratio

```
# Numerator of dependency ratio
> depratio.num<-sum(IND$Hhweight*(IND$P1Q5<=14|IND$P1Q5>=65))
> depratio.num
[1] 2272706

# Denominator of dependency ratio
> depratio.den<-sum(IND$Hhweight*(IND$P1Q5>=15&IND$P1Q5<=64))
> depratio.den
[1] 3334314
> round(depratio.num/depratio.den,1)
[1] 0.7
```

 # Dependency ratio by province

```
> dep.ratio<-matrix(by(IND,list(IND$New.Province),function(df)
+ sum(df$Hhweight*(df$P1Q5<=14|df$P1Q5>=65))/
+ sum(df$Hhweight*(df$P1Q5>=15&df$P1Q5<=64))),17,1)
> rownames(dep.ratio)<-Province
> colnames(dep.ratio)<-"Dependency ratio"
> round(dep.ratio,1)
               Dependency ratio
01 Vientiane C.              0.4
02 Phongsaly                 0.8
03 Luangnamtha               0.7
04 Oudomxay                  0.8
05 Bokeo                     0.7
06 Luangprabang              0.7
07 Huaphanh                  0.9
08 Xayabury                  0.6
09 Xiengkhuang               0.9
10 Vientiane                 0.7
11 Borikhamxay               0.7
12 Khammuane                 0.8
13 Savannakhet               0.7
14 Saravane                  0.9
15 Sekong                    1.0
16 Champasack                0.7
17 Attapeu                   0.7
```

Completely the same as the table 2.4 of the survey report.

Table 2.4: Dependency rates and average number of consumption units, by province and region 2007/2008.

	Dependency ratio 2007/08	Average no. of consumption unit 2007/08	Dependency ratio 2002/03	Average no. of consumption unit 2002/03
Lao PDR	**0.7**	**4.7**	**0.8**	**4.5**
Urban	0.5	4.7	0.6	4.5
Rural	0.8	4.8	0.9	4.6
North	**0.7**	**4.8**	**0.9**	**4.6**
Phongsaly	0.8	4.9	0.9	4.8
Luangnamtha	0.7	4.8	0.7	4.5
Oudomxay	0.8	5.1	0.9	4.8
Bokeo	0.7	4.2	0.8	4
Luangprabang	0.7	4.8	0.9	4.6
Huaphanh	0.9	5.6	1.1	5.3
Xayaboury	0.6	4.5	0.7	4.3
Center	**0.6**	**4.7**	**0.7**	**4.6**
Vientiane C.	0.4	4.6	0.5	4.5
Xiengkhuang	0.9	5.0	1.1	5.3
Vientiane P.	0.7	4.6	0.8	4.4
Borikhamxay	0.7	4.3	0.8	4.3
Khammuane	0.8	4.3	0.9	4.3
Savannakhet	0.7	4.9	0.8	4.7
South	**0.8**	**4.7**	**0.9**	**4.4**
Saravane	0.9	4.8	0.9	4.4
Sekong	1.0	5.3	1	4.6
Champasack	0.7	4.5	0.8	4.4
Attapeu	0.7	4.6	0.9	4.3

Consumption unit

Definition:
Average number of consumption unit is calculated as 1 for the first adult in the household, 0.9 for other adults, 0.4 for children below age 7 and 0.7 for children aged 7-15. The consumption unit approach reflects the fact that members of a household can share some expenses and small children needs less food than an adult or a teenager.

```
> IND["ad"]<-ifelse(IND$P1Q5>=16,1,0)
> IND["ch1"]<-ifelse(IND$P1Q5<=6,1,0)
> IND["ch2"]<-ifelse(IND$P1Q5>=7&IND$P1Q5<=15,1,0)

# Collapsed by HhID

> INDc<-aggregate(IND[c("ad","ch1","ch2")],list(IND$HhID),FUN=sum)
> dim(INDc)
[1] 8296    4
> colnames(INDc)[1]<-"HhID"
> head(INDc)
       HhID ad ch1 ch2
1 010100102  6   0   1
```

```
2 010100103  6   0   0
3 010100104  4   0   0
4 010100105  3   0   1
5 010100106  6   0   0
6 010100108  7   0   0

# Composition of the household with HhID=010100102

> IND[IND$HhID=="010100102",c("PersID","P1Q2","P1Q3","P1Q5")]
      PersID P1Q2 P1Q3 P1Q5
1 01010010201    1    1   55
2 01010010202    2    2   42
3 01010010203    7    1   34
4 01010010204    7    2   32
5 01010010205    4    1   20
6 01010010206    4    2   17
7 01010010207    4    1   14


# Defined the consumption unit
# There is at least one adult for every household.
> table(INDc$ad>=1)
TRUE
8296

> INDc["con.unit"]<-0.1+0.9*INDc$ad+0.4*INDc$ch1+0.7*INDc$ch2

> head(INDc)
      HhID ad ch1 ch2 con.unit
1 010100102  6   0   1      6.2
2 010100103  6   0   0      5.5
3 010100104  4   0   0      3.7
4 010100105  3   0   1      3.5
5 010100106  6   0   0      5.5
6 010100108  7   0   0      6.4


> mean(INDc$con.unit)
[1] 4.559016

> weighted.mean(INDc$con.unit,HHB$Hhweight)
[1] 4.51988
```

Conclusion:
The average consumption unit is 4.5 from micro data, while that of the report is 4.7 as in the previous Table 2.4.

9.3 EDU: Education

– Net enrolment ration of children aged 6-11, literacy rate of population aged 15 and over

☐ The target of Education questionnaire is not clear.
(maybe 6 and over)

☐ Definition of primary school net enrolment ratio (NER)

NER = Enrolled children in the official school age group / Total number of children in the official school age group

☐ **Denominator from data frame IND**

```
> IND<-outfiles[[2]]
> dim(IND)
[1] 48021    23
> df<-subset(IND,P1Q5>=6 & P1Q5<=10)
> t<-tapply(df$Hhweight,list(df$New.Province,df$P1Q3),sum)
> dim(t)
[1] 17  2

# denominator matrix
> den<-matrix(t,17,2)
> colnames(den)<-c("Male","Female")
> rownames(den)<-Province
> round(addmargins(den))
                  Male Female    Sum
01 Vientiane C.  23165  24941  48106
02 Phongsaly     12033  11450  23484
03 Luangnamtha   10625  10113  20738
04 Oudomxay      20723  18297  39020
05 Bokeo          9568   8144  17712
06 Luangprabang  26223  26676  52899
07 Huaphanh      23056  23569  46626
08 Xayabury      18914  16045  34959
09 Xiengkhuang   18987  16667  35654
10 Vientiane     27446  26991  54437
11 Borikhamxay   13503  13919  27422
12 Khammuane     23002  24752  47754
13 Savannakhet   55762  44059  99820
14 Saravane      25629  26668  52297
15 Sekong         8723   7341  16064
16 Champasack    36778  38454  75232
17 Attapeu        8005   7761  15765
Sum             362142 345848 707990
```

□ Numerator from data frame EDU

```
> EDU<-outfiles[[3]]
> dim(EDU)
[1] 41455    54
```

 # Appended sex (P1Q3) and age (P1Q5) of IND to EDU

```
> EDU2<-merge(EDU,IND[c("PersID","P1Q3","P1Q5")])
```

 # Total number of enrolled children aged 6-10 by province

```
> df<-subset(EDU2,P1Q5>=6 & P1Q5<=10&(P3Q6==1|P3Q6==2))
> dim(df)
[1] 4937   56

> t<-tapply(df$Hhweight,list(df$New.Province,df$P1Q3),sum)
> dim(t)
[1] 17  2

# numerator matrix
> num<-matrix(t,17,2)
> colnames(num)<-c("Male","Female")
> rownames(num)<-Province
> round(addmargins(num))
                 Male Female    Sum
01 Vientiane C.  22287  24160  46447
02 Phongsaly      7953   7022  14975
03 Luangnamtha    7978   7908  15886
04 Oudomxay      15269  11764  27034
05 Bokeo          7521   6100  13621
06 Luangprabang  21164  21852  43017
07 Huaphanh      18031  16963  34994
08 Xayabury      16525  13433  29957
09 Xiengkhuang   16079  13913  29992
10 Vientiane     26175  24832  51007
11 Borikhamxay   12896  13130  26026
12 Khammuane     16951  18280  35232
13 Savannakhet   44779  32598  77377
14 Saravane      16732  16442  33174
15 Sekong         6337   5645  11982
16 Champasack    31862  32256  64118
17 Attapeu        5964   6279  12243
Sum             294504 272577 567082
```

 # Net enrolment ratio of children aged 6-10 by province

```
> ner<-round(addmargins(num)/addmargins(den)*100,1)
> dim(ner)
[1] 18  3
> rownames(ner)<-c(Province,"Total")
> colnames(ner)<-c("Male","Female","Total")
> ner
```

```
                Male Female Total
01 Vientiane C. 96.2   96.9  96.6
02 Phongsaly    66.1   61.3  63.8
03 Luangnamtha  75.1   78.2  76.6
04 Oudomxay     73.7   64.3  69.3
05 Bokeo        78.6   74.9  76.9
06 Luangprabang 80.7   81.9  81.3
07 Huaphanh     78.2   72.0  75.1
08 Xayabury     87.4   83.7  85.7
09 Xiengkhuang  84.7   83.5  84.1
10 Vientiane    95.4   92.0  93.7
11 Borikhamxay  95.5   94.3  94.9
12 Khammuane    73.7   73.9  73.8
13 Savannakhet  80.3   74.0  77.5
14 Saravane     65.3   61.7  63.4
15 Sekong       72.6   76.9  74.6
16 Champasack   86.6   83.9  85.2
17 Attapeu      74.5   80.9  77.7
Total           81.3   78.8  80.1
```

 # Net enrolment ratio of children aged 6-10 by village type

```
> df.d<-subset(IND,P1Q5>=6 & P1Q5<=10)
> EDU2<-merge(EDU,IND[c("PersID","P1Q3","P1Q5")])
> df.n<-subset(EDU2,P1Q5>=6 & P1Q5<=10&(P3Q6==1|P3Q6==2))
> ner2<-round(addmargins(tapply(df.n$Hhweight,list(df.n$VillageType,df.n$P1Q3),sum))/
+ addmargins(tapply(df.d$Hhweight,list(df.d$VillageType,df.d$P1Q3),sum))*100,1)
> rownames(ner2)<-c("Urban","Rural with access to road",
+ "Rural without access to road","Total")
> colnames(ner2)<-c("Male","Female","Total")
> ner2
                           Male Female Total
Urban                      91.8   90.6  91.2
Rural with access to road  79.6   76.3  78.0
Rural without access to road 70.1   70.9  70.5
Total                      81.3   78.8  80.1
```

Compared with Table 4.9 of the report, the above results differ slightly.

Table 4.9: Net school enrolment (%) among children 6-15 years old by sex and by province and urban/rural areas. (2007-08)

Region/province	Age 6-10			Age 11-15		
	Girls	Boys	Total	Girls	Boys	Total
Lao PDR	**78**	**80**	**79**	**90**	**95**	**93**
Urban	94	93	94	98	99	98
Rural with access to road	76	80	78	90	95	92
Rural without access to road	69	67	68	77	91	84
North	***74***	***78***	***76***	***85***	***95***	***90***
Phongsaly	66	71	69	75	94	84
Luangnamtha	76	78	77	78	91	85
Oudomxay	58	67	63	80	90	85
Bokeo	76	75	75	85	93	89
Luangprabang	86	87	86	94	98	96
Huaphanh	72	79	75	88	99	93
Xayaboury	81	86	84	90	97	94
Center	***84***	***85***	***85***	***94***	***96***	***95***
Vientiane C.	97	97	97	100	99	99
Xiengkhuang	86	86	86	96	97	96
Vientiane P.	94	95	95	98	100	99
Borikhamxay	95	94	95	100	99	100
Khammuane	75	76	75	90	96	93
Savannakhet	73	76	74	87	92	90
South	***76***	***75***	***76***	***90***	***94***	***92***
Saravane	67	69	68	82	89	86
Sekong	76	69	72	89	95	92
Champasack	87	88	87	97	96	97
Attapeu	75	76	75	95	99	97

☐ Literacy rate of population aged 15 and over

 # Number of persons aged 15+ who can read and write without or with some difficulty by sex and village type

```
# Numerator
# P3Q1: Reading letter
# P3Q2: Writing letter

> EDU2<-merge(EDU,IND[c("PersID","P1Q3","P1Q5")])
> dim(EDU2)
[1] 41455    59
> df.n<-subset(EDU2,(P3Q1==1|P3Q1==2)&(P3Q2==1|P3Q2==2)&P1Q5>=15)
> dim(df.n)
[1] 22803    59

> num<-round(matrix(addmargins(tapply(df.n$Hhweight,list(df.n$VillageType, df.n$P1Q3),
+ sum)),4,3))
> colnames(num)<-c("Male","Female","Total")
> rownames(num)<-c("Urban","Rural with access to road",
+ "Rural without access to road","Total")
> num
                              Male  Female   Total
Urban                         530340  529909 1060249
Rural with access to road     882918  702001 1584919
Rural without access to road  118338   88415  206753
Total                        1531597 1320324 2851921


# Denominator
> df.d<-subset(EDU2, P1Q5>=15)
> dim(df.d)
[1] 29783    56
> den<-round(matrix(addmargins(tapply(df.d$Hhweight,list(df.d$VillageType, df.d$P1Q3),
+ sum)),4,3))
> colnames(den)<-c("Male","Female","Total")
> rownames(den)<-c("Urban","Rural with access to road",
+ "Rural without access to road","Total")
> den
                              Male  Female   Total
Urban                         554041  600604 1154644
Rural with access to road    1016018 1070782 2086800
Rural without access to road  152016  168240  320256
Total                        1722075 1839625 3561700

# Literacy rate
> literacy<-round(num/ den*100,1)
> rownames(literacy)<-c("Urban","Rural with access to road",
+ "Rural without access to road","Total")
> colnames(literacy)<-c("Male","Female","Total")
> literacy
                             Male Female Total
Urban                        95.7   88.2  91.8
Rural with access to road    86.9   65.6  75.9
Rural without access to road 77.8   52.6  64.6
Total                        88.9   71.8  80.1
```

```
> literacy[c(4,1:3),c(2,1,3)]
                            Female Male Total
Total                         71.8 88.9  80.1
Urban                         88.2 95.7  91.8
Rural with access to road     65.6 86.9  75.9
Rural without access to road  52.6 77.8  64.6
```

The above results differ largely from those of Table 4.12 of the report.

Table 4.12: Literacy rate, population 15 +

Region	Read and write without or with some difficulty			Can not read and write			Can either write or read with some difficulty or with difficulty	
	Female	Male	Total	Female	Male	Total	Female	Male
Lao PDR	56	72	64	14	13	13	7	6
Urban area	81	88	84	9	7	8	4	4
Rural with road	52	69	60	15	15	15	8	7
Rural without road	35	55	45	16	16	16	8	8
North	46	65	55	15	15	15	8	7
Center	67	79	73	11	11	11	6	6
South	54	71	63	15	14	15	8	7

9.4 DUR: Household possession of durables

Structure of data file DUR:
HhID – DurCode – P8Q1a(Access but not own) – P8Q1b(Own) – P8Q2(Value)

```
> colnames(DUR)
 [1] "HhID"           "SerialNr"       "VillageID"      "DistrictID"
 [5] "Province"       "VillageType"    "Interview_Month" "Hhweight"
 [9] "DurCode"        "P8Q1a"          "P8Q1b"          "P8Q2"
[13] "P8Oth"          "New.Province"   "Region"
```

The number of records in DUR is 83,753 and the number of households in DUR is 8,282.

```
> dim(DUR)
[1] 83753    15
> length(unique(DUR$HhID))
[1] 8282
```

The number of records with P8Q1a>0 (Access but not own) is 392 and the number of households with P8Q1a>0 is 361.

```
> length(subset(DUR,P8Q1a>0)[,"HhID"])
[1] 392
> length(unique(subset(DUR,P8Q1a>0)[,"HhID"]))
[1] 361
```

The number of records with P8Q1b>0 (Own) is 77,773 and the number of households with P8Q1b>0 is 8,281, that is all sample households.

```
> length(subset(DUR,P8Q1b>0)[,"HhID"])
[1] 77773
> length(unique(subset(DUR,P8Q1b>0)[,"HhID"]))
[1] 8281
```

Durable codes with description is from 01 to 31. As for code 32, description may be in P8Oth. But, out of 561 records with DurCode=32, 560 cases are 'NA' for P8Oth, and one case is '32' for P8Oth.

```
> table(DUR[DUR$DurCode==32,"P8Oth"],useNA="ifany")
  32 <NA>
   1  560
> DUR[DUR$DurCode==32&!is.na(DUR$P8Oth),]
          HhID SerialNr VillageID DistrictID Province VillageType
79659 160801903  0008980   1608019       1608       16           2
      Interview_Month Hhweight DurCode P8Q1a P8Q1b   P8Q2 P8Oth
79659               9   192.29      32     NA      1 350000    32
```

```
# The next is the number of records by durable codes.
> table(DUR$DurCode)
   1    2    3    4    5    6    7    8    9   10   11   12   13   14   15
7917  269  871  557 4288 3321  105 2644 1218  392   40 2307 7164 7295 2024
  16   17   18   19   20   21   22   23   24   25   26   27   28   29   30
 337 6706 5216  997 4651  162 4357 4941  696 3372  324 1530  130  163 1773
  31   32
7425  561

# The next is the frequency table of P8Q1a.
> table(DUR$P8Q1a)
    0     1     2     3     4     5     6     7    10    20    30
44118   289    53    29     9     4     4     1     1     1     1

# The next is the frequency table of P8Q1b.
> table(DUR$P8Q1b)
    1     2     3     4     5     6     7     8     9    10    11    12    13
52128 12061  5686  3496  2004  1108   420   326   102   212    37    52    15
   14    15    16    17    18    19    20    21    23    24    25    26    27
   11    22     7     4     3     1    16     1     1     1     3     3     2
   28    30    33    34    35    36    37    40    50    56    60    70    80
    2    17     1     1     2     1     1     4    13     1     2     1     1
   88   100   200   220
    1     1     1     1
```

 # Generated variables of car (vehicle), bike (motor bike) and mobile (mobile phone) in DUR;

```
> DUR["car"]<-ifelse(DUR$DurCode==4&DUR$P8Q1b>0,1,0)
> DUR["bike"]<-ifelse(DUR$DurCode==5&DUR$P8Q1b>0,1,0)
> DUR["mobile"]<-ifelse(DUR$DurCode==25&DUR$P8Q1b>0,1,0)
> sum(DUR["car"])
[1] 557
> sum(DUR["bike"])
[1] 4288
> sum(DUR["mobile"])
[1] 3372

# The percentage of sample households owing car, motor bike and mobile phone;
> sum(DUR$car)/nrow(HHB)*100
[1] 6.714079
> sum(DUR$bike)/nrow(HHB)*100
[1] 51.68756
> sum(DUR$mobile)/nrow(HHB)*100
[1] 40.64609

# The percentage of the estimated number of households owing car, motor bike and
mobile phone;
> sum(DUR$car*DUR$Hhweight)/sum(HHB$Hhweight)*100
```

```
[1] 8.195908
> sum(DUR$bike*DUR$Hhweight)/sum(HHB$Hhweight)*100
[1] 58.5823
> sum(DUR$mobile*DUR$Hhweight)/sum(HHB$Hhweight)*100
[1] 48.05354
```

Table: Percentage of household owing durable goods

Durable goods	Table 5.21 in The report	Percentage of sample households	Percentage of estimated number of households
Car	7	6.7	8.2
Motor bile	51	51.7	58.6
Mobile phone	42	40.6	48.1

Conclusion:
The results of the report are nearer to the simple average than the weighted average.

Table 5.21: Possession of durable goods, per cent of households by provinces and regions 2007/08.

	Car	Motor bike	Bike	TV	Radio/ video	Mobile phone	Refrig-erator	Vacuum clean-er	Washing machine	Electric rice cooker
Lao PDR	*7*	*51*	*39*	*53*	*55*	*42*	*34*	*1*	*5*	*29*
Urban	15	67	41	73	62	65	61	2	15	58
Rural	4	44	38	44	52	32	22	0	1	16
North	*4*	*33*	*27*	*37*	*51*	*25*	*17*	*0*	*2*	*15*
Phongsaly	0	17	2	14	38	10	5	-	1	6
Luangnamtha	3	29	25	31	41	27	8	-	1	10
Oudomxay	2	24	12	25	38	15	10	-	1	10
Bokeo	2	19	30	35	53	22	18	-	3	12
Luangprabang	4	29	25	37	55	28	22	0	3	20
Huaphanh	3	47	33	38	58	17	12	-	2	12
Xayaboury	9	50	46	57	60	39	30	-	3	25
Center	*10*	*61*	*46*	*65*	*61*	*55*	*47*	*1*	*8*	*42*
Vientiane C.	24	80	48	86	73	81	82	3	24	79
Xiengkhuang	6	46	31	40	48	30	10	0	1	17
Vientiane P.	7	51	34	57	51	48	43	0	4	44
Borikhamxay	7	54	53	57	51	50	42	1	7	37
Khammuane	4	47	42	60	54	38	38	0	2	22
Savannakhet	3	60	54	62	64	50	34	0	2	24
South	*4*	*54*	*40*	*49*	*50*	*39*	*27*	*0*	*3*	*20*
Saravane	3	41	29	36	46	26	17	0	1	12
Sekong	2	46	33	26	45	15	13	-	2	10
Champasack	5	67	45	63	56	53	36	-	3	27
Attapeu	2	28	49	21	33	16	13	-	1	13

 # The percentage of the estimated number of households owing car by province

```
> # Estimated number of households by province
> thh<-tapply(HHB$Hhweight,HHB$New.Province,sum)

> # Estimated number of households owing car by province
> DUR<-merge(DUR,HHB[c("HhID","New.Province")])
> DUR["car"]<-ifelse(DUR$DurCode==4&DUR$P8Q1b>0,1,0)
> hhc<-tapply(DUR$car*DUR$Hhweight,DUR$New.Province,sum)

> # Percentage
> hhoc<-matrix(round(hhc/thh*100,1),17,1)
> rownames(hhoc)<-c("01 Vientiane C.","02 Phongsaly","03 Luangnamtha","04 Oudomxay",
+ "05 Bokeo","06 Luangprabang","07 Huaphanh","08 Xayabury","09 Xiengkhuang",
+ "10 Vientiane","11 Borikhamxay","12 Khammuane","13 Savannakhet","14 Saravane",
+ "15 Sekong","16 Champasack","17 Attapeu")
> hhoc
                [,1]
01 Vientiane C. 25.2
02 Phongsaly     0.1
03 Luangnamtha   2.9
04 Oudomxay      3.2
05 Bokeo         2.6
06 Luangprabang  6.4
07 Huaphanh      2.4
08 Xayabury     11.1
09 Xiengkhuang   6.7
10 Vientiane     8.6
11 Borikhamxay  10.2
12 Khammuane     5.3
13 Savannakhet   6.0
14 Saravane      2.7
15 Sekong        1.6
16 Champasack    6.0
17 Attapeu       3.6
```

Attachments list

1. Questionnaire forms

2. Data dictionary

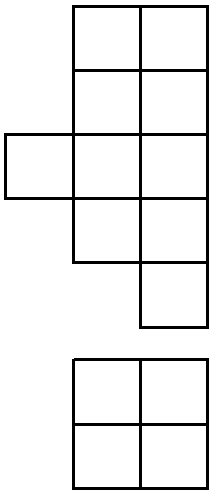
3. Item codes of expenditure and income

4. Survey report (excerpt)

Confidential

Expenditure and Consumption Survey 2007/2008

Household Questionnaire

Identification	
Province _____ District _____ Village _____ Household No. _____ EA (Urban=1; Rural with road=2; Rural without road=3) Date 0f interview _____ Month of interview _____	

Respondent's name _____

Interviewer's name _____

Field supervisor;s name _____

Office supervisor's name _____

NATIONAL STATISTICAL CENTRE

I. Household composition (First week)

ID CODE	1 Who usually lives in the household? ***Record all names***	2 What is (name)'s relationship to head of household? *Head of household* 1 *Spouse* 2 *Parent/parent in law* 3 *Son/daughter* 4 *Son/daughter in law* 5 *Brother/sister* 6 *Brother/sister in law* 7 *Other relatives* 8 *Non relative* 9	3 Is (name) male or female? *Male = 1* *Female=2*	4 When was (name) born? ***Probe for birth certificate or ID-card*** DAY / MONTH / YEAR	5 How old was (name) at his/her last birthday? ***Completed age*** ***(If <1 year record 00)*** YEAR	6 What is the (name)'s marital status? *Never marrie* 1 *Married* 2 *Divorced* 3 *Separated* 3 *Widowed* 4 ***For all persons younger than 10 years, record 1 directly***	7 What is (name's) ethnic origin? ***See code list***
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							

II. Parents (First week)

	1	2	3	4	5		6	7	8	9	10	
	Is the natural father of (name) living in this household?	***Copy ID code for the father***	Is the father of (name) still alive?	Did the father of (name) attend school?	What was the highest level and class he completed?		Is the natural mother of (name) living in this household?	***Copy ID code for the mother***	Is the mother of (name) still alive?	Did the mother of (name) attend school?	What was the highest level and class she completed?	
I D C O D E					LEVEL	CLASS					LEVEL	CLASS
					Primary =1	*1 - 5*					*Primary =1*	*1 - 5*
		Then go to 6			*Lower secondary =2*	*1 - 3*		***Then go to next person***			*Lower secondary =2*	*1 - 3*
				Yes = 1	*Upper secondary =3*	*1 - 3*					*Upper secondary =3*	*1 - 3*
				No = 2	*Vocational train. =4*	*1 - 3*					*Vocational train. =4*	*1 - 3*
				>>6	*University/*				*Yes = 1*	*Yes = 1*	*University/*	
	Yes = 1		*Yes = 1*	*DK = 3*	*institute =5*	*1 - 5*	*Yes = 1*		*No = 2*	*No = 2>Next person*	*institute =5*	*1 - 5*
	No = 2>>3		*No = 2*	>>6	*Don't know=6*		*No = 2 >>8*		***>>Next***	*DK = 3 >Next person*	*Don't know=DK*	
		ID CODE	>>6		LEVEL	CLASS		ID CODE	***person***		LEVEL	CLASS
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												

III. Education, cont.(First week)

List the ID codes of all household members that are enrolled in school now or were enrolled last school year

If no household members enrolled in school now or last school year go to IV.

Ask Question 14- 26 for all household members enrolled in school now or last school-year.

ID CODE	14								15	16	17
	How much has your household spent on NAME's education in this/the last school year for: ***Include monetary value of in-kind payments*** ***After asking individual amounts, calculate total and ask:*** "So, altogether you have spent ___ kip on (NAME's) education in this/the last school-year. Is that right? ***Probe and reconcile.***								Did any people who are not members of the household, such as relatives or friends, pay any of NAME'S educational expenses during the last school year? *Yes = 1* *No = 2* ***If No >>17***	How much money did this person (these persons) pay for NAME'S educational expenses during the last school year?	How far away from NAME'S home is the school NAME has attended most recently? ***If less than one kilometer put zero***
	A. Tuition and other required fees?	B. Parent association fees?	C. Uniforms and other clothing?	D. Textbooks?	E. Other education materials (exercise books, pens, etc.)	F. Meals, transportation and or lodging?	G. Other expenses (extra classes, optional fees)?	H. TOTAL			
	AMOUNTS IN KIP									AMOUNT IN KIP	KILOMETERS

III. Education, cont.

ID CODE	18		19	20	21	22	23	24	25	26
	How long does it take NAME to go to school?		How does NAME go t school?	Does NAME have complete set of textbooks for his/her use?	Does NAME share these textbooks with other students or are they for his/her exclusive use?	How many hours of homework does NAME do in a typical week?	Is NAME currently attending school?	How many days has NAME'S school been open in the past 7 days?	How many days has NAME attended school in the past 7 days?	If NAME was absent any days, what was the reason?
			Walk 1							
			Bicycle 2							
			Motorcycle 3							
			Car 4							*Agricultural work=1*
			Tuc-tuc 5					***If 0 days***		*Work at house/home =2*
			Bus 6				*Yes = 1*	***>> next***		*Other work =3*
			Boat 7	*Yes, complete=1*	*Shared = 1*		*No = 2*	***person***	*If no absence*	*Illness = 4*
			Animal 8	*No, only some=2*	*Exclusive*		***If NO >>***		*>>next person*	*Family illness/death=5*
			Other, specify 9	*No, none = 3*	*use = 2*		***next***			*Other (specify…) 6*
	HOURS	MINUTES	……			HOURS	***person***	DAYS	DAYS	

III. Education (First week)

	1	2	3	4	5	6	7		8	9	10	11		12
ID CODE	Can you read a letter? *Yes, without difficulty=1* *Yes, but with difficulty=2* *No =3*	Can you write a letter? *Yes, without difficulty=1* *Yes, but with difficulty=2* *No =3*	Have you ever been to school? *Yes = 1* ***>> 5*** *No = 2*	Which is the main reason why have you never attended school? *Too young = 1* *Too expensive = 2* *No interest = 3* *Had to work = 4* *School too far = 5* *No teachers/ supplies = 6* *Illness = 7* *Language = 8* *Other, specify…….. 9* ***Go to next person***	Did you attend preschool (at least one year) before beginning primary school? *Yes = 1* *No = 2*	Are you enrolled in school now? *Yes = 1* *Yes, but on vacation = 2* *No = 3 >> **9***	What level and class are you enrolled in now or were you enrolled in the last school- LEVEL / CLASS *Preprimary =0 — 0* *Primary =1 — 1 - 5* *Lower secondary=2 — 1 - 3* *Upper secondary=3 — 1 - 3* *Vocational train.=4 — 1 - 3* *University/ institute =5 — 1 - 5*		What type of school are you attending/ did you attend last school-year? *Public = 1* *Private= 2* *Other = 3* ***Go to 10***	***If 12 years and above - >> 10*** ***If 6 - 11 years:*** Why are you not enrolled in school now? *Completed studies= 1* *Too old = 2* *Too expensive = 3* *No interest = 4* *Work = 5* *School too far = 6* *No teachers/ supplies = 7* *Illness = 8* *Language = 9* *Other, specify…….. 10*	In what year did you begin Class 1 of Primary School? YEAR	What is the highest level and class you have completed in school? LEVEL / CLASS *Preprimary =0 — 0* *Primary =1 — 1 - 5* *Lower secondary=2 — 1 - 3* *Upper secondary=3 — 1 - 3* *Vocational train.=4 — 1 - 3* *University/ institute =5 — 1 - 5*		***If 12 - 24 years and only Primary school*** Why were you not enrolled in school after Primary school? *Too expensive = 1* *No interest = 2* *Work = 3* *School too far = 4* *No teachers/ supplies = 5* *Illness = 6* *Language = 7* *Other, specify…….. 8*
							LEVEL	CLASS			YEAR	LEVEL	CLASS	

IV. Labour Force (First week)

IV.1. Labour force participation last seven days

All persons 10 years and older

Name ***(Transfer names of all persons in the household 10 years and above)***	ID Code	1 During the past 7 days have you worked on your own account or in a business belonging to you or someone in your household? *Yes = 1* *No = 2*	2 During the past 7 days, have you performed any activity on a farm operated by you or a member of your household? *Yes = 1* *No = 2*	3 During the past 7 days, have you performed any activity for someone who is not living in this household, for example an enterprise, the public sector or any other individual? *Yes = 1* *No = 2*	4 CHECK THE ANSWERS TO Q 1, Q2 AND Q3 *Any Yes = 1* ***>>IV.2*** *No = 2*	5 Do you have a permanent job even though you did not work in the last 7 days? *Yes = 1* ***>>IV.2*** *No = 2*	6 Have you looked for work in the last 7 days? *Yes = 1* ***>>IV.2*** *No = 2*	7 What is the main reason you did not look for work in the last 7 days? Student = 1 Housewife/childcare = 2 Too old/retired = 3 Handicapped = 4 Sick/family illness = 5 Waiting for reply/recall by employer = 6 Waiting for busy season = 7 Other, specify…… …… = 8

IV2. Overview of work in the last 7 days ***Persons 10 years and older***

I would like to ask some questions about the activities you performed in the last 7 days, whether on a farm, in a household business, or for someone else
Exclude own housework (cleaning, washing, childcare etc)

Name	ID CODE	1 What did you do? *USE ONE ACTIVITY PER LINE. REPEAT THE ID FOR ALL THE DIFFERENT ACTIVITIES DONE BY THE SAME PERSON*		2 For how many days in the last 7 days did you do this activity?	3 For how many hours in total in the last 7 days did you do this activity?
		WRITTEN DESCRIPTION	*INDUSTRY CODE*	*DAYS PER WEEK*	*HOURS IN THE WEEK*

IV3. Main activities in the past twelve months

All persons 10 years and older

Name	ID CODE	1 Which of the following activities were you engaged in during the last 12 months? Think only of the ***main activity*** you were engaged in each month							2 Have you been a Buddhist munk/nun in the last 12 months?	3 How many days did you spend in temple as munk/nun in the last 12 months?
		A. Working, but ***not in farming*** (as paid employee, employer, self-employed or unpaid family worker)	B. Working in ***farming***, incl fishing and forestry.	C. Not working but looking for work.	D. Not working because of studies	E. Working mainly with household duties (homemaker/ childcare)	F. Not working because retired or too old	G. Not working because disabled or long-term ill		
		No = 0 *Yes = No. of months*	*No = 0* *Yes = No. of months*	*No = 0* *Yes = No. of months*	*No = 0* *Yes = No. of months*	*No = 0* *Yes = No. of months*	*No = 0* *Yes = No. of months*	*No = 0* *Yes = No. of months*	*Yes = 1* *No = 2*	DAYS

V. Victimization (First week)

1	2	3	4	5
Has any member of this household suffered from theft, burglary or robbery in the last 12 months? *Yes = 1* *No = 2,* ***go to 6***	Was it …. ***Yes*** ***No*** Burglary? *1* *2* Robbery? *1* *2* Theft? *1* *2*	Was the/any of the event(s) reported to some authority? *Yes = 1* *No = 2,* ***go to 6***	Which authority did you report the event(s) to? *Village leader = 1* *Police = 2* *Other = 3*	Did the/any event go to court procedure? *Yes = 1* *No = 2*

6	7	8	9	10	11	12
Has any member of this household suffered from violence in the last 12 months? *Yes = 1* *No = 2,* ***go to VI second week)***	What type(s) of violence did the person(s) suffer from? *Physical violence = 1* *Threats = 2* *Other = 3*	Was/were the victim(s) men or women? Men =1 Women =2 Both =3	Was any event(s) reported to some authority? *Yes = 1* *No = 2 >>12*	Which authority did you report the event(s) to? *If several events record only the last event.* *Village leader = 1* *Police = 2* *Other = 3*	Did any event go to court procedure? *Yes = 1* *No = 2*	Was this act of violence committed by some stranger or by someone known to you? *Stranger = 1* *Known person = 2*

VI. Nutrition **(Second week)**

Ask about all persons

No.	*Question*	*Alternative answer*	*Person's ID code and name*														
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		Transfer names of persons															
1	How much glutinuous rice did you eat yesterday?	For breakfast	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Show the balls and enter number of balls. If a person	For lunch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	didn't eat rice, enter "0" for that meal.	For dinner	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Enter "99" if data is not available for a person	*TOTAL*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	How much ordinary rice did you eat yesterday?	For breakfast	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Show the balls and enter number of balls. If a person	For lunch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	didn't eat rice, enter "0" for that meal	For dinner	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Enter "99" if data is not available for a person.	*TOTAL*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	How much meat and fish does the household usually consume per week?	KG per week			MEAT				FISH				*Definition of meat : meat from livestock, poultry, frog, snake, birds, etc.*				
4	How much vegetables and fruits does the household usually consume per week?	KG per week			VEGETABLES				FRUITS				*Definition : a palm is approximately 50 grams*				

VIII. Household possession of durables (Second week) Ask for each durable.

1				2	1 (CONT.)				2 (CONT.)
Which of the following goods does this household have access to or own?				If you wanted to sell this/these (ITEM/S) that you own today how much would you receive?	Which of the following goods does this household have acces to or own?				If you wanted to sell this/these (ITEM/S) that you own today how much would you receive?
ID	***Item***	Access to, but do not own How many?	Own How many?	***Amount in KIP***	**ID**	***Item***	Access to, but do not own How many?	Own How many?	***Amount in KIP***
1	Plots of land				17	Agr. equipment			
2	Buildings business				18	Tools small and large			
3	Buildings agriculture				19	Boat			
	Transport equipment				20	Fishing net			
4	Vehicle (Car, Van ..-.)				21	Cart			
5	Motor cycle					**TV, radio, phones**			
6	Bicycle				22	Television			
7	Tuk-tuk				23	Radio/ VCD, etc			
	House equipment				24	Telephone			
8	Refrigerator/freezer				25	Mobile phone			
9	Sewing machine				26	Camera			
10	Washing machine					**Other goods**			
11	Vacuum cleaner				27	Satellite disc/connection			
12	Electric rice cooker				18	Computer			
13	Steam rice cooker				29	Air conditioner			
14	Food processor				30	Jewelry			
	Agriculture/businesses				31	Mosquito net			
15	Two-wheeled tractor					Other goods (Specify) ..			
16	Four-wheeled tractor					..-..-..-..-..-..-..-..-..-..-.-			

IX. Housing conditions (Second week)

1	2	3		4	5	6		7	7b
What is the tenure status of this household? *Owner/purchaser = 1* *Tenant = 2* *In tied accomm. = 3* *Other, specify = 4*	If someone wanted to rent a house like this one how much would she/he have to pay in rent for one year?	What is the major construction material external walls? *Brick =1* *Concrete =2* *Unbaked brick =3* *Wood = 4* *Bamboo = 5* *Tin = 6* *Mud = 7* *Other, specify = 8*		What is the major material of the roof? *Concrete =1* *Wood = 2* *Metal sheets/zinks = 3* *Tile = 4* *Grass = 5* *Leaves = 6* *Other, specify = 7*	What is the primary material of the floor? *Marble/ceramic = 1* *Floor tile/cement = 2* *Concrete/brick = 3* *Wood = 4* *Bamboo = 5* *Earth/clay = 6* *Other, specify = 7*	How old is this dwelling? ***If more than 3 years do not require months***		What is the floor area of the house/dwelling unit occupied by your household? ***Do not count kitchen and balconys***	How many rooms are used by the household in this house/dwelling unit? ***Do not count kitchen***
	AMOUNT	FIRST	SECOND			YEARS	MONTHS	SQUARE METER	NUMBER

8	9	10	11	12	13	14	15
What is the main source of drinking water in the rainy season? *Piped water in/outside = 1* *Well/borehole protected = 2* *Well/borehole unprotected = 3* *River, dam, lake etc. = 4* *Rain water from tank/jar = 5* *Other, specify = 6*	What is the distance to the drinking water source in the rainy season? ***If in/outside house or in yard near house = 0 meter***	What is the main source of drinking water in the dry season? *Piped water in/outside = 1* *Well/borehole protected = 2* *Well/borehole unprotected = 3* *River, dam, lake etc. = 4* *Rain water from tank/jar = 5* *Other, specify = 6*	What is the distance to the drinking water source in the dry season?	What kind of latrine is mainly used? *Modern toilet = 1* *Normal toilet = 2* *Dry toilet = 3* *Other, specify = 4* *None = 5*	What kind of kitchen does this household mainly use? *Inside the house = 1* *Outside roofed = 2* *Outside unroofed = 3* *Other specify = 4*	What is the household's main source of energy for cooking? *Electricity = 1* *Paraffin = 2* *Wood = 3* *Coal = 4* *Charcoal = 5* *Sawdust = 6* *Gas = 7* *Other, specify = 8*	What is the household's main source of energy for lighting? *Electricity from public network=1* *El. from generator=2* *El. from battery=3* *Kerosene lamp=4* *Candle=5* *Other, specify = 6*
	METERS		METERS				

X. Construction activities in the past 12 months (Second week)

1 Has anybody in the household built an own new house or made an extension of existing houses concerning:

Residential building? Yes = 1 No = 2 [ ] Agricultural buildning? Yes = 1 No = 2 [ ] Business building? Yes = 1 No = 2 [ ]

All answers "No" Go to Section XI (Third week)

Construction of new house/building

1b	1c	2	3		4		5	6	7	8
House/ building number	What is the building used for? *1=Residential* *2=Agricultural* *3=Business*	What kind of construction was it? *New house =1* *Extension = 2* ***(If only 2 go* to Q11)**	In what year and month did the construction start?		In what year and month was the house/building ready for use? ***(If house not yet completed enter 00 for year and 00 for month)***		Who built the house/building? *Household members only=1* *Household members and other relatives = 2* *Household members and hired help = 3* *Contracted builder = 4* *Other = 5*	How much did you pay those who helped, hired or contracted? ***(For house still under construction include the costs up till now)***	How much did you spend for materials? ***(For house still under construction include the costs up till now)***	***If not possible to separate labour and materials*** , how much was the total costs?
			YEAR	MONTH	YEAR	MONTH		AMOUNT	AMOUNT	AMOUNT
1										
2										
3										
4										
5										

Extension works of existing house/building					
1b	9	10	11	12	13
House/ building number	If anyone in the household has put in own labour try to estimate the value of it as if you had engaged someone to do it?	For house/building not completed: What will the estimated cost be of the house completed?	How much did the building materials cost you for the extension work? ***(If not possible to separate go to Q 13)***	How much did hired helpers cost you? ***(If not possible to separate go to Q 13)***	How much was the costs of materials and and labour together?
	AMOUNT IN KIP	AMOUNT IN KIP	AMOUNT IN KIP	AMOUNT IN KIP	AMOUNT IN KIP
1					
2					
3					
4					
5					

XI. Household businesses (Third week)

Ask person in charge of business

XI.1. Establishing the existence of non-farm enterprises

1	2			3	
Over the past 12 months, has anyone in your household operated any non-agricultural business which produces goods and services (for example trade, construction, metal working, woodworking, repair work, etc.; also including processing and selling your outputs if done regurlarly? Yes = 1 No = 2 >>NEXT MODULE	What kind of business does your household operate? ***Probe to determine industrial sector in which enterprise operate***			Who is most informed about and/or in charge of day-to-day operations of the business? ***Collect the information on this page for all businesses before proceeding to part XI.2. Then complete the other parts for the first business, then the second business, etc, until all businesses are surveyed.***	
	Business ID	Full written description	Code ISIC	Name	ID code
	1				
	2				
	3				
	4				
	5				
	6				

XI.2. Business operations

Business Code	1		2	3	4	5	6	7
	For how long has the business been in operation?		Where do you operate the business? *Home, inside/outside the residence* 1 *Industrial site* 2 *Traditional market* 3 *Shop* 4 *Roadside* 5 *Other fixed place* 6 *Mobile* 7	How many people does this business now employ who are not members of this household?	Are wages and salaries paid to members of households working in the business? Yes = 1 No = 2	How many members of the household usually work in this business?	During the past 12 months, for how many months was the business in operation?	In an average sales month, what is your level of sales per month?
	YEARS	MONTHS		NUMBER		NUMBER	MONTHS	KIP
1								
2								
3								
4								
5								
6								

XII. Agriculture (Third week)

XII: 1. Operated land

1. Does any member of your household in the last completed agriculture season owned or leased any agricultural land, forest or grazing land?

1 = Yes
2 = No
If No >>Part XII: 5

PLOT CODE	2 Please tell me about each plot of land that members of your household owned or leased in the last ***completed*** season? All plots you own or lease. NAME OF PLOT OR NUMBER	3 What is the area of the plot? *Unit code:* *1 = Square meter* *2 = Hectares* AMOUNT / UNIT CODE	4 What kind of land is this? *1 = Arable land for temporary crops* *2 = Fallow land* *3 =Land for permanent crops* *4 = Grazing land* *5 = Forest land*	5 If plot was fallow last season, what was the reason? *1 = Crop rotation* *2 = Lack of inputs* *3 = Economic profitability* *4 =Mines or other risks*	6 What type of plot is this? *1= Wet season plot* *2=Dry season plot* *3= Both wet and dry season plot*	7 Was this plot irrigated during the last dry season? *1 = Yes* *2 = No*	8 Is this plot owned or leased? *1 = Owned or free disposal* *2 = Leased*
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

XII: 2. Crops planted and harvested last completed wet and dry seasons ***Circle***

Crop Code	Crop name	*Grow for sale*	*Grow for own use*	*Do not grow*	Crop Code	Crop name	*Grow for sale*	*Grow for own use*	*Do not grow*
1	Glutinous rice	1	2	3	31	Loofah	1	2	3
2	Ordinary rice	1	2	3	32	Pumpkin	1	2	3
3	Corn/maize	1	2	3	33	Other fruit-bearing vegetables	1	2	3
4	Other cereals	1	2	3	34	Garlic	1	2	3
5	Sweet potatoes	1	2	3	35	Onion	1	2	3
6	Cassava	1	2	3	36	Beans	1	2	3
7	Yam	1	2	3	37	Other vegetables	1	2	3
8	Potatoes	1	2	3	38	Sugar cane	1	2	3
9	Other roots and tubers	1	2	3	39	Groundnut	1	2	3
10	Mungbean	1	2	3	40	Soybean	1	2	3
11	Cowpea	1	2	3	41	Sesame	1	2	3
12	Other legumes	1	2	3	42	Other oilseed crops	1	2	3
13	Cabbage	1	2	3	43	Cotton	1	2	3
14	Chinese cabbage	1	2	3	44	Tobacco	1	2	3
15	Water convolvulus	1	2	3	45	Other industrialized crops	1	2	3
16	Mustard	1	2	3	46	Coffee	1	2	3
17	Lettuce	1	2	3	47	Tea	1	2	3
18	Mint	1	2	3	48	Cocunut	1	2	3
19	Paksi	1	2	3	49	Ginger	1	2	3
20	Coriander	1	2	3	50	Cardamon	1	2	3
21	Peo	1	2	3	51	Rubber	1	2	3
22	Basil	1	2	3	52	Citronella	1	2	3
23	Parthomepey	1	2	3	53	Mulberry	1	2	3
24	Chun chai	1	2	3	54	Areca	1	2	3
25	Other leafy vegetables	1	2	3	55	Other industrial crops	1	2	3
26	Water melon	1	2	3	56	Orange	1	2	3
27	Chilli	1	2	3	57	Lemon	1	2	3
28	Cucumber	1	2	3	58	Other citrus fruit	1	2	3
29	Eggplant	1	2	3					
30	Wax gourd	1	2	3					

XII: 2. Crops planted and harvested last completed wet and dry seasons (cont.)

Crop Code	Crop name	*Grow for sale*	*Grow for own use*	*Do not grow*
59	Cherry	1	2	3
60	Peach	1	2	3
61	Gooseberry	1	2	3
62	Avocado	1	2	3
63	Banana	1	2	3
64	Custard apple	1	2	3
65	Guava	1	2	3
66	Mango	1	2	3
67	Pineapple	1	2	3
68	Tamarind	1	2	3
69	Lychee	1	2	3
70	Longan	1	2	3
71	Jujube	1	2	3
72	Durian	1	2	3
73	Jackfruit	1	2	3
74	Sour berry	1	2	3
75	Gorambola	1	2	3
76	Santol	1	2	3
	Other permanent crops,			
77	specify:	1	2	3
78		1	2	3
79		1	2	3
80		1	2	3

XII: 3. Crops planted and harvested in the last completed season [147]

PLOT CODE: 1

Now some questions about what was planted and harvested in your plot(s) in last completed season.

Record:

Name and code of crop per plot

Record all crops circled with 1 or 2 in XII: 2

Circle if last completed season is dry or wet:

Dry = 1
Wet = 2

CROP NAME	CROP CODE	Area planted (1) HECTARE	Area harvested (2) HECTARE	Production in kg (3) KG	Yield (kilogram per hectar) (3/2) KG/HA
Last season:					
Glutinous rice	1				
Ordinary rice	2				

XII: 3. Crops planted and harvested in next to last season.

148

PLOT CODE						
P	2					
L	Now some questions about what was planted and harvested in your plot(s) in next to last season.					
O						
T	***Record:***		***Circle if last completed season is dry or wet:***			*Dry = 1* *Wet = 2*
	Name and code of crop per plot					
C	***Record all crops circled with 1 or 2 in XII: 2***		Area planted	Area harvested	Production in kg	Yield (kilogram per hectar
O						
D		CROP	1	2	3	3/2
E	CROP NAME	CODE	HECTARE	HECTARE	KG	KG/HA
	Next to last season:					
	Glutinous rice	1				
	Ordinary rice	2				

XII: 4. Disposition of crops

Crop Code	1	2	3		3B	4	5		6	7	
	Crops last season: *Only record crops from XII:2. = 1 or 2*	Have you sold any (…..) ? *Yes = 1* *No = 2 >> 4*	If sold: How much?		What was the price per kilo you got from the sale?	Was any (…..) lost to insects, rodents or some other problem? *Yes = 1* *No = 2 >> 6*	If lost: How much?		Was any (…..) given to pay laborers or make other payments? *Yes = 1* *No = 2 >> 8*	If given: How much?	
	CROP NAME		KG		Price per kilo		KG			KG	
1	Glutinous rice										
2	Ordinary rice										

XII: 4. Disposition of crops (cont.)

Crop Code		8	9		10	11		12	13	
	Crops last season:	Have you used any (…..) for animal feed?	If animal feed: How much?		Was any (…..) used to produce processed food for sale?	If processed: How much?		Was any (…..) given away as gifts?	If gift: How much?	
	Only record crops from XII:2. = 1 or 2	*Yes = 1 No = 2 >> 10*			*Yes = 1 No = 2 >> 12*			*Yes = 1 No = 2 >> 14*		
	CROP NAME		KG			KG			KG	
1	Glutinous rice									
2	Ordinary rice									

XII: 4. Disposition of crops (cont.)

Crop Code		14	15		16	17	
	Crops last season:	Have you used	If seed:		Do you have any (…..)	If stored:	
		any (…..) for	How much?		still being stored	How much?	
		seed?			by your household?		
	Only record crops from						
	XII:2. = 1or 2	*Yes = 1*			*Yes = 1*		
		No = 2 >> 16			*No = 2 >> Next crop*		
	CROP NAME		KG			KG	
1	Glutinous rice						
2	Ordinary rice						

XII: 5. Livestock

1 Has this household raised any livestock during the past 12 months?

1 = Yes
2 = No > XII: 6

		Young livestock		Adult livestock				
		2	3	4	5	6	7	8
Code	Name of livestock	How many young (animals) is this household now raising?	What is the total value of all your young (….) at the current price?	How many adult (animals) is this household now raising?	What is the total value of all your adult (….) at the current price?	How many in total (….) did you own 12 months ago? (=this month last year)	What was the value of all the (…) owned by your household 12 months ago?	How many (…) did you sell during the last 12 months?
		NUMBER	VALUE	NUMBER	VALUE	NUMBER	VALUE	NUMBER
1	Cattle							
2	Buffaloes							
3	Pigs, local							
4	Pigs,comm.							
5	Goats							
6	Horse							
7	Elephants							
8	Sheep							
9	Other							

XII: 5. Livestock (cont.)

		9	10	11	12	13	14
Code	Name of livestock	How much has your household received from sales of (….) during the last 12 months?	How many (….) did your household buy during the past 12 months?	How much did your household pay to buy (…) in the past 12 months?	What was the value of (….) newly born or received as gift during the past 12 months?	What was the value of animals lost or stolen, given as gifts or died during the past 12 months?	What is the value of (….) slaughtered and consumed by your household during the past 12 months?
		VALUE	NUMBER	VALUE	VALUE	VALUE	VALUE
1	Cattle						
2	Buffaloes						
3	Pigs, local						
4	Pigs,comm.						
5	Goats						
6	Horse						
7	Elephants						
8	Sheep						
9	Other						

XII: 6. Poultry

1 Has this household raised any POULTRY during the past 4 weeks? *1 = Yes* *2 = No* ☐

If No go to XII: 7

Code	Name of poultry	2 How many (….) is this household now raising? NUMBER	3 What is the total value of all your (…..) at the current price? TOTAL VALUE	4 How many in total (….) did you sell during past 4 weeks? NUMBER	5 How much has your household received from sales of (….) during past 4 weeks? TOTAL SALES	6 How many (…) did your household buy during past 4 weeks? NUMBER	7 How much did your household pay to buy (….) during past 4 weeks? TOTAL PRICE
1	Local chicken						
2	Commercial chicken						
3	Turkeys						
4	small breed						
5	large breed						
6	Geese						
7	Other						

XII: 6. Poultry (cont.)

Code	Name of poultry	8 How many (….) did your household receive as gift during the past 4 weeks? NUMBER	9 How many (….) did your household give away during the past 4 weeks? NUMBER	10 How many (….) have been lost, stolen or died during the past 4 weeks? NUMBER	11 How much have your household received from sales of poultry products (eggs….) during the past 4 weeks? TOTAL SALES
1	Local chicken				
2	Commercial chicken				
3	Turkeys				
4	small breed				
5	large breed				
6	Geese				
7	Other				

XII: 7. Fertilizers and Insecticides

1	2
In the past 12 months did your household use any chemcial fertilizers on your land?	In the past 12 months did your household use any insecticides or pesticides on your land?
Yes = 1	*Yes = 1*
No = 2	*No = 2*

XII: 8 Fishery

1 Does this household have any fish culture or is engaged in fishing? *Yes = 1* *No = 2* ☐

If no go to XII: 9

2			3	4			5
What types of fish culture? Are there ……	***Yes***	***No***	In the last 12 months, did any members of this household do any uncultured fishing?	Was the fishing in ……..	***Yes***	***No***	How much has your household received from sales of fish during past 4 weeks?
1 Rice field?	*1*	*2*		1 In rivers?	*1*	*2*	
2 Pond?	*1*	*2*		2 In lakes, reservoirs?	*1*	*2*	
3 Cage?	*1*	*2*		3 In swamps, seasonal			
4 Integrated pond?	*1*	*2*	*Yes =1*	floodplain?	*1*	*2*	
5 Community fish?	*1*	*2*	*No =2 >> 5*	4 In rice field?	*1*	*2*	
6 Fish seed production?	*1*	*2*		5 Other places? *Specify:*	*1*	*2*	
7 Other types? *Specify:*	*1*	*2*					Total sales

XII: 9. Forestry

1	2	3			4	5			6	7
Do you own any forest?	In the last 12 months, did you exploit this forest?	Did you from your own forest in the last 12 months obtain …..	***Yes***	***No***	In the last 12 months, did you exploit the forest suurounding your village? (not own forest)	Have you from this forest in the last 12 months gathered …...	***Yes***	***No***	How much has your household received from sales of forest products during past 4 weeks?	How much has your household received from sales of animals hunted in the forest during past 4 weeks?
		1 Timber	*1*	*2*		*1 Timber*	*1*	*2*		
		2 Fuel wood	*1*	*2*		*2 Fuel wood*	*1*	*2*		
1 = Yes	*Yes = 1*	*3 Bamboo*	*1*	*2*	*Yes = 1*	*3 Bamboo*	*1*	*2*		
2 = No >>4	*No = 2>>4*				*No = 2>>XIII (Last week)*	*4 Tuber*	*1*	*2*		
						5 Other forest vegetables	*1*	*2*		
									Total sales	Total sales
☐	☐				☐				☐	☐

XIII. Health (Last week)

		1	2	3	4	5	6			7	8
Transfer name and ID code	ID CODE	How would you evaluate your health?	Compared with others of your age, would you say that your health ***(Read out answers to respondent)***	Do you have any longterm illness, disability or have permanent mark from an accident?	Does this affect your ability to work/go to school or conduct other daily activities?	Did you have any health complaints in the past 4 weeks? (for example, a cold/cough, diarrhoea, back pain, fever, stomach ache, headache, etc.)	What health complaints did you have?			Did your health complaints disrupt work, school or daily activities?	During the past 4 weeks, how many days with your primary daily activities were missed due to poor health?
		Very good = 1 *Good = 2* *Average = 3* *Bad = 4* *Very bad = 5*	*Much better = 1* *Somewhat better = 2* *About the same = 3* *Somewhat worse = 4* *Much worse 5*	*Yes = 1* *No = 2* ***(If No>>5)***	*Yes = 1* *No = 2*	*Yes = 1* *No = 2* ***(If No>>20)***	*Stomach ache/ disorder =1* *Cough/cold =2* *Back pain =3* *Headache =4* *Toothache =5* *Ear pain =6* *Fever =7* *Diarrhoea =8* *Accident =9* *Malaria =10* *Other, specify… =11*	FIRST	SECOND	THIRD	*Yes = 1* *No = 2* ***(If No>>9)***	DAYS

----------Seeking health care----------				----------Facilities----------	
9	10	11		12 →	13
During the past 4 weeks, did you seek treatment at a health facility of health provider for your health problem? *Yes = 1* ***(If Yes >>11)*** *No = 2*	Why did you not get any treatment at a health facility or health provider for your health problems? *Not serious enough/ wanted to wait =1* *Difficult to get there =2* *Too expensive =3* *Not good quality =4* *No cure possible =5* *Other, specify……. = 6* ***Go to Q. 17***	What kind of health care facility or provider did you visit in the past 4 weeks? *Central hospital =1* *Regional hospital =2* *Prov/distr. Hospital =3* *Public health center =4* *Private health clinic =5* *Hospital/clinic abroad = 6* *Private doctor =7* *Private nurse/midwife=8* *Commune health volunteer=9* *Trad. Healer or TBAs =10* *Other, specify……= 11*		How many times did you visit a health care facility in the past 4 weeks to obtain outpatient care? ***Do not include visits to private nurses, doctors or trained midwifes*** ***If none write 0 and >> 14***	What kind of health care **facility** did you visit most recently in the past 4 weeks? *Central hospital = 1* *Regional hospital =2* *Prov./distr. hospital = 3* *Public health center = 4* *Private health clinic =5* *Hospital/clinic abroad=6* *Other, specify…..= 7*
		FIRST	SECOND	TIMES	

----------Modern providers----------		Traditional	----------Medicines----------				
14	15	16	17 →	18			19 →
How many times did you visit a private **doctor or nurse, commune health volunteer or trained midwife in** the past 4 weeks to obtain health care? ***If none write 0 and >>16***	What kind of health care provider did you visit most recently in the past 4 weeks? *Private doctor =1* *Private nurse =2* *Midwife =3* *Comm. health volunteer= 4* *Other…… =5*	How many times did you visit a tradtional health practitioner or traditional birth attendant in the past 4 weeks to obtain health care? ***If none write "0"***	Did you purchase any medicine in the past 4 weeks on your own without a prescription to treat your health problems or general health? *Yes = 1* *No = 2* ***(If No>>20)***	What type of medicine did you buy? *Antibiotics =1* *Anti-Malaria = 2* *Other modern medicines = 3* *Traditional medicines= 4* *Other, specify = 5* ***List in order of importance***			Where did you purchase medicine? *Pharmacy =1* *Kiosk = 2* *Other, specify = 3*
TIMES		TIMES		FIRST	SECOND	THIRD	

----------Hospital stay----------				----------Cost for hospital stay----------		
20	21	22	23	24	25	26
During the **past 12 months,** have you been hospitalized - that is stayed one or more nights in a hospital/clinic? *Yes = 1* *No = 2* ***(If No> 26)***	How many times were you hospitalized in the past 12 months?	Let's talk about your most recent hospital stay. In what type of hospital/clinic did you stay? *Central hospital = 1* *Regional hospital =2* *Prov./distr. hospital = 3* *Public health center = 4* *Private health clinic =5* *Hospital/clinic abroad=6* *Other, specify…..…= 7*	How many days did you spend in hospital in your most recent visit?	How much did you pay or expect to pay, either in money or in kind, for all costs associated with this most recent hospital stay?	How much did you pay, either in money or in kind , in transport costs for this most recent hospital stay? ***Please include the transportation costs of anyone who accompanied you***	Have you had to borrow money from outside the family, or sell possessions or livestock to pay for your health expenses in the past 12 months? *Yes = 1* *No = 2* >> ***Next person***
	TIMES		DAYS	AMOUNT IN KIP	AMOUNT IN KIP	

XIV. Households' purchase and selling of durables during the last 12 month (Last week)

1 Has anybody in the household during the last 12 months purchased any (…….)? RECORD TOTAL AMOUNT

Item	Item No.	Bought		Last 12 months KIP
		Yes	***No***	
Furniture				
Beds	201	1	2	
Tables and chairs	202	1	2	
Cupboards	203	1	2	
Dining room suites	204	1	2	
Lounge suites	205	1	2	
Desks and sideboards	206	1	2	
Stools and benches	207	1	2	
Carpets	218	1	2	
Lamps and pictures	223	1	2	
Others, specify	208	1	2	
Repair of furniture	209	1	2	
Household appliances				
Stove gas or electric	230	1	2	
Refrigerator/deep freezer	231	1	2	
Iron	232	1	2	
Air conditioner	233	1	2	
Electric fan	234	1	2	

Item	Item No.	Bought		Last 12 months KIP
		Yes	***No***	
Sewing machine	235	1	2	
Washing machine	236	1	2	
Other, specify	237	1	2	
Repair of household appliances	238	1	2	
Transport equipment (private)				
Motor cars and vans	269	1	2	
Motor cycles	270	1	2	
Bicycles	271	1	2	
Other, specify	272	1	2	
Watches and jewelry				
Watches	342	1	2	
Jewelry, rings, precious stones	343	1	2	
Repair of such items	344	1	2	
Tickets on airlines				
Tickets on domestic airlines	284	1	2	
Tickets on internat.airlines	285	1	2	
Currency spent abroad (in KIP)	356	1	2	

1 Has anybody in the household during the last 12 months purchased any (…….)? RECORD TOTAL AMOUNT

Item	Item No.	Bought		Last 12 months
		Yes	***No***	KIP
Radio, TV, camera, etc.				
Radio or radio cassettes	292	1	2	
Television sets	293	1	2	
Parabola antenna	294	1	2	
Video recorders	295	1	2	
Cameras	296	1	2	
Musical instruments	297	1	2	
Computer and computer				
equipment	299	1	2	
Cellular phone (handsets)	298	1	2	
Other equipment, specify	304	1	2	
Repair of such items	306			

2 Has anybody in the household bought any durable in the past 12 months for agriculture or businesses?

Item	Item No.	Last 12 months
		KIP
Specify		

3 Has anybody during the last 12 months sold any durable goods such as furniture, transport equipment, jewelry, radio, TV, etc.?

Item	Item No.	Last 12 months
		KIP
Specify		

4 Has anybody in the last 12 months sold any semi-durable goods such as clothes, footwear, utensils, textiles, furnishing, tyres, etc.?

Item	Item No.	Last 12 months
		KIP
Specify		

5 Has anybody in the household sold any durable in the past 12 months for agriculture or businesses?

Item	Item No.	Last 12 months
		KIP
Specify		

XV. Income and transfers (Last week)

1 Has anyone in your household during the last month received any income, transfer or remittances in cash or in kind? Which person and how much?

Name	ID Code	**Main income** *Do **NOT** include income from agricultural production or household business*			**Property income**				**Transfer and other benefits**					
		Wages, salaries in cash	Social security	Wages, salaries in kind	Interest and royalties	Dividends	Other rent	Land rent	Pension and life insurance	Remittance/ gifts in cash fr Laos	Remittance/ gifts in cash fr abroad	Remittance/ gifts in kind fr Laos	Remittance/ gifts in kind fr abroad	Other current tranfers Specify……
Item nr		800	801	802	803	804	805	806	807	808	809	810	811	812
		Amount in KIP												

XVI. Household's borrowing and lending

XVI 1. Borrowing

1 Do any members of your household owe money or goods to anyone? *Yes = 1* ☐

No = 2

If 2 >> XVI.2

	2	3	4	5	*6*	7	8	9	
L	From whom was	How much money	Why did members of your household	Was there	What kind of	Is there any rate	What is the	When must	
o	the borrowing	have household	have to borrow money or goods?	any security	security?	of interest for the	rate of	the debt be	
a	made?	members	*1 = Working capital*	provided for		loan?	interest?	paid back?	
n	Neighbour =1	borrowed?	*2 = Investments*	the loan?	*Land = 1*				
	Friend=2	(IF THE LOAN IS IN	*3 = Repay loan*		*House = 2*		%	(IF NO TIME	
o	Mon. lender = 3	GOODS, INCLUDE	*4 = Relend*		*Durable = 3*		per year	RECORD	
r	Bank = 4	THE VALUE OF	*5 = Build or buy dwelling*		*Paddy = 4*			MONTH = 0	
d	Private bank = 5	THOSE GOODS)	*6 = Wedding/funeral*		*Livestock = 5*	*Yes = 1*		AND	
e	Other = 6	(USE ONE LINE FOR	*7 = Schooling*	*Yes = 1*	*Other = 6*	*No = 2*		YEAR = 0)	
r		EACH LOAN)	*8 = Buy food before harvest*	*No = 2*		*GO TO 9*			
			9 = Others, specify……..…..…...	*GO TO 7*				MONTH	YEAR
1									
2									
3									
4									

XVI 2. Lending

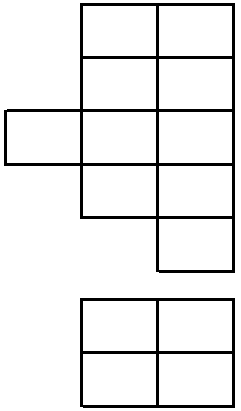
1. Has anybody in your household lent out money of goods that is not yet paid back? 1 = Yes 2 = No

Loan Order	2 How much money have household members lent to borrowers currently not paid back? (IF THE LOAN IS IN GOODS, INCLUDE THE VALUE OF THOSE GOODS) (USE ONE LINE FOR EACH LOAN)	3 Who are the borrowers? Neighbour = 1 Private person = 2 Organiation = 3	4 Is there a rate of interest specified for this loan? *1 = Yes* *2 = No* *GO TO 6*	*5* What is the rate of interest? Interest rate % per year	6 When must the debt be paid back? (IF NO TIME, RECORD MONTH = "00" AND YEAR = "00") MONTH / YEAR
1					
2					
3					
4					

Confidential

Expenditure and Consumption Survey 2007/2008

Diary DRAFT

Identification	
Province _____	
District _____ - ___	
Village _____	
Household No. _____	
EA (Urban=1; Rural=2) _____	
Date 0f interview _____	
Month of interview _____	

Respondent's name _____

Interviewer's name _____

Field supervisor;s name _____

Office supervisor's name _____

NATIONAL STATISTICAL CENTRE

Diary Sheet for Household Transactions (all expenditures, all income, all consumption of own produced food, all own produced food given away)

For household			For NSC	For household							For Enumerators		
Date	Item description	Unit of quan-tity	Code unit of quantity	Quan-tity	Value in KIP	Kind of transaction. 1 = Expenditure in cash or in kind 2 = Own consumption of own produced food 3 = Own produced food given away 4 = Income in cash or in kind (Circle code)				Bought where? (if expenditure) 1 = In Lao 2 = Abroad (Circle code)		Purpose: a = Agriculture h = Household b = Business (Circle code)		Item code
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	
						1	2	3	4	1	2	a	h	b	

Household's Diary Sheet for Household Transactions. Examples

For household			For NSC	For household						For Enumerators		
Day	Item description	Unit of quan-tity	Code unit of quantity	Quan-tity	Value in KIP	Kind of transaction. 1 = Expenditure in cash or in kind 2 = Own consumption of own produced food 3 = Own produced food given away 4 = Income in cash or in kind (Circle code)				Bought where? (if expenditure) 1 = In Lao 2 = Abroad (Circle code)	Purpose: a = Agriculture h = Household b = Business	Item code
	Bought rice glutinous	kg		5	10.000	1	2	3	4	1 2	a h b	1
	Fishing net			1	90.000	1	2	3	4	1 2	a h b	466
	Bought milk, fresh	bag		1	4.000	1	2	3	4	1 2	a h b	30
	Oranges from own garden	bag		1	8.000	1	2	3	4	1 2	a h b	136
	Lao beer bought for resale	case		5	240.000	1	2	3	4	1 2	a h b	551
	Jeans for youngest son				24.000	1	2	3	4	1 2	a h b	180
	TV bought in Thailand				2.000.000	1	2	3	4	1 2	a h b	293
	Fish caught in Mekong for own use, *clarify which*	piece		3	45.000	1	2	3	4	1 2	a h b	145
	Fresh fish bought in market	kg		1	24.000	1	2	3	4	1 2	a h b	20
	Gift in cash to monks in vat				50.000	1	2	3	4	1 2	a h b	354
	Glutinous rice given away from own produce	bag		2	200.000	1	2	3	4	1 2	a h b	156
	Ordinary rice received	kg		10	20.000	1	2	3	4	1 2	a h b	2
	Remittances from uncle in Australia				450.000	1	2	3	4	1 2	a h b	812
	Rice seed, developed (ask for that)	kg		50	150.000	1	2	3	4	1 2	a h b	452
	Carrots from own garden *(estimate the value)*	bundle		1	6.000	1	2	3	4	1 2	a h b	134
	Malaria medicine				15.000	1	2	3	4	1 2	a h b	263
	One chicken bartered with 2 kg of rice	piece		1	4.000	1	2	3	4	1 2	a h b	14
	Sold eggs, own produced, *estimate the value*	piece		5	4.000	1	2	3	4	1 2	a h b	414
	Bought meat, pork (ask to specify kind of meat)	kg		2	20.000	1	2	3	4	1 2	a h b	12
	Repair of tractor				450.000	1	2	3	4	1 2	a h b	467
	Income from car repair				300.000	1	2	3	4	1 2	a h b	506
	Income from shop during week one				7.400.000	1	2	3	4	1 2	a h b	501
	Income from shop during week two				8.600.000	1	2	3	4	1 2	a h b	501
	Income from shop during week three				5.800.000	1	2	3	4	1 2	a h b	501
	Income from shop during week four				9.600.000	1	2	3	4	1 2	a h b	501
	Beer taken from own shop				45.000	1	2	3	4	1 2	a h b	507

Attachment 2

DATA DICTIONARY OF LECS4 2007

(Provisional)

Original file: HhHouseholds

R data frame: HHB

No	Variable name	Description	Type	Response categories / Remarks
1	SerialNr	Serial number of household	C	
2	HhID	Household identification number	C	VillageID+Hhnumber (9-digit)
3	VillageID	Village identification number	C	Province+DistrictID+Village No (7-digit)
4	Province	2-digit province code at the time of sample design	C	01-18
5	DistrictID	District identification number	C	Province+District No (4-digit)
6	VillageType	VillageType	C	1.Urban 2.Rural with road 3.Rural without road
7	Hhnumber	2-digit household number within the village	C	
8	Interview_Month	Interview Month	C	1-12
9	P8	?	C	1 or 2, (Not in variable list or questionnaire)
10	P10Q1a_1	Built new or made extension: Residential building	C	1.Yes 2.No
11	P10Q1a_2	Built new or made extension: Agricultural building	C	1.Yes 2.No
12	P10Q1a_3	Built new or made extension: Business building	C	1.Yes 2.No
13	P11Q1S1	Household operated non-agricultural business	C	1.Yes 2.No
14	P12S1Q1	Owned or leased any agricultural land, forest or grazing land	C	1.Yes 2.No
15	P12S3Dry	Crop planted and harvested in last completed dry season	C	1.Yes 2.No
16	P12S3Wet	Crop planted and harvested in last completed wet season	C	1.Yes 2.No
17	P12S5Q1	Raised livestock	C	1.Yes 2.No
18	P12S6Q1	Raised poultry	C	1.Yes 2.No
19	P12S7Q1	Use any chemical fertilizers	C	1.Yes 2.No
20	P12S7Q2	Use any insecticides or pesticides	C	1.Yes 2.No
21	P12S8Q1	Have any fish culture or is engaged in fishing	C	1.Yes 2.No
22	P14S1	Purchased any durable goods and service listed in Section 1 of Part XIV during the last 12 months	C	1.Yes 2.No
23	P14S2	Bought any durable goods during the last 12 months for agriculture or businesses	C	1.Yes 2.No

24	P14S3	Sold any durable goods such as furniture, transport equipment, jewery, radio TV, etc. during the last 12 months	C	1.Yes 2.No
25	P14S4	Sold any semi-durable goods such as clothes, footwear, utensils, textiles, furnishing, tyres, etc. during the last 12 months	C	1.Yes 2.No
26	P14S5	Sold any durable goods during the last 12 months for agriculture or businesses	C	1.Yes 2.No
27	P15	Received any income, transfer or remittances in cash or in kind	C	1.Yes 2.No
28	P16S1Q1	Owe money or goods to anyone	C	1.Yes 2.No
29	P16S2Q1	Lent out money or goods that is not yet paid back	C	1.Yes 2.No
30	Male	Number of household members (male)	N	
31	Female	Number of household members (female)	N	
32	Total	Number of household members (total)	N	
33	Hhweight	Original weight variable	N	
	(The original variables as above.)			
34	Region		C	1 Vientiane M, 2 North, 3 Center, 4 South
35	New.Province	Revised	C	01 Vientiane C. 02 Phongsaly 03 Luangnamtha 04 Oudomxay 05 Bokeo 06 Luangprabang 07 Huaphanh 08 Xayabury 09 Xiengkhuang 10 Vientiane 11 Borikhamxay 12 Khammuane 13 Savannakhet 14 Saravane 15 Sekong 16 Champasack 17 Attapeu
36	IND.male	Household size from IND	N	
37	IND.female	Household size from IND	N	
38	IND.total	Household size from IND	N	
39	WT	Weight for resampled data	N	Hhweight/0.8

Original file: HhComposition
R data frame: IND

No	Variable name	Description	Type	Response categories/ Remarks
1	SerialNr	Serial number of household	C	
2	HhID	Household identification number	C	VillageID+Hhnumber (9-digit)
3	VillageID	Village identification number	C	Province+DistrictID+Village No (7-digit)
4	Province	2-digit province code at the time of sample design	C	01-18
5	DistrictID	District identification number	C	Province+District No (4-digit)
6	VillageType	VillageType	C	1.Urban 2.Rural with road 3.Rural without road
7	Hhnumber	2-digit household number within the village	C	
8	Interview_Month	Interview Month	C	1-12
9	PersID	Person identification number	C	HhID+PCode (11-digit)
10	PCode	2-digit person number within the household	C	
11	P1Q2	Relationship to head of household	C	1 Head of household 2 Spouse 3 Parent/ Parent in law 4 Son/ daughter 5 Son/ daughter in law 6 Brother/ sister 7 Brother/ sister in law 8 Other relatives 9 Non relative
12	P1Q3	Sex	C	1 Male 2 Female
13	P1Q4a	Day of birth	N	
14	P1Q4b	Month of birth	N	
15	P1Q4c	Year of birth	N	
16	P1Q5	Age	N	Completed age at last birthday. If < 1 year, record 00
17	P1Q6	Marital status	C	1 Never married 2 Married 3 Divorced 3 Separated 4 Widowed For all persons younger than 10 years, record 1 directly.
18	P1Q7	Ethnic origin	C	Code list not available
19	Hhweight	Original weight variable	N	

	(The original variables as above.)			
20	Region		C	1 Vientiane M, 2 North, 3 Center, 4 South
21	New.Province	Revised	C	01 Vientiane C. 02 Phongsaly 03 Luangnamtha 04 Oudomxay 05 Bokeo 06 Luangprabang 07 Huaphanh 08 Xayabury 09 Xiengkhuang 10 Vientiane 11 Borikhamxay 12 Khammuane 13 Savannakhet 14 Saravane 15 Sekong 16 Champasack 17 Attapeu
22	WT	Weight for resampled data	N	Hhweight/0.8

Original file: HhEducation
R data frame: EDU

No	Variable name	Description	Type	Response categories/ Remarks
1	SerialNr	Serial number of household	C	
2	HhID	Household identification number	C	VillageID+Hhnumber (9-digit)
3	VillageID	Village identification number	C	Province+DistrictID+Village No (7-digit)
4	Province	2-digit province code at the time of sample design	C	01-18
5	DistrictID	District identification number	C	Province+District No (4-digit)
6	VillageType	VillageType	C	1.Urban 2.Rural with road 3.Rural without road
7	Hhnumber	2-digit household number within the village	C	
8	Interview_Month	Interview Month	C	1-12
9	PersID	Person identification number	C	HhID+PCode (11-digit)
10	PCode	2-digit person number within the household	C	
11	P3Q1	Reading letter	C	1 Yes, withour difficulty 2 Yes, but with difficulty 3 No
12	P3Q2	Writing letter	C	1 Yes, withour difficulty 2 Yes, but with difficulty 3 No
13	P3Q3	Ever been to school	C	1 Yes 2 No
14	P3Q4	Main reason why never attended school	C	1 Too young 2 Too expensive 3 No interest 4 Had to work 5 School too far 6 No teachers/supplies 7 Illness 8 Language 9 Other, specify
15	P3Q4Other	Other reason never attended school		Description in Lao
16	P3Q5	Attended preschool before primary school	C	1 Yes 2 No
17	P3Q6	Enrolled now	C	1 Yes 2 Yes, but on vacation 3 No
18	P3Q7a	Level now or last year	C	LEVEL CLASS 0 Preprimary 0 1 Primary 1 - 5 2 Lower secondary 1 - 3 3 Upper secondary 1 - 3 4 Vocational train. 1 - 3 5 University/institute 1 - 5
19	P3Q7b	Class now or last year	C	
20	P3Q8	Type of school attending/attended last school year	C	1 Public 2 Private 3 Other
21	P3Q8Other	Type of school: Other		Description in Lao

22	P3Q9	Why not enrolled in school now (For children aged 6-11)	C	1 Completed studies 2 Too old 3 Too expensive 4 No interest 5 Work 6 School too far 7 No teachers/supplies 7 Illness 8 Language 9 Other, specify
23	P3Q9Other	Why not enrolled in school now: Other		Description in Lao
24	P3Q10	Year at the beginning of Class 1 of Primary school (yyyy)	N	
25	P3Q11a	Highest level completed	C	LEVEL CLASS 0 Preprimary 0 1 Primary 1 - 5 2 Lower secondary 1 - 3 3 Upper secondary 1 - 3 4 Vocational train. 1 - 3 5 University/institute 1 - 5
26	P3Q11b	Highest class completed	C	
27	P3Q12	Why not enrolled after Primary school (For those aged 12-24 and only completed Primary school)	C	1 Too young 2 Too expensive 3 No interest 4 Had to work 5 School too far 6 No teachers/supplies 7 Illness 8 Language 9 Other, specify
28	P3Q12Other	Why not enrolled after Primary school: Other		Description in Lao
	(For those aged 14-26 enrolled in school now or last school year) How much has your household spent on NAME's education in this/the last school year? Include monetary value of in-kind payments. (Amount in Kip)			
29	P3Q14a	Tuition and other required fees	N	
30	P3Q14b	Parent association fees	N	
31	P3Q14c	Uniforms and other clothing	N	
32	P3Q14d	Textbooks	N	
33	P3Q14e	Other education materials (exercise books, pens, etc.)	N	
34	P3Q14f	Meals, transportation and or lodging	N	
35	P3Q14g	Other expenses (extra classes, optional fees)?	N	
36	P3Q14i (?)			
37	P3Q14h	Total spent	N	
38	P3Q15	Other person's payment for educational expenses?	C	1 Yes 2 No
39	P3Q16	How much money others paid for educational expenses (Amount in Kip)	N	

40	P3Q17	How far away from home to school attended most recently (Kilometer)	N	If less than 1 kilometer, put zero.
41	P3Q18a	How long to go to school (Hours)	N	
42	P3Q18b	How long to go to school (Minutes)	N	
43	P3Q19	How to go to school	C	1 Walk 2 Bicycle 3 Motorcycle 4 Car 5 Tuc-tuc 6 Bus 7 Boat 8 Animal 9 Other, specify
44	P3Q19Other			Description in Lao
45	p3Q20	Have complete set of textbooks	C	1 Yes, complete 2 No, only some 3 No, none
46	P3Q21	Share textbooks with other students	C	1 Shared 2 Exclusive use
47	P3Q22	Hours of homework in a typical week (Hours)	N	
48	P3Q23	Currently attending school?	C	1 Yes 2 No
49	P3Q24	Number of days school open in the past 7 days (Days)	N	
50	P3Q25	Number of days attended school in the past 7 days (Days)	N	
51	P3Q26	Reason if absent any days	C	1 Agricultural work 2 Work at house/home 3 Other work 4 Illness 5 Family illness/death 6 Other,specify
52	P3Q26Other			Description in Lao
53	Hhweight	Original weight variable	N	
	(The original variables as above.)			
54	Region		C	1 Vientiane M, 2 North, 3 Center, 4 South
55	New.Province	Revised	C	01 Vientiane C. 02 Phongsaly 03 Luangnamtha 04 Oudomxay 05 Bokeo 06 Luangprabang 07 Huaphanh 08 Xayabury 09 Xiengkhuang 10 Vientiane 11 Borikhamxay 12 Khammuane 13 Savannakhet 14 Saravane 15 Sekong 16 Champasack

				17 Attapeu
56	WT	Weight for resampled data	N	Hhweight/0.8

Original file: HhIncome
R data frame: INC

No	Variable name	Description	Type	Response categories/ Remarks
1	PersID	Person identification number	C	HhID+PCode (11-digit)
2	HhID	Household identification number	C	VillageID+Hhnumber (9-digit)
3	SerialNr	Serial number of household	C	
4	VillageID	Village identification number	C	Province+DistrictID+Village No (7-digit)
5	DistrictID	District identification number	C	Province+District No (4-digit)
6	Province	2-digit province code at the time of sample design	C	01-18
7	VillageType	VillageType	C	1.Urban 2.Rural with road 3.Rural without road
8	Interview_Month	Interview Month	C	1-12
9	P1Q2	Relationship to head of household	C	
10	P1Q3	Sex	C	
11	P1Q5	Age	N	
12	P1Q6	Marital status	C	
13	P1Q7	Ethnic origin	C	
14	Hhweight	Original weight variable	N	
		Has anyone in your household during the last month received any income, transfer or remittance in cash or in kind? (Amount in Kip)		
15	Incom800	Wages, salaries in cash	N	
16	Incom801	Social security	N	
17	Incom802	Wages, salaries in kind	N	
18	Incom803	Interest and royalties	N	
19	Incom804	Dividends	N	
20	Incom805	Other rent	N	
21	Incom806	Land rent	N	
22	Incom807	Pension and life insurance	N	
23	Incom808	Remittance/gifts in cash from Laos	N	
24	Incom809	Remittance/gifts in cash from abroad	N	
25	Incom810	Remittance/gifts in kind from Laos	N	
26	Incom811	Remittance/gifts in kind from abroad	N	
27	Incom812	Other current transfers Specify…	N	
28	IncomeOth	Others, specify	C	25 unreadable description (maybe in Lao) and 4101 blank
	(The original variables as above.)			
29	Region		C	1 Vientiane M, 2 North, 3 Center, 4 South
30	New.Province	Revised	C	01 Vientiane C. 02 Phongsaly

				03 Luangnamtha 04 Oudomxay 05 Bokeo 06 Luangprabang 07 Huaphanh 08 Xayabury 09 Xiengkhuang 10 Vientiane 11 Borikhamxay 12 Khammuane 13 Savannakhet 14 Saravane 15 Sekong 16 Champasack 17 Attapeu
31	WT	Weight for resampled data	N	Hhweight/0.8

Original file: HhDiarySheet
R data frame: DIA

No	Variable name	Description	Type	Response categories / Remarks
1	SerialNr	Serial number of household	C	
2	HhID	Household identification number	C	VillageID+Hhnumber (9-digit)
3	VillageID	Village identification number	C	Province+DistrictID+Village No (7-digit)
4	Province	2-digit province code at the time of sample design	C	01-18
5	DistrictID	District identification number	C	Province+District No (4-digit)
6	VillageType	VillageType	C	1.Urban 2.Rural with road 3.Rural without road
7	Hhnumber	2-digit household number within the village	C	
8	Interview_Month	Interview Month	C	1-12
9	DiaryID	Unique code for each transaction	C	
10	Page	Page number of the Diary within the household	N	
11	Serial_l	(?) unique code for household	C	
12	Unit	Unit of quantity	C	1 Kilogram 2 liter 3 meter 4 bundle 5 bag 6 piece/unit 7 basket 8 bottle 9 pack 10 paire 11 bunch 12 bowl 13 can 14 unit 15 unit 16 bun 17 other
13	Quantity	Quantity of transaction	N	
14	Kip	Value in Kip	N	

15	Kind	Kind of transaction	C	1 Expenditure in cash or in kind 2 Own consumption of own produced food 3 Own produced food given away 4 Income in cash or in kind
16	Produced	Bought where? (if expenditure)	C	1 In Lao 2 Abroad
17	Purpose	Purpose of transaction	C	1 Agriculture 2 Household 3 Business
18	ItemNo		C	
19	ItemID		C	
20	Item		C	
21	ItemGr		C	
22	Itemlev2		C	
23	Itemlev3		C	
24	ItemDescription		C	
25	Hhweight	Original weight variable	N	
26	Region		C	1 Vientiane M, 2 North, 3 Center, 4 South
27	New.Province	Revised	C	01 Vientiane C. 02 Phongsaly 03 Luangnamtha 04 Oudomxay 05 Bokeo 06 Luangprabang 07 Huaphanh 08 Xayabury 09 Xiengkhuang 10 Vientiane 11 Borikhamxay 12 Khammuane 13 Savannakhet 14 Saravane 15 Sekong 16 Champasack 17 Attapeu
28	WT	Weight for resampled data	N	Hhweight/0.8

Original file: HhDurables
R data frame: DUR

No	Variable name	Description	Type	Response categories / Remarks
1	HhID	Household identification number	C	VillageID+Hhnumber (9-digit)
2	SerialNr	Serial number of household	C	
3	VillageID	Village identification number	C	Province+DistrictID+Village No (7-digit)
4	DistrictID	District identification number	C	Province+District No (4-digit)
5	Province	2-digit province code at the time of sample design	C	01-18
6	VillageType	VillageType	C	1.Urban 2.Rural with road 3.Rural without road
7	Interview_Month	Interview Month	C	1-12
8	Hhweight	Original weight variable		
9	DurCode	Durable Code	C	1 Plots of land 2 Buildings business 3 Buildings agriculture 4 Vehicle (Car, Van ..-.) 5 Motor cycle 6 Bicycle 7 Tuk-tuk 8 Refrigerator/freezer 9 Sewing machine 10 Washing machine 11 Vacuum cleaner 12 Electric rice cooker 13 Steam rice cooker 14 Food processor 15 Two-wheeled tractor 16 Four-wheeled tractor 17 Agr. equipment 18 Tools small and large 19 Boat 20 Fishing net 21 Cart 22 Television 23 Radio/ VCD, etc 24 Telephone 25 Mobile phone 26 Camera 27 Satellite disc/connection 28 Computer 29 Air conditioner 30 Jewelry 31 Mosquito net 32 Other goods (Specify)
10	P8Q1a	Have access to but *do not own*: How many?	N	Range=0-30, NA
11	P8Q1b	Have access to and *own*: How many?	N	Range=1-220, NA
12	P8Q2	If to sell this/these (ITEM/S): how much? (Amount in Kip)	N	If you wanted to sell this/these (ITEM/S) *that you own* today, how much would you receive?
13	P8Oth			One value=32, Others=NA

	(The original variables as above.)			
14	Region		C	1 Vientiane M, 2 North, 3 Center, 4 South
15	New.Province	Revised	C	01 Vientiane C. 02 Phongsaly 03 Luangnamtha 04 Oudomxay 05 Bokeo 06 Luangprabang 07 Huaphanh 08 Xayabury 09 Xiengkhuang 10 Vientiane 11 Borikhamxay 12 Khammuane 13 Savannakhet 14 Saravane 15 Sekong 16 Champasack 17 Attapeu
16	WT	Weight for resampled data	N	Hhweight/0.8

Original file: HhHousing

R data frame:Housing

No	Variable name	Description	Type	Response categories/ Remarks
1	SerialNr	Serial number of household	C	
2	HhID	Household identification number	C	VillageID+Hhnumber (9-digit)
3	VillageID	Village identification number	C	Province+DistrictID+Village No (7-digit)
4	Province	2-digit province code at the time of sample design	C	01-18
5	DistrictID	District identification number	C	Province+District No (4-digit)
6	VillageType	VillageType	C	1.Urban 2.Rural with road 3.Rural without road
7	Hhnumber	2-digit household number within the village	C	
8	Interview_Month	Interview Month	C	1-12
9	P9Q1	Tenure status of this household	C	1. Owner/purchaser 2. Tenant 3. In tied accomm. 4. Other,specify
10	P9Q1Oth		C	
11	P9Q2	If someone wanted to rent a house like this one, how much would she/he have to pay in rent for one year?	N	AMOUNT
12	P9Q3a	What is the major construction material external wall? (FIRST)	C	1.Brick 2.Concrete 3.Unbaked brick 4.Wood 5.Bamboo 6.Tin 7.Mud 8.Other, specify
13	P9Q3b	What is the major construction material external wall? (SECOND)	C	1.Brick 2.Concrete 3.Unbaked brick 4.Wood 5.Bamboo 6.Tin 7.Mud 8.Other, specify
14	P9Q3Oth		C	
15	P9Q4	What is the major material of the roof?	C	1.Concrete 2.Wood 3.Metal sheets/zinks 4.Tile 5.Grass 6.Leaves 7.Other, specify
16	P9Q4Oth		C	
17	P9Q5	What is the primary material of the floor?	C	1.Marble/ceramic 2.Floor tile/cement 3.Concrete/brick 4.Wood 5.Banboo 6.Earth/clay 7.Other, specify
18	P9Q5Oth		C	
19	P9Q6a	How old is this dwelling?	N	YEARS
20	P9Q6b	How old is this dwelling?	N	MONTHS (If more than 3 years, do not require months)
21	P9Q7	What is the floor area of the house/ dwelling unit occupied by your household? (Do not count kitchen and balconys.)	N	SQUARE METER
22	P9Q7b	How many rooms are used by the household in this house/ dwelling unit? (Do not count kitchen.)	N	NUMBER
23	P9Q8	What is the main source of drinking water in the rainy season?	C	1.Piped water in/outside 2.Well/borehole protected 3.Well/borehole unprotected

				4.River, dam, lake etc. 5.Rain water from tank/jar 6.Other, specify
24	P9Q8Oth		C	
25	P9Q9	What is the distance to the drinking water source in the rainy season?	N	METERS (If in/outside house or in yard near house = 0 meter.)
26	P9Q10	What is the main source of drinking water in the dry season?	C	1.Piped water in/outside 2.Well/borehole protected 3.Well/borehole unprotected 4.River, dam, lake etc. 5.Rain water from tank/jar 6.Other, specify
27	P9Q10Oth		C	
28	P9Q11	What is the distance to the drinking water source in the dry season?	N	METERS
29	P9Q12	What kind of latrine is mainly used?	C	1.Modern toilet 2.Normal toilet 3.Dry toilet 4.Other, specify 5.None
30	P9Q12Oth		C	
31	P9Q13	What kind of kitchen does this household mainly use?	C	1.Inside the house 2.Outside roofed 3.Outside unroofed 4.Other, specify
32	P9Q13Oth		c	
33	P9Q14	What is the household's main source of energy for cooking?	C	1.Electricity 2.Paraffin 3.Wood 4.Coal 5.Charcoal 6.Sawdust 7.Gas 8.Other, specify
34	P9Q14Oth		C	
35	P9Q15	What is the household's main source of energy for lighting?	C	1.Electricity from public network 2.Electricity from generator 3.Electricity from battery 4.Kerosene lamp 5.Candle 6.Other, specify
36	P9QOth		C	
37	Hhweight	Original weight variable	N	
38	WT	Weight for resampled data	N	Hhweight/0.8

Original file: HhPurchase1

R data frame:Purchase1

No	Variable name	Description	Type	Response categories / Remarks
1	SerialNr	Serial number of household	C	
2	HhID	Household identification number	C	VillageID+Hhnumber (9-digit)
3	VillageID	Village identification number	C	Province+DistrictID+Village No (7-digit)
4	Province	2-digit province code at the time of sample design	C	01-18
5	DistrictID	District identification number	C	Province+District No (4-digit)
6	VillageType	VillageType	C	1.Urban 2.Rural with road 3.Rural without road
7	Hhnumber	2-digit household number within the village	C	
8	Interview_Month	Interview Month	C	1-12
9	P14S1		C	1
10	ItemB	Item No.	C	201-356
11	Bought	Has anybody in the household during the last 12 months purchased any (…)?	C	1.Yes 2.No
12	KipB	Total amount in Kip during the last 12 months	N	TOTAL AMOUNT
13	ItemB208Oth		C	
14	ItemB237Oth		C	
15	ItemB272Oth		C	
16	ItemB304Oth		C	
17	Hhweight	Original weight variable	N	
18	WT	Weight for resampled data	N	Hhweight/0.8

Item codes list of expenditure and income

(completed by the author)

ItemID	Item	ItemGr	Itemlev2	Itemlev3	ItemNo	ItemDescription
A1	1	A	1	1	001	Glutinous rice
A2	2	A	1	1	002	Ordinary rice
A3	3	A	1	2	003	Maize grain
A4	4	A	1	2	004	Flour
A5	5	A	1	2	005	Salapau bread
A6	6	A	1	2	006	Other bread
A7	7	A	1	2	007	Dry noodles
A8	8	A	1	2	008	Fresh rice noodles
A9	9	A	1	2	009	Other noodles
A10	10	A	1	2	010	Cakes and biscuits
A11	11	A	1	2	011	Other
A12	12	A	1	3	012	Pork
A13	13	A	1	3	013	Beef
A14	14	A	1	3	014	Chicken
A15	15	A	1	3	015	Duck, turkey, other bread birds
A16	16	A	1	3	016	Sausages
A17	17	A	1	3	017	Meat from hunting/trapping (wild animals and birds)
A18	18	A	1	3	018	Offal
A19	19	A	1	3	019	Other meat
A20	20	A	1	4	020	Fresh fish
A21	21	A	1	4	021	Canned fish
A22	22	A	1	4	022	Frozen fish
A23	23	A	1	4	023	Dried fish and smoked fish
A24	24	A	1	4	024	Prawns, crabs, squid, etc.
A25	25	A	1	4	025	Fermented fish
A26	26	A	1	4	026	Preserved fish
A27	27	A	1	4	027	Other
A28	28	A	1	5	028	Condensed milk
A29	29	A	1	5	029	Powdered milk
A30	30	A	1	5	030	Fresh milk
A31	31	A	1	5	031	Cheese, cream, yogurt
A32	32	A	1	5	032	Eggs
A33	33	A	1	5	033	Other
A34	34	A	1	6	034	Lard/dipping (animal fat)
A35	35	A	1	6	035	Vegetable oil
A36	36	A	1	6	036	Other
A37	37	A	1	7	037	Bananas
A38	38	A	1	7	038	Papayas
A39	39	A	1	7	039	Oranges
A40	40	A	1	7	040	Pineapples
A41	41	A	1	7	041	Lemon/lime
A42	42	A	1	7	042	Longan
A43	43	A	1	7	043	Young coconuts
A44	44	A	1	7	044	Melon
A45	45	A	1	7	045	Sepadila
A46	46	A	1	7	046	Peaches
A47	47	A	1	7	047	Gooseberry
A48	48	A	1	7	048	Avocado
A49	49	A	1	7	049	Custard apple
A50	50	A	1	7	050	Guava
A51	51	A	1	7	051	Tamarind
A52	52	A	1	7	052	Jujube
A53	53	A	1	7	053	Jackfruit
A54	54	A	1	7	054	Preserved fruits
A55	55	A	1	7	055	Other fruits
A56	56	A	1	8	056	Water melon
A57	57	A	1	8	057	Chilli
A58	58	A	1	8	058	Cucumber
A59	59	A	1	8	059	Eggplant
A60	60	A	1	8	060	Wax gourd
A61	61	A	1	8	061	Loofah
A62	62	A	1	8	062	Pumpkin
A63	63	A	1	8	063	Tomato
A64	64	A	1	8	064	Other
A65	65	A	1	8	065	Cabbage
A66	66	A	1	8	066	Chinese cabbage

A67	67	A	1	8	067	Water convolvulus
A68	68	A	1	8	068	Mustard
A69	69	A	1	8	069	Lettuce
A70	70	A	1	8	070	Mint
A71	71	A	1	8	071	Paksi
A72	72	A	1	8	072	Coriander
A73	73	A	1	8	073	Peo
A74	74	A	1	8	074	Basil
A75	75	A	1	8	075	Phartemopey
A76	76	A	1	8	076	Chun chai
A77	77	A	1	8	077	Garlic
A78	78	A	1	8	078	Onion
A79	79	A	1	8	079	Long beans
A80	80	A	1	8	080	Bamboo shots
A81	81	A	1	8	081	Spinach
A82	82	A	1	8	082	Green pepper
A83	83	A	1	8	083	Morning glory
A84	84	A	1	8	084	Other vegetables
A85	85	A	1	8	085	Mungbeans
A86	86	A	1	8	086	Cowpea
A87	87	A	1	8	087	Other legumes
A88	88	A	1	7	088	Coconuts
A89	89	A	1	8	089	Peanuts, ground (shelled)
A90	90	A	1	7	090	Other
A91	91	A	1	8	091	Potatoes
A92	92	A	1	8	092	Sweet potatoes
A93	93	A	1	8	093	Cassava
A94	94	A	1	8	094	Yam
A95	95	A	1	8	095	Chips and crisps
A96	96	A	1	8	096	Other roots and tubers
A97	97	A	1	9	097	Sugar
A98	98	A	1	9	098	Sweets
A99	99	A	1	9	099	Honey
A100	100	A	1	9	100	Ice cream
A101	101	A	1	9	101	Other
A102	102	A	1	10	102	Coffee
A103	103	A	1	10	103	Tea
A104	104	A	1	10	104	Chocolate drink, e.g. Ovaltine
A105	105	A	1	10	105	Other
A106	106	A	1	11	106	Salt
A107	107	A	1	11	107	Fish/shrimp sauces and paste
A108	108	A	1	11	108	Tomato sauce
A109	109	A	1	11	109	Soya
A110	110	A	1	11	110	Spices and seasoning
A111	111	A	1	11	111	Baking powder
A112	112	A	1	11	112	Vinegar
A113	113	A	1	11	113	Other, specify
A114	114	A	1	10	114	Fruit juice, squashes
A115	115	A	1	10	115	Bottled water
A116	116	A	1	10	116	Other soft drinks (non-alcohol)
B117	117	B	11	33	117	Beer (bought in shops)
B118	118	B	11	33	118	Beer (taken at bars, etc.)
B119	119	B	11	33	119	Lao Lao (bought in shops, etc.)
B120	120	B	11	33	120	Lao Lao (taken at bars, etc.)
B121	121	B	11	33	121	Other alcohol (bought in shops, etc.)
B122	122	B	11	33	122	Other alcohol (taken at bars, etc.)
B123	123	B	11	33	123	Tobacco for cigarettes
B124	124	B	11	33	124	Cigarettes
B125	125	B	11	33	125	Pipe tobacco
B126	126	B	11	33	126	Other smokables
C127	127	C	2	13	127	Glutinous rice
C128	128	C	2	13	128	Ordinary rice
C129	129	C	2	14	129	Maize
C130	130	C	2	14	130	Other grain crops
C131	131	C	2	18	131	Cassava
C132	132	C	2	18	132	Sweet potatoes
C133	133	C	2	18	133	Other roots and tubers
C134	134	C	2	18	134	Vegetables, grown
C135	135	C	2	18	135	Vegetables collected (growing naturally)
C136	136	C	2	17	136	Fruits, grown
C137	137	C	2	17	137	Fruits collected (growing naturally)

C138	138	C	2	15	138	Poultry and poultry products
C139	139	C	2	15	139	Own raised pigs (whole or parts)
C140	140	C	2	15	140	Own raised cattle (whole or parts)
C141	141	C	2	15	141	Own goats (whole or parts)
C142	142	C	2	15	142	Other livestock raised (rabbits,.....)
C143	143	C	2	15	143	Hunted or trapped animals
C144	144	C	2	16	144	Fish cultivated
C145	145	C	2	16	145	Fish, captured naturally grown
C146	146	C	2	19	146	Coffee
C147	147	C	2	19	147	Tea
C148	148	C	2	17	148	Coconut
C149	149	C	2	19	149	Soybean
C150	150	C	2	19	150	Cardamon
C151	151	C	2	19	151	Citronella
C152	152	C	2	19	152	Areca
C153	153	C	2	19	153	Ginger
C154	154	C	2	19	154	Other industrial crops
C155	155	C	2	19	155	Other own products, specify
D162	162	D	3	20	156	Jeans
D163	163	D	3	20	157	Other trousers
D164	164	D	3	20	158	Jackets
D165	165	D	3	20	159	Sportswear
D166	166	D	3	20	160	Suits
D167	167	D	3	20	161	T-shirts
D168	168	D	3	20	162	Shirts
D169	169	D	3	20	163	Underwear
D170	170	D	3	20	164	Others
D171	171	D	3	20	165	Lao skirt
D172	172	D	3	20	166	Other skirt
D173	173	D	3	20	167	Suits, dresses
D174	174	D	3	20	168	Blouse
D175	175	D	3	20	169	T-shirt
D176	176	D	3	20	170	Jeans
D177	177	D	3	20	171	Other trousers
D178	178	D	3	20	172	Others
D179	179	D	3	20	173	Shorts
D180	180	D	3	20	174	Trousers
D181	181	D	3	20	175	Skirt
D182	182	D	3	20	176	T-shirt
D183	183	D	3	20	177	Shirts
D184	184	D	3	20	178	Dresses
D185	185	D	3	20	179	Blouses
D186	186	D	3	20	180	Others
D187	187	D	3	20	181	Tailoring charges
D188	188	D	3	20	182	Cloth, materials for tailoring
D189	189	D	3	20	183	Footwear
E190	190	E	4	21	184	Gross rent of house or flat (furnished or unfurnished)
E191	191	E	20	97	185	Material for repair/maintenance of house
E192	192	E	20	97	186	Labour cost for repair/maintenance of house
E193	193	E	20	97	187	Material + labour if not possible to separate
E194	194	E	4	24	188	Water charges
E195	195	E	4	24	189	Electricity
E196	196	E	4	24	190	Kerosene
E197	197	E	4	24	191	Charcoal
E198	198	E	4	24	192	Firewood (purchased)
E199	199	E	4	23	193	Firewood (own produced)
E200	200	E	4	24	194	Other
F201	201	F	5	25	195	Beds
F202	202	F	5	25	196	Tables, chairs sofas
F203	203	F	5	25	197	Cupboard
F204	204	F	5	25	198	Dining room suite
F205	205	F	5	25	199	Lounge suite
F206	206	F	5	25	200	Desks and sideboards
F207	207	F	5	25	201	Stools and benches
F208	208	F	5	25	202	Others
F209	209	F	5	25	203	Repair of furniture
F210	210	F	5	25	204	Mats and rugs
F211	211	F	5	25	205	Bed sheets
F212	212	F	5	25	206	Blankets
F213	213	F	5	25	207	Towels
F214	214	F	5	25	208	Curtains

F215	215	F	5	25	209	Table cloth, napkins/serviettes
F216	216	F	5	25	210	Others
F217	217	F	5	25	211	Repair of textiles
F218	218	F	5	25	212	Carpets
F219	219	F	5	25	213	Baskets, ashtrays, laundry bags
F220	220	F	5	25	214	Flower posts, plants boxes
F221	221	F	5	25	215	Flowers, flower pots
F222	222	F	5	25	216	Repair of furnishings
F223	223	F	5	25	217	Lamps, pictures
F224	224	F	5	25	218	Others
F225	225	F	5	25	219	Steam rice cooker
F226	226	F	5	25	220	Electric rice cooker
F227	227	F	5	25	221	Electric water cooker
F228	228	F	5	25	222	Rice basket
F229	229	F	5	25	223	Bucket
F230	230	F	5	25	224	Stove with or without oven (gas or electric)
F231	231	F	5	25	225	Refrigerator/deep freezer
F232	232	F	5	25	226	Iron (electric, non-electric)
F233	233	F	5	25	227	Air conditioner
F234	234	F	5	25	228	Electric fan
F235	235	F	5	25	229	Sewing machine
F236	236	F	5	25	230	Washing machine
F237	237	F	5	25	231	Other, specify
F238	238	F	5	25	232	Repair of household appliances
F239	239	F	5	25	233	Cutlery (knives, spoons, forks, etc.)
F240	240	F	5	25	234	Glassware (glasses, glass bowls, etc.)
F241	241	F	5	25	235	Plates and cups
F242	242	F	5	25	236	Tea set
F243	243	F	5	25	237	Dinner set
F244	244	F	5	25	238	Other
F245	245	F	5	25	239	Tools for gardening
F246	246	F	5	25	240	Other tools
F247	247	F	5	25	241	Repair of utensils
F248	248	F	5	25	242	Bulbs
F249	249	F	5	25	243	Candles
F250	250	F	5	25	244	Torches
F251	251	F	5	25	245	Mops and brushes
F252	252	F	5	25	246	Matches
F253	253	F	5	25	247	Needles and pins
F254	254	F	5	25	248	Polish (furniture, floor, metal)
F255	255	F	5	25	249	Shoe brush and polish
F256	256	F	5	25	250	Soap laundry
F257	257	F	5	25	251	Batteries
F258	258	F	5	25	252	Hire of furniture and household equipment
F259	259	F	5	25	253	Other household goods
F260	260	F	5	25	254	Domestic wages in kind
F261	261	F	5	25	255	Domestic wages in cash
F262	262	F	5	25	256	Other household services
G263	263	G	6	26	257	Medicines
G264	264	G	6	26	258	Therapeutic appliances and equipment
G265	265	G	6	26	259	Payment for hospital services medical aid, fees
G266	266	G	6	26	260	Non-hospital and paramedical services
G267	267	G	6	26	261	Sickness and accident insurance services
G268	268	G	6	26	262	Other
H269	269	H	7	27	263	Motor cars and vans
H270	270	H	7	27	264	Motor cycles
H271	271	H	7	27	265	Bicycles
H272	272	H	7	27	266	Others, specify
H273	273	H	7	27	267	Tyres and tubes
H274	274	H	7	27	268	Parts and accessories incl. car batteries
H275	275	H	7	27	269	Repair charges
H276	276	H	7	27	270	Gasoline, petrol
H277	277	H	7	27	271	Diesel oil
H278	278	H	7	27	272	Other oil and greases
H279	279	H	7	27	273	Servicing
H280	280	H	7	27	274	Miscellaneous charges
H281	281	H	7	27	275	Fares on buses (excl. school bus fares)
H282	282	H	7	27	276	Fares on taxis and tuc tuc
H283	283	H	7	27	277	Fares on boats
H284	284	H	7	27	278	Tickets on domestic airlines
H285	285	H	7	27	279	Tickets on international airlines

H286	286	H	7	27	280	Transport charges of goods
H287	287	H	7	27	281	Other
H288	288	H	7	28	282	Postal service charges
H289	289	H	7	28	283	Telephone charges (fixed lines)
H290	290	H	7	28	284	Mobile phone charges
H291	291	H	7	28	285	Telegraph and telex
I292	292	I	10	31	286	Radio or radio cassettes, VCD-, DVD-players
I293	293	I	10	31	287	Television set
I294	294	I	10	31	288	Parabola antenna
I295	295	I	10	31	289	Video recorder
I296	296	I	10	31	290	Cameras
I297	297	I	10	31	291	Musical instrument
I298	298	I	10	31	292	Cellular phone, handsets
I299	299	I	10	31	293	Telephone sets
I300	300	I	10	31	294	Computers
I301	301	I	10	31	295	Repair of such items
I302	302	I	10	31	296	Film and develop a photograph
I303	303	I	10	31	297	Other equipment
I304	304	I	10	31	298	Parts and accessories of recreational goods
I305	305	I	10	31	299	Repair of recreational goods
I306	306	I	10	31	300	Cinema/theatre tickets
I307	307	I	10	31	301	Lessons on sports and others
I308	308	I	10	31	302	Lottery
I309	309	I	10	31	303	Hire of video tapes
I310	310	I	10	31	304	Veterinary and other services for pets
I311	311	I	10	31	305	Traditional ceremonies
I312	312	I	10	31	306	Other expenditure on recreation and cultural activities
I313	313	I	10	31	307	Books
I314	314	I	10	31	308	Magazines, journals and newspaper
I315	315	I	10	31	309	Pen and pencils
I316	316	I	10	31	310	Other stationery
I317	317	I	10	32	311	Costs for packages tours
J318	318	J	8	29	312	Tuition fees (excl. of payments for food, beverage, shelter)
J319	319	J	8	29	313	Teachers association fee or levy
J320	320	J	8	20	314	School uniform (incl. shoes)
J321	321	J	8	20	315	School sports wear
J322	322	J	8	29	316	Stationery for school
J323	323	J	8	29	317	Border fees
J324	324	J	8	29	318	Contribution to schools in cash
J325	325	J	8	29	319	Contributions to schools in kind
J326	326	J	8	29	320	Other expenditure on education
K327	327	K	1	12	321	Catering, sit-down meals
K328	328	K	1	12	322	Take away food
K329	329	K	1	12	323	Expenditure in hotels
L330	330	L	9	30	324	Services of barber shops/hair dressers
L331	331	L	9	30	325	Services of beauty shops, massages, etc.
L332	332	L	9	30	326	Toilet soap
L333	333	L	9	30	327	Shampoo
L334	334	L	9	30	328	Toilet paper
L335	335	L	9	30	329	Baby diapers
L336	336	L	9	30	330	Skin cream
L337	337	L	9	30	331	Tooth brush
L338	338	L	9	30	332	Tooth paste
L339	339	L	9	30	333	Powder, perfume
L340	340	L	9	30	334	Other toilet articles
L341	341	L	9	30	335	Watches
L342	342	L	9	30	336	Jewelry, rings, precious stones
L343	343	L	9	30	337	Repair of such items
L344	344	L	9	30	338	Travel goods
L345	345	L	9	30	339	Umbrellas
L346	346	L	9	30	340	Other personal goods
L347	347	L	12	34	341	Fees for legal services in cash
L348	348	L	12	34	342	Fees for legal services in kind
L349	349	L	12	34	343	Interests
L350	350	L	12	34	344	Other financial services
L351	351	L	12	34	345	Membership fees
L352	352	L	12	34	346	Rice milling charges
L353	353	L	12	34	347	Gifts and contribution to Buddhist temple in cash
L354	354	L	12	35	348	Remittances given in cash to other households
L356	356	L	12	34	349	Other, specify
M401	401	M	14	60	350	Glutinous rice

32

M402	402	M	14	60	351	Ordinary rice
M403	403	M	14	60	352	Maize
M404	404	M	14	60	353	Other cereals
M405	405	M	14	60	354	Home produced crops (see list)
M406	406	M	14	60	355	Fodder
M407	407	M	14	60	356	Industrial crops
M408	408	M	14	60	357	Vegetables, legumes
M409	409	M	14	60	358	Roots and tubers
M410	410	M	14	60	359	Fruits
M411	411	M	14	60	360	Livestock
M412	412	M	14	60	361	Poultry
M413	413	M	14	60	362	Milk products
M414	414	M	14	60	363	Eggs
M415	415	M	14	60	364	Wild animals
M416	416	M	14	60	365	Fish cultivated
M417	417	M	14	60	366	Fish naturally grown
M418	418	M	14	60	367	Wood, timber, firewood
M419	419	M	14	60	368	Other sold proucts
M420	420	M	14	60	369	Other receipts in cash
M421	421	M	14	60	370	Other receipts in kind
M451	451	M	15	61	371	Rice seed traditional
M452	452	M	15	61	372	Rice seed developed
M453	453	M	15	61	373	Other seeds
M454	454	M	15	61	374	Fodder
M455	455	M	15	61	375	Livestock
M456	456	M	15	61	376	Poultry
M457	457	M	15	61	377	Animal feed
M458	458	M	15	61	378	Fertilizers
M459	459	M	15	61	379	Pesticides, herbicides
M460	460	M	15	61	380	Electricity
M461	461	M	15	61	381	Fuel
M462	462	M	15	61	382	Other transport costs
M463	463	M	15	61	383	Vehicles (tractors), el. motors or petrol engine motors, and similar larger capital goods
M464	464	M	15	61	384	Small equipment and tools in agriculture
M465	465	M	15	61	385	Small equipment and tools in forestry
M466	466	M	15	61	386	Small equipment and tools in fishing
M467	467	M	15	61	387	Repairs of machines, equipment
M468	468	M	15	61	388	Construction materials
M469	469	M	15	61	389	Wages and salaries in cash
M470	470	M	15	61	390	Wages and salaries in kind
M471	471	M	15	61	391	Other costs
N501	501	N	16	62	392	Resale of purchased goods (trade)
N502	502	N	16	62	393	Sale of free collected goods
N503	503	N	16	62	394	Sale of goods produced or processed (industry/handicraft)
N504	504	N	16	62	395	Income from transport services
N505	505	N	16	62	396	Income from real estate (rents)
N506	506	N	16	62	397	Income from other services
N507	507	N	16	62	398	Own consumption of products for sale
N508	508	N	16	62	399	Value of products given away as salaries in kind
N509	509	N	16	62	400	Value of products bartered away
N510	510	N	16	62	401	Charges received in cash for services rendered or work done
N511	511	N	16	62	402	Income from sale of capital goods
N512	512	N	16	62	403	Other business income, specify
O551	551	O	17	63	404	Goods bought for resale
O552	552	O	17	63	405	Raw materials for further processing
O553	553	O	17	63	406	Rent, lease hold or similar charges
O554	554	O	17	63	407	Fuel, electricity, gas, petrol, water
O555	555	O	17	63	408	Machinery and transport equipment (vehicles used in business)
O556	556	O	17	63	409	Small equipment and tools used in business operations
O557	557	O	17	63	410	Hire and repair of equipment
O558	558	O	17	63	411	Transport charges
O559	559	O	17	63	412	Repairs of buildings (bought repairs or materials bought)
O560	560	O	17	63	413	Goods given away
O561	561	O	17	63	414	Wages and salaries paid in cash
O562	562	O	17	63	415	Wages and salaries paid in kind
O563	563	O	17	63	416	Business taxes, licenses
O564	564	O	17	63	417	Accountant's fee and other service charges
O565	565	O	19	96	418	Interest paid on business loans
O566	566	O	17	63	419	Other business costs, specify
O601	601	O	21	98	420	Purchase of land
O602	602	O	21	98	421	Purchase of second hand house

O603	603	O	21	98	422	Building materials for construction/extension of residential house
O604	604	O	21	98	423	Labour for construction of residential house
O605	605	O	21	98	424	Materials for construction/extension of agricultural buildings
O606	606	O	21	98	425	Labour for construction of agricultural buildings
O607	607	O	21	98	426	Materials for construction/extension of business buildings
O608	608	O	21	98	427	Labour for construction of business buildings
O609	609	O	21	98	428	Material+labour residential buildings of not possible to divide
O610	610	O	21	98	429	Material+labour agricultural buildings of not possible to divide
O611	611	O	21	98	430	Material+labour business buildings of not possible to divide
P800	800	P	18	80	431	Wages, salaries in cash
P801	801	P	18	80	432	Social security
P802	802	P	18	80	433	Wages, salaries in kind
P803	803	P	18	81	434	Interest and royalties
P804	804	P	18	81	435	Dividends
P805	805	P	18	81	436	Other rent
P806	806	P	18	81	437	Land rent
P807	807	P	18	82	438	Pension and life insurance
P808	808	P	18	83	439	Remittance, gifts in cash for Laos
P809	809	P	18	84	440	Remittance, gifts in cash for abroad
P810	810	P	18	85	441	Remittance, gifts in kind for Laos
P811	811	P	18	86	442	Remittance, gifts in kind for abroad
P812	812	P	18	82	443	Other current tranfers Specify

Table: Groups of Diary Item codes

Itemlev2		Itemlev3	
1	Food expenditure	1	Rice.
		2	Other cereals and bread.
		3	Meat.
		4	Fish.
		5	Milk, cheese and eggs.
		6	Oils and fats.
		7	Fruits.
		8	Vegetables and potatoes.
		9	Sugar and sweets.
		10	Non-alcoholic beverages, coffee and tea.
		11	Other food.
		12	Meals.
2	Consumption of own produced food	13	Own produced rice.
		14	Own produced other grains.
		15	Own produced meat.
		16	Own produced fish.
		17	Own produced fruits.
		18	Own produced vegetables.
		19	Other own produces.
3	Clothing and footwear	20	Clothing and footwear.
4	Housing	21	Rent
		22	Imputed rent.
		23	Firewood collected.
		24	Water, electricity, other fuels
5	Household utensils and operations	25	Household utensils and operations.
6	Medical care	26	Medical care.
7	Transport and communications	27	Transport.
		28	Communications.
8	Education.	29	Education.
9	Personal care	30	Personal care.
10	Recreation	31	Recreation.
		32	Accommodation.

11	Alcohol and tobacco.	**33**	Alcohol and tobacco.
12	Other	**34**	Miscellaneous goods and services.
		35	Remittances given away.
		36	Taxes
13	Sales of goods	**50**	Sales of goods
14	Agricultural income	**60**	Agricultural income
15	Agricultural cost	**61**	Agricultural cost
16	Business income	**62**	Business income
17	Business cost	**63**	Business cost
18	Income, remittances and transfers	**80**	Wages and salaries
		81	Property income
		82	Pensions and other transf.
		83	Remitt. in cash fr Laos
		84	Remitt. in cash fr abroad
		85	Remitt. in kind fr Laos
		86	Remitt. in kind fr abroad
19	Interests	**96**	Interests
20	Repair/mainten.of houses	**97**	Repair/mainten.of houses
21	Investments	**98**	Investments

Itemcodes included in the different groups of the 2002/03 LECS

	Itemlev2	Itemgroups	Itemlev3	Itemcode in LECS													
Food expenditure	1	Rice.	1	1	2											1 or 2	
		Other cereals and bread.	2	3	4	5	6	7	8	9	10	11				>=3 and <=11	
		Meat.	3	12	13	14	15	16	17	18	19					>=12 and <=19	
		Fish.	4	20	21	22	23	24	25	26	27					>=20 and <=27	
		Milk, cheese and eggs.	5	28	29	30	31	32	33							>=28 and <=33	
		Oils and fats.	6	34	35	36										>=34 and <=36	
		Fruits.	7	37	38	39	40	41	42	43	44	45	46			>=37 and <=55	
				47	48	49	50	51	52	53	54	55					
		Vegetables and potatoes.	8	56	57	58	59	60	61	62	63	64	65			>=56 and <=87 or	>=1 and <=116 or 328 or 329
				66	67	68	69	70	71	72	73	74	75			>=91 and <=96	
				76	77	78	79	80	81	82	83	84	85	86	87		
				91	92	93	94	95	96								
		Sugar and sweets.	9	97	98	99	100	101								>=97 and <=101	
		Non-alcoholic beverages,	10	102	103	104	105									>=102 and <=105 or	
		coffee and tea.		114	115	116										>=114 and <=116	
		Other food.	11	88	89	90										>=88 and <=90 or	
				106	107	108	109	110	111	112	113					>=106 and <=113	
		Meals.	12	328	329	327										328 or 329 or 327	
Consumption of own produced food	2	Own produced rice.	13	127	128											127 or 128	
		Own produced other grains.	14	129	130		158									129 or 130	
		Own produced meat.	15	138	139	140	141	142	143							>=138 and <=143	>=127 and <=155
		Own produced fish.	16	144	145											144 or 145	
		Own produced fruits.	17	136	137											136 or 137	
		Own produced vegetables.	18	131	132	133	134	135								>=131 and 135	
		Other own produces.	19	146	147	148	149	150	151	152	153	154	155			>=146 and <=155	
Clothing and footwear	3	Clothing and footwear.	20	162	163	164	165	166	167	168	169	170	171				
				172	173	174	175	176	177	178	179	180	181				
				182	183	184	185	186	187	188	189						
				321	322												
Housing	4	Rent	21	190													
		Imputed rent.	22	1901 From housing module													
		Firewood collected.	23	199													
		Water, electricity, other fuels	24			200											
				194	195	196	197	198									
Household utensils and operations	5	Household utensils	25	211	212	213	214	215	216	217							
		and operations.		219	220	221	222	223	224	225	226	227	228	229			
				239	240	241	242	243	244	245	246	247	248	249	250		
				251	252	253	254	255	256	257	258	259	260	261	262		
				201	*202*	*203*	*204*	*205*	*206*	*207*	*208*	*209*	*210*	*From part XIV*			
				218										*div. by 12*			

Itemcodes included in the different groups of the 2002/03 LECS

	Itemlev2	Itemgroups	Itemlev3	Itemcode in LECS													
				230	*231*	*232*	*233*	*234*	*235*	*236*	*237*	*238*					
Medical care	**6**	Medical care.	**26**	263	264	265	266	267	268								
Transport and communications	**7**	Transport.	**27**	273	274	275	276	277	278	279	280	281	282	283	286	287	
				269	*270*	*271*	*272*		*284*	*285*	*From part XIV, div. by 12*						
		Communications.	**28**	288	289	290	291										
Education.	**8**	Education.	**29**	319	320		323	324	325	326							
Personal care	**9**	Personal care.	**30**	331	332	333	334	335	336	337	338	339	340	341			
				345	346	347											
				342	*343*	*344*				*From part XIV div. by 12*							
Recreation	**10**	Recreation.	**31**	300	301	303		305									
				307	308	309	310	311	312	313	314	315	316	317			
				304		*306*								*From part XIV*			
								356						*div. by 12*			
				292	*293*	*294*	*295*	*296*	*297*	*298*	*299*						
		Accommodation.	**32**	330		318											
Alcohol and tobacco.	**11**	Alcohol and tobacco.	**33**	117	118	119	120	121	122	123	124	125	126				
Other	**12**	Miscellaneous goods	**34**	348	349												
		and services.		351	352	353	354		357								
		Remittances given away.	**35**	355													
		Taxes	**36**	??		??											
Sales of goods	**13**	Sales of goods	**50**	*From sectioncode 3 or 4 in Purchsell. A "0" has been added*													
				in the end of the itemid. Kip has been divided by 12													
Agricultural income	**14**	Agricultural income	**60**	401	402	403	404	405	406	407	408	409	410				
				411	412	413	414	415	416	417	418	419	420	421	422		
Agricultural cost	**15**	Agricultural cost	**61**	451	452	453	454	455	456	457	458	459	460				
				461	462	463	464	465	466	467	468	469	470	471	472		
Business income	**16**	Business income	**62**	501	502	503	504	505	506	507	508	508	509	510	511	512	
Business cost	**17**	Business cost	**63**	551	552	553	554	555	556	557	558	559	560				
				561	562	563	564	565	566								
Income, remitttances and transfers	**18**	Wages and salaries	**80**	800	801	802											
		Property income	**81**	803	804	805	806										
		Pensions and other transf.	**82**	807		812											807 or 812
		Remitt. in cash fr Laos	**83**	808													>=800 and <=812
		Remitt. in cash fr abroad	**84**	809													
		Remitt. in kind fr Laos	**85**	810													
		Remitt. in kind fr abroad	**86**	811													
Interests	**19**	Interests	**96**	350													
Repair/mainten.of houses	**20**	Repair/mainten.of houses	**97**	191	192	193											
Investments	**21**	Investments	**98**	601	602	603	604	605	606	607	608	609	610	611			

OR? P10q6-7, P10q9,P10q11-13 P10q18-20, P10q21,P10q23-25 *From part X div. by 12?*

Itemcodes included in the different groups of the 2002/03 LECS		
Itemlev2	**Itemgroups**	Itemlev3 **Itemcode in LECS**
		P10q30-32, P10q33,P10q35-37

Ministry of Planning and Investment
Department of Statistics

THE HOUSEHOLD OF LAO PDR

Social and economic indicators

Survey results on expenditure and consumption of household 2007/2008

LECS 4

LAO DEPARTMENT OF STATISTICS

May, 2009

Table of contents

List of tables

List of figures

1 SURVEY METHODOLOGY

1.1 Scope and Purpose of the Survey

The fourth expenditure and consumption survey (LECS 4) in Lao PDR is a survey in terms of socio-economy at the household echelon. This survey is conducted in every 5 years. The present round of surveys started from 1992 and the main statistical collection unit is the household. This survey is a sample survey which is carried out in every province and district over the whole country. The survey was undertaken from April 2007 to March 2008 (for a period of 12 months), in order to be able to provide data on expenditure and consumption covering all seasons and relating to aspects of every area and region in the Lao PDR.

The purpose of the expenditure and consumption survey (LECS) is to estimate the expenditure and consumption of household as well as production, investment, accumulation and other socio-economic aspects of the households in the formal and informal sector of the economy.

The results of expenditure and consumption survey in Lao PDR will provide necessary data to be used for calculation of various indicators and are intended for socio-economic planning. It will also provide data for calculation of GDP, definition of poverty line, data on nutrition and other important information. The LECS surveys are the most important surveys in the statistical data collection system of Lao PDR.

The main objectives of this survey are:

- Estimation at macro level for national accounts, including private consumption, household investment, production and income from agriculture and household business;
- Structure of household consumption (weight system) for consumption price index calculation (CPI);
- Estimation on labor force;
- Nutrition statistic;
- Poverty statistics and statistics of income distribution.

The sample size of LECS 4 is composed of 8.304 household from 518 villages. The villages are the same villages as in the survey LECS 3. In every village 16 households were selected in the sample. The field work was conducted for a period of 12 months starting from April 1, 2007 to March 31, 2008. People undertaking the survey (enumerators) are always being on place in the village during the month the survey is undertaken in the respective village.

1.2 Sample Design and Selection

1.2.1 First Step: Description of Sample Village

The survey design for the LECS 4 uses the same methodology and sampling technique as used in the LECS 3. The sample selection is conducted in two steps. The first step is selection of sample villages using the zoom selection methodology according to the proportion of the population (PPS). Village unit is distributed according to the following echelon: village classified by province, district, rural area with access to road and rural area without access to road. The number of sample villages in each province is in between 17 to 48 villages depending on the number of villages, and the number of households in every survey area (see Table i).

Table i : Number Sample for Survey

Target	**LECS 1 (92/93)**	**LECS 2 (97/98)**	**LECS 3 (02/03)**	**LECS 4 (07/08)**
Villages	147	450	540	518
Households	2 937	8 882	8 092	8 296

Comparing the last two surveys, LECS 3 and LECS 4, the number of sample villages is decreased from 540 to 518 villages. This is due to the situation of allocation and unification of small villages into larger villages, which in past years has appeared in every province in the whole country. In order to assure normal rule of distribution of sample, the number of sample households has been from 15 to 16 per village.

Each month the number of sample villages is almost the same, because the sample has been selected as zoom for every month.

1.2.2 Second Step: Selection of Sample Household

In the present expenditure and consumption survey half of the number of households are the same as households that were surveyed in the LECS 3, and the other half are new households that previously were not surveyed. The selection of households in the sample uses the zoom methodology on arbitrary and systematic basis. Selection of the 8 sample households from the survey of LECS 3 uses the zoom methodology on arbitrary basis by taking part in a lottery among LECS 3 households. New 8 sample household are selected among the other

households in the village using the same methodology. Together the number of sample households in one village is 16. The selection of sample household is based on the number of existing households in the village at the time of the conduction of the survey. If the village has 16 or less households all households are covered by the survey,

Table ii: Sample allocation over survey months [1]

	Month	Villages	Households	Persons
2007	April	45	752	4 364
	May	42	672	3 993
	June	43	688	3 907
	July	43	686	4 083
	August	43	688	3 872
	September	43	688	3 781
	October	42	672	3 797
	November	42	688	4 111
	December	44	688	3 979
2008	January	43	688	4 227
	February	43	682	3 938
	March	45	704	3 973
	Total	**518**	**8 296**	**48 025**

[1] Remark: Number of village and household are actual sample in survey.

Table iii: Number of sample villages in each stratum

Code	Province	Urban villages	Rural villages with access to road	Rural villages without access to road	Total
01	Vientiane C.	33	15	0	48
02	Phongsaly	3	8	13	24
03	Luangnamtha	5	13	5	23
04	Oudomxay	5	13	3	21
05	Bokeo	4	15	5	24
06	Luangprabang	5	19	10	34
07	Huaphanh	5	27	2	34
08	Xayabury	10	24	1	35
09	Xiengkhuang	5	17	3	25
10	Vientiane	17	21	0	38
11	Borikhamxay	3	16	4	23
12	Khammuane	5	28	1	34
13	Savannakhet	10	36	2	48
14	Saravane	4	30	2	36
15	Sekong	5	8	4	17
16	Champasack	9	17	10	36
17	Attapeu	2	12	4	18
	Total	**130**	**319**	**69**	**518**

1.3 Methodology and Main Contents of the Survey

Ministry of Planning and Investment authorized the Department of Statistics to conduct the LECS survey, in cooperation with the division of planning and investment of each province.

In this survey, data on expenditure and income was collected from households. Data was collected during one month using the daily recording principle. All transactions were captured in a diary and classified by kind of consumption, or by result of agricultural production and business of the household. Data on purchase of goods with long life-time (durables) such as furniture, television, automobile, motorcycle and others were also recorded for the period of the past 12 months.

Data on time use was captured in the middle of the month for all household members aged 10 years and higher.

The LECS 4 survey covers five main topics:

- questions on expenditure and daily consumption of the household,
- questions on the situation of the household,
- questions on the time used of the household,
- questions on prices in the market and in the shops,
- questions concerning the village, for the chief of village.

The structure of the contents of the questionnaire is as followed:

Module	Contents	Data specified for:
Diary	All household transactions during sampled months. Transactions coded to consumption/expenditure, household business, agriculture and investment outlays	Household
Household questionnaire	- Household composition	All household members
	- Parents	Non-household member
	- Education	6 years and above
	- Labour force participation	10 years and above
	- Victimization	Household
	- Nutrition	All household members
	- Health check, measurements of heights and weights	Children 4 years and below
	- Possession of durables and assets values	Household
	- Housing conditions – household	Household
	- Construction activities – household	Household
	- Household business	By business
	- Agriculture – household	Household
	- Health – evaluation of health, use of health services, health seeking behavior, health costs	All household members, costs for household
	- Purchases and selling of durables during the last 12 months	Household
	- Income and transfers – by all members of household	All household members
	- Borrowing and lending – by household	Household
Time use	Time spent recorded for a period of 24 hours in a sampled day for 22 activities	10 years and above
Prices	Prices for 92 basic goods and services recorded in nearest local market	
Village questionnaire	- demograph - general economic conditions - access to services - agriculture - prices	Village Data provided by village heads on situations in the village

1.4 Terms, Concepts and Definition of Words used in the Survey

Household: is a group of people making common arrangements, searching for foods, having a common house and conduct different daily activities in common. A normal household consists of people having a link together such as: husband, wife, children and father, mother. In some cases are also included people having no relative's link such as: co-living or employee or worker who lives together in the household having different activities in common.

Household with one person: is one person who lives alone in a house or in a part of a house, searching for food and other necessary goods for living life for himself without searching together with other people.

Household with many people: is a group with two peoples or more living together in a house or in a part of a house, together searching for food and other necessary goods for living life. Normally, the household like this is composed of: husband, wife, children, relatives, co-living people.

Head of household: the head of household plays an important role and gets the respect from the members of the household. In most case, she/he usually owns more income than the other members of the household and is also looking for the welfare of the household. The head of household may be male or female.

Household expenditure: includes purchase, or other exchange, of goods and services in the market. Consumption of the household is equal to the expenditure of the household plus the value of own produced goods. The difference between expenditure and consumption, is basically consumption of own produced goods, free collected firewood and the use of owner occupied houses.

CONSUMPTION = EXPENDITURE + VALUE OF OWN PRODUCED GOODS

The expenditure and consumption of different items are shown in values, and as percentage of total expenditure/consumption. The change in consumption between periods may have its cause from change of volumes (quantities) and the variation of price.

Quantities consumed: have been captured. However, quantities are not easy to add together as the unit of quantities varies a lot (kg, liter, bundle, etc). Consumption quantities (or eating quantities) are essential for nutrition analysis. Household food consumption is not exactly the same as "eating", but more or less the same for a period of a whole year. The amount of "eating" is measured with rice intake (in grams per persons) and intake of fish and vegetables. Changes in consumption volumes can also be obtained by deflating values with

proper price indices. Therefore, prices for basic goods and main services are collected in the survey.

Household income: is the sum of income from all sources that household members have. It contains wages and social benefits, pensions, dividends and royalties received, transfers from abroad in cash or kind, entrepreneurial income from household businesses and agriculture, fishery and forestry.

Entrepreneurial income: is defined as income less current operational costs. This income is supposed to cover owners' remunerations, payments for work done by other (non-paid) household members, financing of investments and profit.

Household savings: is defined as household total income less expenditure and less the value of own produced food.

Household production: is captured both in the diary and in other household survey modules but in different ways. The recording of transactions in the diary provides estimation of production values, the running costs and entrepreneurial income. The entrepreneurial income should be large enough (if profitable) to cover investments and remuneration for the owner and other unpaid household members, interest and repayments of loan taken for the operations and profit.

Production in agriculture is also captured in the household module in terms of farming area operated, main output planted, harvested and output, livestock by number and disposition of livestock, poultry, etc.

Information on household businesses is also found in the household module which also provides for classification according to activity.

Household assets value: this item is captured for the first time in the fourth Household expenditure and consumption survey. Households have provided data of the value of their land, buildings, and durables such as motor vehicles, etc. and the value of specific agriculture assets such as livestock.

Person as an employee: is a person who works for someone else outside the own household and receives salary for that. People working in own business or agriculture is self-employed and do not get a salary but take a share of the entrepreneurial income.

1.5 Reliability of the Data

The data in this report are based on the findings from the survey. Therefore, the sampling errors are the main issue concerning reliability. Sampling errors have been calculated for some important variables based on the confidence of 95% (“margin of errors”). All confidence intervals are in absolute figures (number of digit). The household consumption is (2.170.7 thousand kips) and with a confidence interval of 5% it means that there is a 95% confidence that the true value lies between 2.158.3 kips and 2.183.0 kips.

Data quality is depending on sampling errors, data entry errors, coding errors and measurement errors. Although a lot of effort has been made to “clean” data from various errors, there may be still some left, but those will not influence the results more than marginally. When judging the quality, it has to be remembered that the survey in many aspects touches upon concepts of household economy that are difficult to assess, and not immediately clear. Therefore, data translation and data reading may be subject to some interpretation.

In some tables errors margins are presented in order for the reader be able to interpret data adequately.

Prior to the survey, training for data collectors (enumerator) and supervisors was organized in order to have a common understanding about the contents. The training was carried out in two steps:

+ Prior to the field survey, the training for the supervisor or the manager at province level was organized at the Department of Statistics for a period of 5 days. Participants from all 17 provinces attended the training.

+ Training for the field officers (enumerators) at the province level was organized for a period of 11 days. This training was set up at 4 places: first place in Xayabury for 8 northern provinces, second place in Vientiane Capital for 2 central part provinces, third place in Savannakhet for 3 central part provinces and fourth place in Champasack province for 4 southern provinces.

Data collection is carried out for each household during one month. A diary is used for daily recording of each transaction for expenditure and consumption. For other parts of the survey the enumerator makes interviews with members of the household. Manuals are available to give guidelines to enumerators and supervisors. Supervisors from Department of statistics and officers from planning and investment division of the province are constantly checking the field work.

After completing field data collection, the supervisor (central level) from the Department of Statistics monitors checks for missing data and data coincidence. An international coding system is used for systematic data entry into computer data bases in

order to assure data compliance and to make it convenient to summarize by for example: province or region, or by variable.

Data photo scanning system is a technique that partly has been used for data entry during this survey, in order to reduce errors due to manual data entry mistakes. This technique is convenient and timesaving both for data entry and for amendment. However, some errors may still remain, but it is considered being an acceptable level in term of statistical errors.

2 Household in the LAO PDR

According to the fourth Household expenditure and consumption survey in 2007/2008, it can be noted that the number of households in Lao PDR is 985.000 and that the average household size is 5.7 (±0.03) persons/household. Compared to the third Household expenditure and consumption survey in 2002/2003 the household size has decreased by nearly 6.1%. This number indicates that the Lao households know about family planning in order to have birth spacing.

Table 2.1: Household size and number of households by provinces and regions in 2007/08

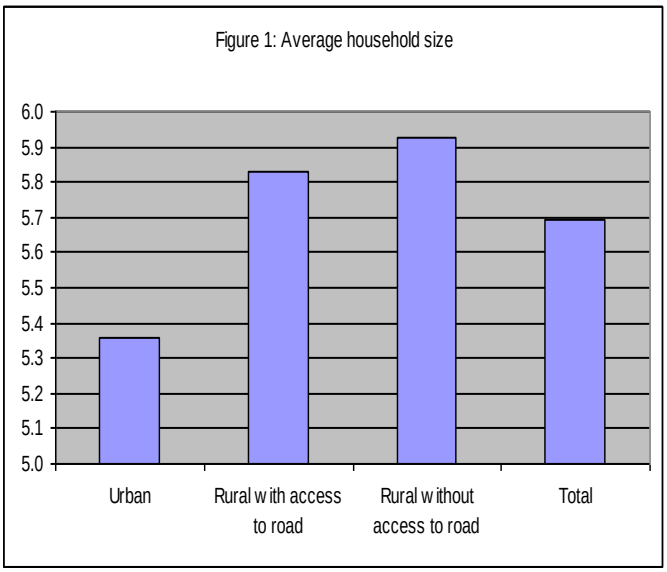
	Number of households 2007/08 (1000 households)	Number of households 2002/03 (1000 households)	Household size LECS 2007/08	Confidence interval (margin of error)	Household size LECS 2002/03	Confidence interval (margin of error)
Lao PDR	**985**	**867**	**5.7**	± **0.0**	**6.1**	± 0.1
Urban	302	240	5.4	± 0.1	5.8	± 0.2
Rural	683	627	5.8	± 0.0	6.2	± 0.1
North	**305**	**266**	**5.9**	± **0.1**	**6.2**	± 0.2
Phongsaly	29	25	6.0	± 0.3	6.5	± 0.4
Luangnamtha	28	23	5.9	± 0.2	6.0	± 0.3
Oudomxay	44	38	6.4	± 0.2	6.5	± 0.5
Bokeo	27	25	5.0	± 0.2	5.4	± 0.4
Luangprabang	69	61	5.9	± 0.1	6.3	± 0.4
Huaphanh	44	37	7.0	± 0.2	7.3	± 0.3
Xayaboury	64	58	5.3	± 0.2	5.6	± 0.3
Center	**478**	**423**	**5.5**	± **0.1**	**6.0**	± 0.1
Vientiane C.	125	111	5.2	± 0.1	5.7	± 0.2
Xiengkhuang	39	30	6.3	± 0.2	7.4	± 0.4
Vientiane P.	77	62	5.6	± 0.1	5.9	± 0.3
Borikhamxay	40	38	5.1	± 0.2	5.6	± 0.4
Khammuane	63	55	5.3	± 0.1	5.8	± 0.3
Savannakhet	134	122	5.8	± 0.1	6.3	± 0.2
South	**201**	**178**	**5.7**	± **0.1**	**5.9**	± 0.2
Saravane	58	51	6.1	± 0.2	6.0	± 0.3
Sekong	14	12	6.7	± 0.4	6.4	± 0.5
Champasack	109	97	5.5	± 0.1	5.9	± 0.2
Attapeu	20	17	5.5	± 0.3	5.9	± 0.4

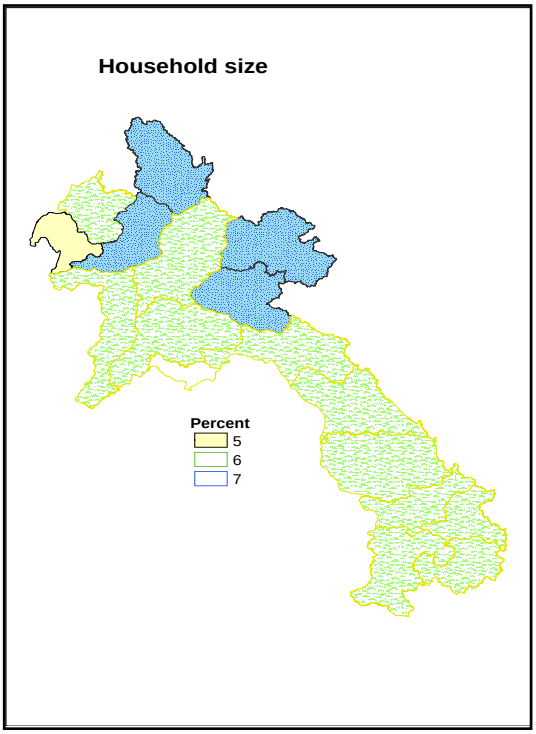
Normally, households in the rural areas are larger than households in urban areas. The average household size in the rural is 5,8 and in urban areas 5,4. If we look over the country, we can see that the northern region has the largest average household size of 5,9 persons/household. Huaphanh province has the largest average household size, 7,0, but the tendency, compared to the third Household expenditure and consumption survey, is decreasing. The same situation prevails for many provinces with the exception of Xekong and Saravanh provinces where the tendency is slightly increasing(see Table 2.1). Comparing urban and rural villages, the rural households without access to road has the largest average household size of 5,9, and rural villages without access to road in the northern region are having the largest household size of 6,2 persons/household (see Table 2.2).

Table 2.2: Average household size by type of area in 2007/08

	Urban	Rural with access to road	Rural without access to road	Total
Lao PDR	**5.4**	**5.8**	**5.9**	**5.7**
North	5.3	6.0	6.2	5.9
Center	5.4	5.6	6.1	5.5
South	5.3	6.0	5.4	5.7

Figure 1: Household size





A majority of households in Lao PDR, 69% of all Lao households, are situated in the rural areas. This indicates that the development of the country is still low. People are still depending on nature for their living life, and access to infrastructure services is still low. Comparing between regions in the country, it can be noted that the northern region has the

highest share of the population living in rural areas, namely 80%. Looking by province, however, it can be seen that Saravan province has the highest proportion of rural households, 91%, followed by Phongsaly with 88%, while Vientiane Capital has the lowest share of 35% (see Table 2.3). In all, the number of population living in the rural areas in Lao PDR is still high. Comparing to the third Household expenditure and consumption survey in 2002/2003, it can be seen that number of households living in the rural areas in Lao PDR has a tendency to decrease.

Table 2.3: Number of households by province and type of area in 2007/08, 1000 households

	Urban	Rural areas with access to road	Rural areas without access to road	Total	% Rural areas
Lao PDR	**302**	**590**	**93**	**985**	**69**
North	**62**	**196**	**48**	**305**	**80**
Phongsaly	4	10	15	29	88
Luangnamtha	5	17	6	28	82
Oudomxay	10	31	3	44	78
Bokeo	4	20	3	27	87
Luangprabang	16	38	16	69	77
Huaphanh	5	37	2	44	89
Xayaboury	19	43	2	64	70
Center	**199**	**268**	**11**	**478**	**58**
Vientiane C.	81	44	0	125	35
Xiengkhuang	9	26	4	39	77
Vientiane P.	19	58	0	77	75
Borikhamxay	8	28	4	40	79
Khammuane	14	47	2	63	78
Savannakhet	68	65	2	134	50
South	**41**	**126**	**34**	**201**	**79**
Saravane	5	51	2	58	91
Sekong	3	8	3	14	77
Champasack	28	54	27	109	74
Attapeu	5	14	2	20	76

Table 2.4 shows the dependency ratio[2] and the average number of consumption units. In Lao PDR, the total dependency ratio is 0,7. In the urban and rural areas, it is 0,5 and 0,8 respectively. The region with the highest dependency ratio, is the southern region where it is 0,8[3].

[2] The dependency ratio is the number of children below age 15 plus the number of people above 64 years of age divided by the number of persons in the household age 15-64. It indicates the burden of those of working age to be responsible for the children and aging population.

[3] Average number of consumption unit is calculated as 1 for the first adult in the household 0,9 for other adults, 0,4 for children below age 7 and 0,7 for children aged 7-15. The consumption unit approach reflects the fact that members of a household can share some expenses and small children needs less food than an adult or a teenager.

The lowest dependency ratio is found in the central region where it is 0,6.

Looking on the province level it is found that the dependency has slightly decreased in all provinces since 1997/1998, while the proportion of people in work has increased constantly.

The average consumption unit in Lao PDR is 4,7. In the urban areas, it is 4,7 and in the rural areas 4,8. Compared to the previous survey, it has slightly increased.

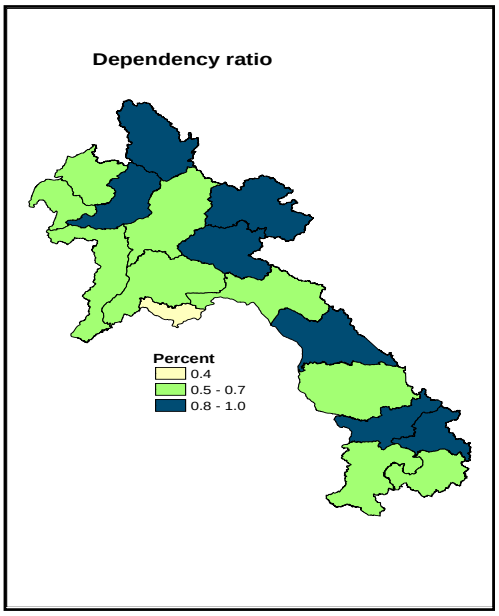


Table 2.4: Dependency rates and average number of consumption units, by province and region 2007/2008.

	Dependency ratio 2007/08	Average no. of consumption unit 2007/08	Dependency ratio 2002/03	Average no. of consumption unit 2002/03
Lao PDR	**0.7**	**4.7**	**0.8**	**4.5**
Urban	0.5	4.7	0.6	4.5
Rural	0.8	4.8	0.9	4.6
North	**0.7**	**4.8**	**0.9**	**4.6**
Phongsaly	0.8	4.9	0.9	4.8
Luangnamtha	0.7	4.8	0.7	4.5
Oudomxay	0.8	5.1	0.9	4.8
Bokeo	0.7	4.2	0.8	4
Luangprabang	0.7	4.8	0.9	4.6
Huaphanh	0.9	5.6	1.1	5.3
Xayaboury	0.6	4.5	0.7	4.3
Center	**0.6**	**4.7**	**0.7**	**4.6**
Vientiane C.	0.4	4.6	0.5	4.5
Xiengkhuang	0.9	5.0	1.1	5.3
Vientiane P.	0.7	4.6	0.8	4.4
Borikhamxay	0.7	4.3	0.8	4.3
Khammuane	0.8	4.3	0.9	4.3
Savannakhet	0.7	4.9	0.8	4.7
South	**0.8**	**4.7**	**0.9**	**4.4**
Saravane	0.9	4.8	0.9	4.4
Sekong	1.0	5.3	1	4.6
Champasack	0.7	4.5	0.8	4.4
Attapeu	0.7	4.6	0.9	4.3

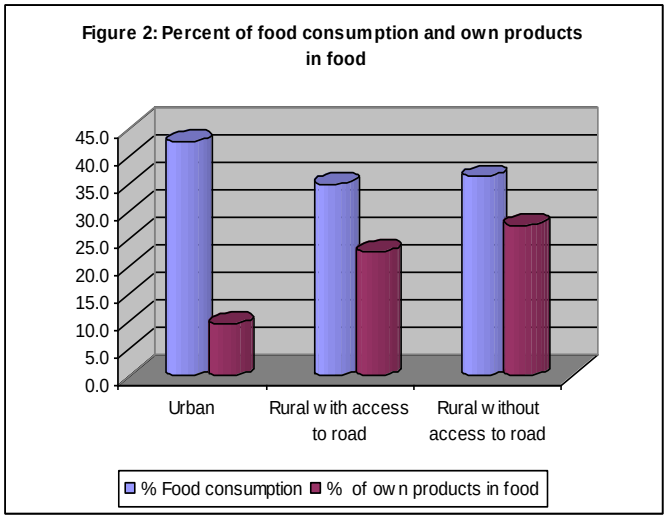
3 CONSUMPTION AND RICE INTAKE OF HOUSEHOLD

3.1 Consumption

Consumption is one important indicator to measure the welfare of the people. Especially for more developing countries, the consumption and the expenditure are considered as key factors for measurement and evaluation of the welfare, rather than using the revenue, because consumption does not vary so quickly. Normally, the volume of consumption and the volume of demand of the people do not change a lot. Price changes and changes in revenue are causes for the change.

The result of the fourth Household expenditure and consumption survey shows that in Lao PDR the average level of household consumption per month has increased from 1.09 million kips in 2002-03 to 2.17 million kips in 2007-08 or is augmented about 1.9 times. A high share of Lao households expenses goes to expenditure on foods which represents 22.7% of all consumption. The consumption of the own produced products represents 23.4%, while expenditure on communication, transport and telecommunication stand for19.8% and living facilities stands for12.6% of the consumption (see table 3.1).

Figure 2: Percentage of food consumption and own produced food



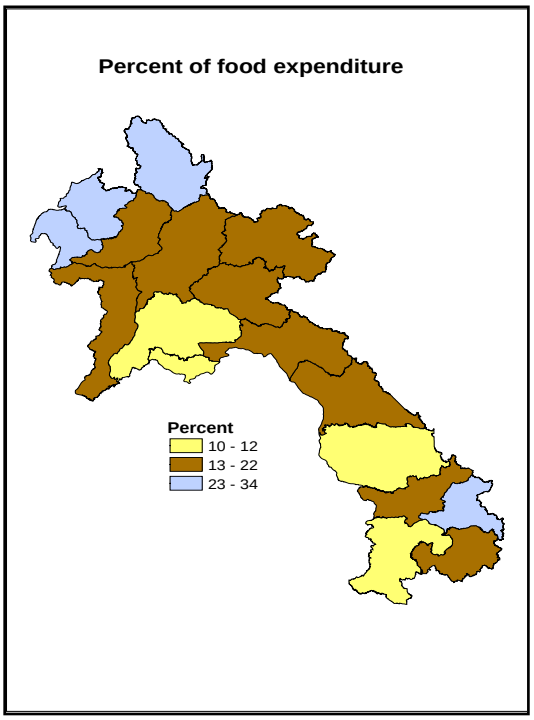


Table 3.1: Household consumption by group of goods and services. Monthly average consumption in thousand Kip.

Group of products and services	Monthly consumption (1000 kip)		Share of total (%)
Food expenditure	492.5	(± 0.1)	22.7
Consumption of own produced food	507.0	(± 0.1)	23.4
Clothing and footwear	43.7	(± 0.3)	2.0
Housing	273.7	(± 0.2)	12.6
Household utensils and operations	93.3	(± 0.3)	4.3
Medical care	38.9	(± 0.6)	1.8
Transport and communications	429.9	(± 0.6)	19.8
Education	27.9	(± 0.8)	1.3
Personal care	56.3	(± 0.7)	2.6
Recreation	105.9	(± 0.5)	4.9
Alcohol and tobacco	49.2	(± 0.3)	2.3
Others	52.4	(± 0.5)	2.4
Total	**2170.7**	**(± 5.0)**	**100.0**

Table 3.2 shows changes in type of consumption of Lao people during the last 15 years starting from 1992-93 until 2007-08. In the 1990th, consumption of food was the dominating consumption item with a proportion of the total consumption of more than 60%. It can be noted that this expenditure is decreasing from 64.3% in 1992-93 to 46.1% in 2007-2008. At the same time, the consumption of own produced food is also decreasing, e.g. decrease from 38% in 1992-93 to 23.4% of total consumption in 2007-08. The expenditure ratio on foods, paid by cash, is still on the same level e.g. about 26% in the first three surveys and decreasing a little bit according to the result of the survey in 2007-08.

When the share of food consumption is decreasing, the share of consumption of other items is increased. Notable is that the consumption of transport and telecommunication services has highly increased, from 6% to almost 20%, during the 15 year period. In addition, the consumption of living facilities, especially construction and maintenance of the house has increased. This expenditure has an increasing proportion compared to the total consumption (7% in the 1990th and 12% in the 2000th).