



# National Household Income and Expenditure Survey ENIGH, 2018

METHODOLOGY

San José, Costa Rica  
MARCH 2020



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## National Institute of Statistics and Census (INEC)

### Continuous Statistics Office

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## Presentation

The National Household Income and Expenditure Survey 2018 (ENIGH 2018) was conducted between February 2018 and March 2019, with a sample of 9 828 housing units.

This document describes the objectives, background and reference framework used for income and expenditure surveys, and establishes who the respondents of the survey will be. In the conceptual framework, the terms used to define the economic activity, employment, and income and expenditure are specified.

Subsequently, the main differences between ENIGH 2018 and the survey conducted in 2013 are contrasted, some uses and considerations to be considered by users of the survey are commented, and the sample selection methodology and related aspects are specified. Also, the information collection tools and the main employee classification terms are described, together with a comment on the processes applied to information prior to result analysis.

Information collection was conducted with four forms. The first form comprises 11 sections, including: housing unit characteristics and services; household holding of goods and services; characteristics of household members and their employment status; income from different sources and expenditure in installments on other transfers paid; loan payment installments; and financial services expenditure. Through form 2, a record of daily food expenditure and expenditure on goods frequently used throughout the week is obtained. In form 3 data on personal expenditure is collected. Lastly, in form 4, regular or less frequent expenditures are recorded (considering the previous month or the last three, six or twelve months as reference).

This methodology guideline intends to guide users towards an adequate analysis and interpretation of information, considering the definitions, limitations and improvements in ENIGH 2018.



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## Symbols, acronyms and initialisms

### Symbols

{,} In figures, it is used to separate decimals.

{ } In figures, from the decimal point to the left, a blank space is used every three numbers.

### Acronyms and initialisms

CAECR-2011	Costa Rican Classification of Economic Activities 2011
CCSS	Costa Rican Social Security Administration
COICOP	Classification of Individual Consumption According to Purpose
ECLAC	Economic Commission for Latin America and the Caribbean
CNP	National Production Council
COCR-2011	Costa Rican Classification of Occupations 2011
CV	Coefficient of variation
DEFF	Design effects
ENAHQ	National Household Survey
ENCS	Unincorporated enterprises
ENIGH	National Household Income and Expenditure Survey
INEC	National Institute of Statistics and Census
IMAS	Institute of Mixed Welfare
CPI	Consumer Price Index
NPI	Non-Profit Institutions
NPISH	Non-Profit Institutions Serving Households
JPSSJ	San José Social Welfare Board
MMV	2011 Housing Units Sampling Frame
UN	United Nations Organization
ILO	International Labour Organization
OECD	Organisation for Economic Co-operation and Development
ADP	Accelerated Data Program
PPS	Probability Proportional to Size
SNA	System of National Accounts
NSS	National Statistical System
PSU	Primary Sampling Unit
SSU	Secondary Sampling Unit



## Introduction

National household income and expenditure surveys provide updated information on the composition of the budget of Costa Rican households, whether they are composed of citizens or foreigners residing in the country. The surveys provide information on household income and its use for the acquisition of goods and services.

All information collected through this kind of surveys is key to learn about household consumption and income structures, as well as to guide the formulation of development policies and plans to maximize social wellbeing. In addition, the 2018 National Household Income and Expenditure Survey (ENIGH 2018) allows updating expenditure weights of the goods and services that form the Consumer Price Index (CPI) and generating the Basic Food Basket (BFB) used to measure poverty, at the same time it provides data to produce the household institutional accounts sequence of the System of National Accounts (SNA) and to update implicit expenditure structures in the accounts' base year.

This is the seventh time the survey is conducted in Costa Rica. It started on 12 February 2018 and ended on 6 March 2019. The National Institute of Statistics and Census (INEC) was in charge of all the phases, according to article 15 of Act 7839 of the National Statistical System, in force during the survey period, but repealed in June 2019 by Act 9694, stating:

“INEC shall be responsible for the production of the following national statistics:  
...c) those obtained from multiple purposes housing surveys, agriculture surveys, household income and expenditure surveys, economic surveys and consumer price index, goods and services producer surveys, and foreign trade surveys.”

The ENIGH 2018 project comprises all stages and processes established for the development of statistical operations through sample surveys, as defined in the level 1 processes below:

- Statistical design
- Data and information collection
- Data and information processing
- Results analysis
- Statistical output production
- Results dissemination

This document contains all necessary aspects to explain the procedures conducted during such stages, which include from the conceptual and execution framework to the dissemination of results linked to the ENIGH 2018 version.

The document is distributed as follows: Chapter 1 contains the background, objectives and reference framework; chapter 2 contains the conceptual framework; chapter 3 contains the statistical design, followed by collection methodology, and results processing and dissemination in chapters 4 and 5, respectively. Finally, chapter 6 contains an overview of the main changes in ENIGH 2018 in relation to the previous survey (ENIGH 2013).

# 1. Background, objectives and reference framework

## 1.1 Survey background

Household income and expenditure surveys are those with greater historical trajectory in Costa Rica due to the importance of updating the CPI. In addition, Act 9694 (repealing Act 7839 under which the INEC was created) currently establishes their conduct, as these surveys provide statistics on various topics of national interest. Thus these surveys have been conducted on six other occasions, showing a significant evolution in terms of geographic and thematic scope, according to the needs of users and international recommendations.

The first income and expenditure survey in Costa Rica was conducted by the General Directorate of Statistics and Censuses in 1949. The General Directorate was responsible for these surveys until 1998, when the National Institute of Statistics and Census was created under Act 7839 as an autonomous entity; since then, this institute has been responsible for conducting these surveys.

The surveys have been improved in regards to geographic and population coverage. In addition, each survey conducted has implemented a broader and more detailed scope, which allows for the production of more information for the study of households in the country, and for the development of poverty measurement methodologies and social and economic research.

The main objective of the first two surveys was to define the household expenditure structure and establish and update the weighting coefficients of the Consumer Price Index. However, the surveys also aimed to determine the structure and distribution of income, provide information to improve national account estimations, and conduct social analyses of the reference populations (San José, Metropolitan Area and urban areas, respectively).

The initial objectives of the 1988 and 2004 surveys remained unchanged, but were applied at a national level. Additionally, a form was included for income and expenditure of farmers and for financial transfers.

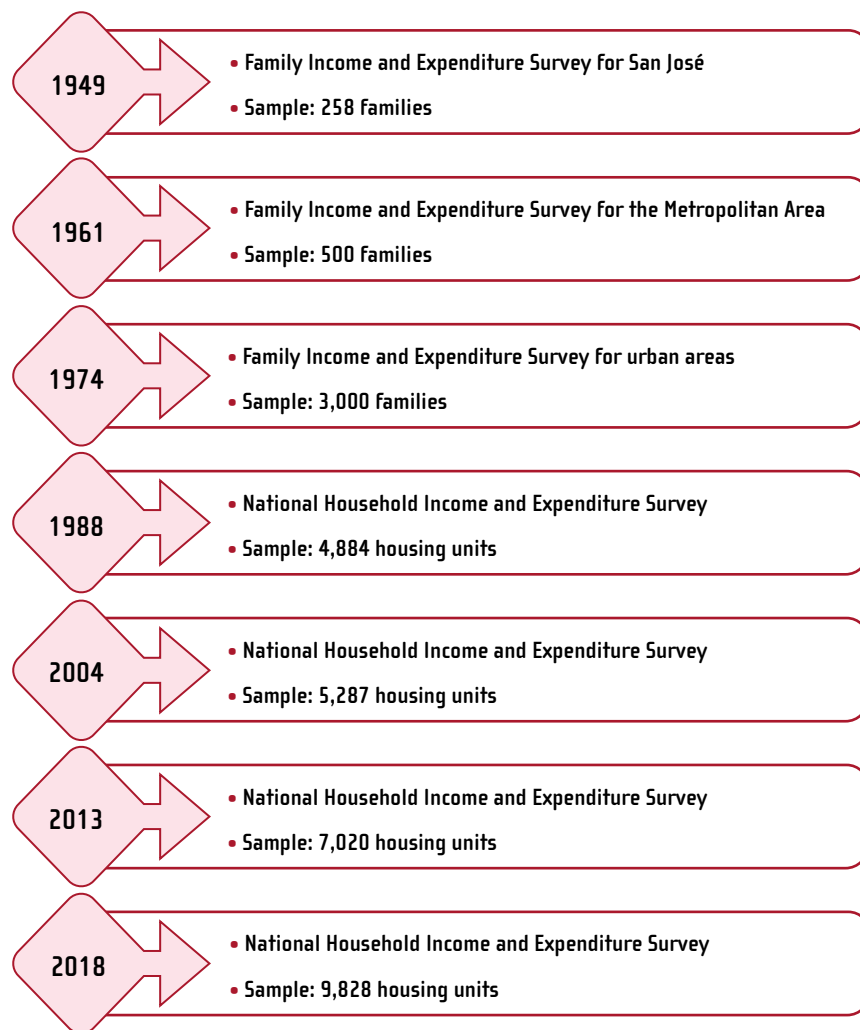
The last two surveys, ENIGH 2013 and ENIGH 2018, have been used increasingly in the specific account for the household sector, which initially was estimated separately within the national accounts, taking 2012 and 2017 as base years. Also, it has been increasingly used to estimate the calorie intake from foods, as well as to formulate the Basic Tax Basket, which is exempt from taxes completely (or almost completely) according to the consumption of lower income households.

For the first time, conducting this survey in 2018 responds to various international recommendations regarding the production of this kind of operations at least every five years, as well as the recent commitment the country made to update the CPI basket during this period, as part of the assessment for its accession to the OECD.

The figure below shows a summary of the year, study area and sample size of the seven surveys conducted.

FIGURE 1.1

## Costa Rica. Income and expenditure surveys conducted in Costa Rica



## 1.2 Objectives

### General objective:

To provide timely and detailed information on the origin and structure of income and expenditure patterns of households, as well as other aspects related to well-being measurement.

### Specific objectives:

- To determine the household expenditure structure for the analysis of consumption and fulfillment of basic needs.
- To collect information required to update expenditure weighting coefficients for the goods and services that compose the Consumer Price Index consumer basket.

- To provide information that allows updating the Basic Food Basket and its cost.
- To determine the sources of income of households, in order to know their structure and distribution.
- To provide information required for the macroeconomic composition of the household account in the System of National Accounts.

### 1.3 Reference framework

Similarly to the previous version, ENIGH 2018 was based on a series of recommendations, summarized in several documents, which served as reference for multiple topics in this survey. Some of the main topics include: Income and expenditure statistics (International Labour Organization, 2003), Handbook on Household Income Statistics (Canberra Group, 2011), the System of National Accounts Handbook (System of National Accounts, 2008), the Household Consumer Income and Expenditure document within the framework of the System of National Accounts (SNA), and the study on Household Surveys by ECLAC (Camelo, 2001). In addition, this survey was also based on the experience of INEC with the Continuous Employment Survey (ECE), the National Household Survey (ENAHQ), the ENIGH 2013, and other household income and expenditure surveys conducted in other countries, including the 7th and 8th Surveys on Family Budgets of Chile, the National Household Budget Survey 2016-2017 of Colombia, and the Household Income and Expenditure Survey 2016-2017 of Uruguay.

#### 1.3.1 Geographic framework

ENIGH 2018 was conducted at a national level. The survey involved 468 Primary Sampling Units (PSU), each of which was composed of a selection of 21 housing units, distributed across all the planning regions.

PSUs are the geographic areas built by the INEC Cartography Unit from census maps, searching for a size as homogeneous as possible according to the number of housing units: in urban areas, PSUs have an average of 150 housing units, and in rural areas they have an average of 100 housing units (Cartography Unit, INEC, 2014).

Sample selection is representative by area, urban and rural, and at regional level: Central, Chorotega, Pacific Central, Brunca, Huetar Caribbean and Huetar North.

#### 1.3.2 Time periods

Given the nature of this type of survey, three time periods must be considered: the survey period, the reference period and the estimation period.

The survey period is the time period during which field work occurs (visits to housing units) in order to collect household information through interviews. Visits were made from 12 February 2018 to 6 March 2019, for a total of 36 collection periods of 10 days each ("ten-day periods").

The reference period is the period from which income and expenditure information is requested. For the variables, the reference period should be sufficiently short so that data providers are able to remember events and transactions easily and thus avoid omissions. Accordingly, this period should be sufficiently long so that it comprises a significant number of events or transactions.

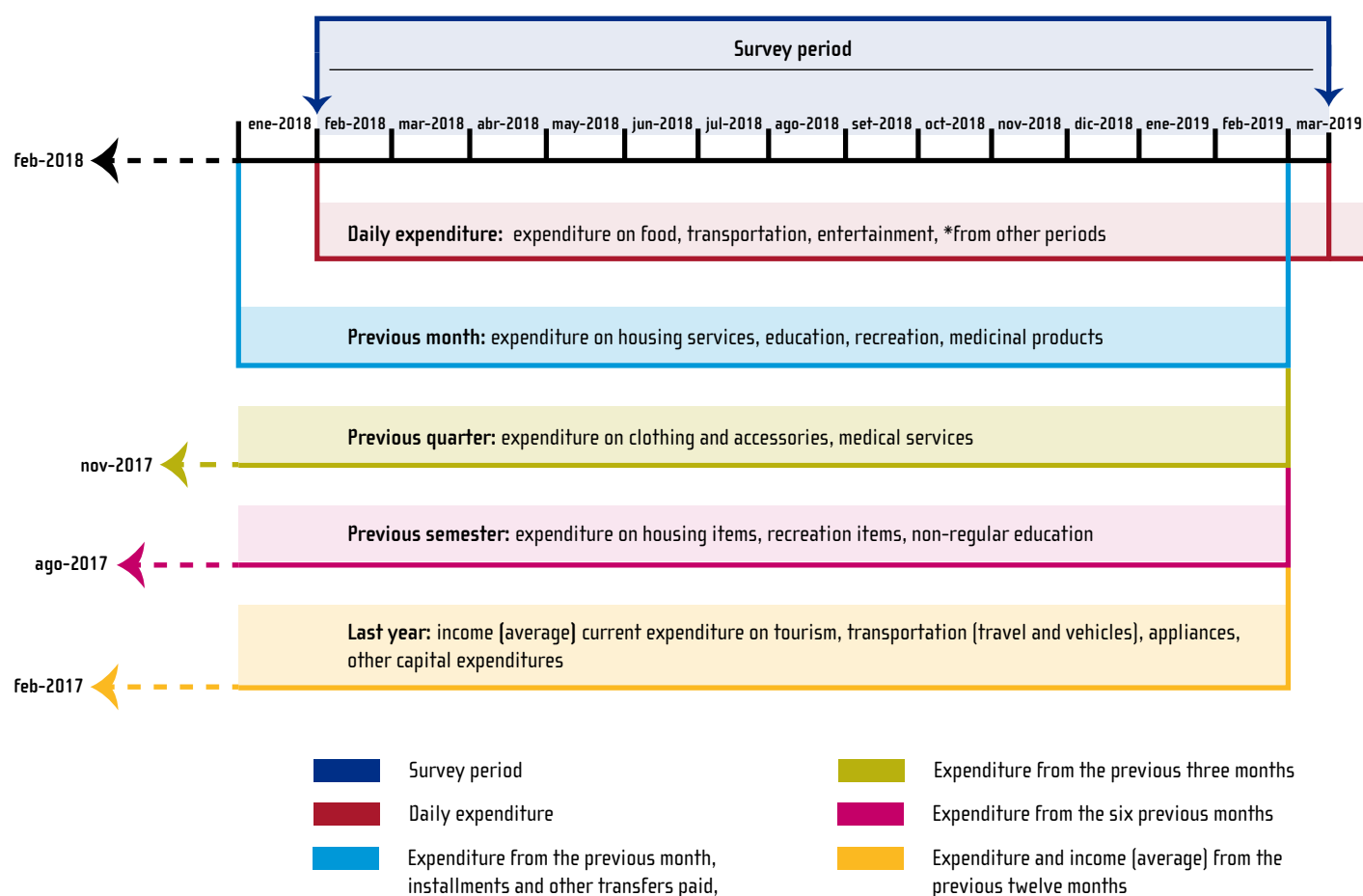
Reference periods may vary according to the need to collect study variables. In the case of ENIGH 2018, the expenditure variable periods are: the week of the interview, the previous month, the last three months, the last six months, and the last twelve months. Although there is no specific recommendation or a single practice for all countries, shorter periods are generally used at greater purchasing frequencies, and longer periods are used for goods and services of longer durations and greater amounts.

In the case of income-related variables, the reference period is the previous month and the last twelve months<sup>1/</sup>. As for occupation status and employment characteristics, the reference period is the week before the interview; and for housing unit conditions and socio-demographic characteristics, it is the time of the interview.

To differentiate among data providers from the different periods, several forms are used during the visits to their households.

The following diagram shows the reference period for the main survey variables (*income* and *expenditure*) considering the inclusion of all subsamples (ten-day periods) collected and, therefore, the entire data reference period.

FIGURE 1.2  
Costa Rica. Reference periods of income and expenditure data of ENIGH 2018



1/ Although information is collected from both income reference periods, the average current income of the household for the last year is used for publication purposes. This decision is due to the greater comparability that may be associated to the expenditure of the last year, thus allowing a clearer understanding of how household current expenditure is financed during a longer period.

As the survey collection period ended on March 6, February 2019 is the last full month from which information was collected. From mid-February 2018 to the first four days of March 2019, daily record expenditures are collected (goods and services considered in recall periods may be included if acquired during the week of the interview). The period of expenditure from the previous month ranges between January 2018 to mid-February 2019; quarterly expenditure information was collected from November 2017 to mid-February 2019, and biannual expenditure information from August 2017 until mid-February 2019. Finally, the reference period for expenditure of the last 12 months and income was from February 2017 to mid-February 2019<sup>a/</sup>.

For the purpose of data analysis and publication, an estimation period is considered to standardize the information collected on income and expenditure. This period is an “average month,” so that each expenditure is converted into monthly values: to daily-use goods and services a multiplicative factor is applied (4.33); quarterly, biannual and annual expenditures are divided by 3, 6 and 12, respectively; and monthly expenditures are kept unchanged. Similarly, in the case of income, it is expressed in monthly values, but data providers are asked directly their monthly income average from each source for the last year. For income usually received once a year, the total amount for the last year is divided by 12.

### 1.3.3 Population

This survey is applied to persons usually resident in households from the sample of 9 828 individual housing units and multi-unit dwellings (“*cuarterías*”) selected. In other words, collective housing units (containing six or more households), hotels, hospitals, boarding houses, jails, boarding schools, and other types of accommodations different from multi-unit dwelling, are excluded.

The term “persons usually resident in the households” is defined as those household members who reside in the housing unit and meet the requirements specified in section 1.3.4.3. Should none of them reside in the selected housing unit, the household would only be composed of persons not usually resident in the household and would thus be excluded from participation in the survey. The design used is representative of the entire country population (and by area and region), resident in individual housing units.

### 1.3.4 Objects of study

The concepts of *housing unit* and each *budgetary* unit are defined below. The characteristics persons have to meet in order to be a part of the study population are also described.

#### 1.3.4.1 Housing unit

A housing unit is a construction work surrounded by walls and covered by a roof, where persons sleep, prepare meals, and protect themselves from weather. To be considered a housing unit, this structure must have an entrance or direct access from the street or through hallways, stairs, backyards or other, without having to enter another housing unit first. Two types of housing units exist: individual housing unit and collective housing unit.

1. **Individual housing unit:** a facility structurally separated and independent, used to accommodate one person (single-member) or a group of persons (one or more households).

---

a/ Annex 1 includes a table with reference dates of expenditure from other periods or recall dates for each of the interview periods (subsamples).

2. **Collective housing unit:** any facility used by the government, a private enterprise, or an institution to solve social needs or specific shared-accommodation interests. It is inhabited by persons, usually with no kinship relationship, who live together for health, education, religion, work, or other reasons. In most cases, a third party imposes a set of rules for co-existence that residents have to respect. Examples of collective housing units include hospitals, jails, orphanages, boarding houses, student dorms, nursing homes, and convents.

Collective housing units are excluded from this survey. They account for 0,07% of the total number of housing units in the country, according to data from the Housing and Population Census 2011 (INEC). These units are quite heterogeneous, with very specific characteristics requiring other research tools.

In the case of households with more than one housing unit (for instance, one to spend most of the time and the other for vacation), the household is thus considered to have a main residence (where persons reside most of the time) and a secondary residence (temporary residence).

#### 1.3.4.2 Individual household

It refers to one person or group of persons, usual residents of an individual housing unit, with or without kinship relationships, who pool some, or all, of their income and wealth and who consume certain types of goods and services collectively, mainly housing and food (System of National Accounts, 2008, page 71, paragraph 4.4).

One or more individual households can live in the same housing unit. When a housing unit is inhabited by two or more individual households, the household of the housing unit owner, the household of the person who received it as a loan or as payment for work done, or the household of the person who made a verbal or written agreement with the lesser (rented housing units) is considered the main household.

Should two households in a housing unit claim the same rights over it, the main household will be considered to be the one with the largest number of members. Should more than one individual household exist in the same housing unit, all existing households are to be studied, starting with the main household.

#### 1.3.4.3 Usual resident

A person is considered to be a usual resident of a housing unit if he/she meets at least one of the following criteria:

- Usually resides in the housing unit and, at the time of the interview, has lived in it for over six months.
- Has lived in it for six months or less but intends to stay for a period longer than six months.
- Has lived in it for six months or less, has no intention of staying for over six months but has no other fixed place to stay.
- Is temporarily absent from the housing unit due to circumstantial reasons (work, studies, travel, etc.) but is never absent for over six months.

#### 1.3.4.4 Household member

It refers to the person usually resident in the housing unit who contributes to the shared household budget or otherwise depends on it, holds any right over the household collective resources, and takes part in the decision-making process related to consumption or other economic activities performed jointly by the household.

The following persons usually resident in the housing unit are not considered household members:

- Paid servants and other domestic workers who reside in the same housing unit as the employer and are provided with housing and food as remuneration in kind. These employees are not entitled to the collective resources in their employer's households; therefore, they must be considered members of a different household.
- Persons admitted to institutions such as convents, jails, and nursing homes, who will likely live there for a period longer than six months. They must be considered as collective household members.
- Persons performing volunteer activities and living in the household for over six months because of a special assignment but who have another household in the country or abroad.
- Students from other areas of the country who are living in the household without paying any accommodation fee and for a period longer than six months during the school year.
- Exchange students who are residing in a household for over six months while completing their studies and who have a household outside the country.
- Lodgers paying for accommodation, food or both who do not have another usual residence.

## 2. Conceptual framework and data collection tools

This chapter contains the definitions of the main variables measured by ENIGH 2018 related to the economic activity condition and employment of persons, as well as household income and expenditure, including criteria that define their measurement in practice for the purposes of this study.

Although the survey deals with income and expenditure, defining the concepts of *activity* and *employment* is necessary, in order to better understand where income comes from and how each source of income is defined, especially those that are work-related.

Most definitions are established by the recommendations of statistics offices of international organizations such as ILO, ECLAC and the UN.

In addition, the chapter also describes the questionnaires used to collect such information.

### 2.1 Occupation and employment

#### 2.1.1 Economic activity

*Economic activity* is understood as the set of actions and activities conducted by individuals, institutions and enterprises with the purpose of producing goods and services for sale or exchange in the market, as well as those provided for free or for prices lower than market prices. Productive activities include agricultural activities, mining, manufacturing, construction, and rendering of services, including trade.

In addition, productive activities also include the production of goods for own final consumption, fixed capital formation, the services of owner-occupied households, and paid domestic services, as recommended in the System of National Accounts Handbook (SNA, 2008).

Accordingly, service production activities in the household for own final consumption are excluded, such as cleaning, decorating, repairing, preparing meals, child care and care giving, transport, etc.

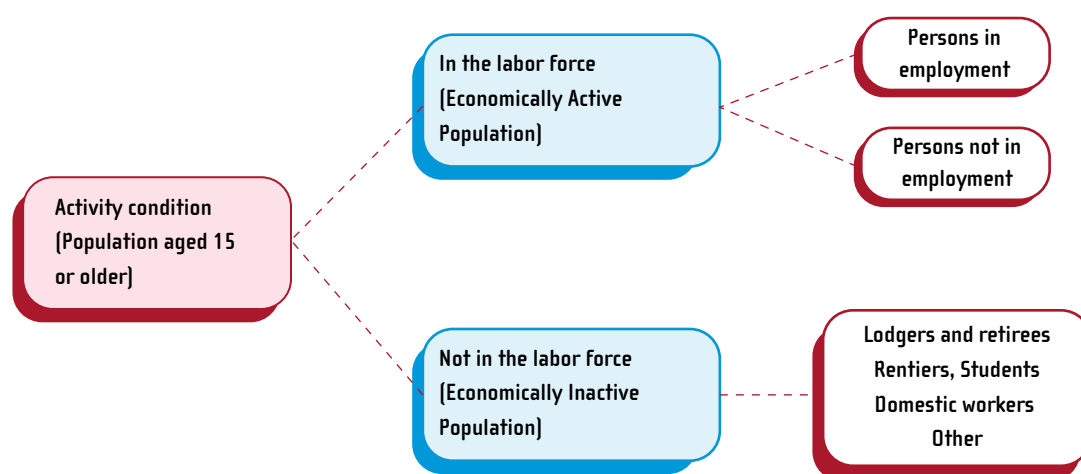
Furthermore, despite the provisions of the System of National Accounts, the participation in agricultural production activities exclusively for own consumption will be excluded as economic activity given the difficulty to assess it when there is no sale of products to third parties.

### 2.1.2 Activity condition<sup>2/</sup>

*Activity condition* refers to the characterization of the population aged 15<sup>b/</sup> or older, as working-age population, according to their participation in the job market during the reference period. According to their activity condition, the population is classified as labor force or population not in the labor force.

FIGURE 2.1

Costa Rica. Concept of activity condition



### 2.1.3 Labor force

It refers to the set of household members aged 15 or older who, at the time of the interview, were participating in the production of economic goods and services or were otherwise willing to participate; in other words, the population in employment and the population not in employment. It is also referred to as *Economically Active Population* [EAP].

<sup>2/</sup> The methodological framework, questions, and response categories to be used in this section and the following were made compatible with those of the Continuous Employment Survey [ECE in Spanish], in order to achieve an adequate correspondence between both studies and to estimate the difference between recording work-related income through a continuous employment survey and through a more complete survey as the ENIGH.

<sup>b/</sup> The foregoing is due to the following: a) consistency with the minimum working age established in the Code on Children and Adolescents; b) the constitutional guarantee of covering compulsory schooling up to Basic General Education (9th grade); c) the decrease in the economic participation of adolescents, consistent with an increase in the schooling rates; d) the reduction of costs by researching on a smaller population.

### 2.1.3.1 Population in employment:

It refers to household members aged 15 or older who performed any economic activity, for at least an hour, during the reference week, or who were employed but were temporarily absent during that week due to circumstantial, planned or unexpected reasons (sickness, vacation, strike, scholarship, damage to equipment, flooding, etc.).

### 2.1.3.2 Population not in employment:

It groups household members aged 15 or older who met the following criteria in the reference period:

- They were unemployed during the week prior to the interview, in other words, they neither had a paid employment nor were self-employed.
- They were available to work during the week prior to the interview, either as paid employee or self-employed.
- They have been actively looking for a job during the five weeks prior to the interview; in other words, they conducted specific procedures to find paid employment, such as filling out online or print applications; searching in enterprises, factories, agricultural plantations; resorting to the help of family or friends; or they conducted procedures to establish their own business.

### 2.1.4 Population not in the labor force

It is composed by household members aged 15 or older who are not in the labor force; in other words, they are not considered neither in employment nor not in employment, according to the previous definitions.

The population not in the labor force includes:

- **Lodgers or retirees:** household members who receive an allowance on a regular basis due to disability, old age or war pension, among others.
- **Rentiers:** household members who receive income on a regular basis from the renting of property, deposit interest, holding of financial instruments, royalties, dividends, company earnings, or others.
- **Students:** household members who attend regular school courses, at the level of primary education, secondary education, university, etc.
- **Persons conducting household activities:** household members who only participate in the chores of their own housing unit.
- **Persons with disabilities unfit for work:** household members whose physical or mental conditions render them unfit for work.
- **Others:** household members not included in any of the previous categories, for example, older persons, persons not engaged in work or chores, and discouraged persons.

### 2.1.5 Employment

Employment comprises the set of tasks assigned to a person, or that may be assigned, performed on own account or for an employer. Employment may be classified according to the contractual relationship and working conditions established by employers for employees, or self-defined for self-employed persons.

### 2.1.5.1 Paid employment

Paid employment occurs when a household member enters into a formal or informal employment agreement with an enterprise or person, under which he/she receives basic remuneration during a certain period. This type of employment is generally paid in wages and salaries, but may also be paid in sale commissions, in kind, among others.

### 2.1.5.2 Self-employment

It is performed by household members who do not receive a fixed compensation on a monthly basis or for a set period of time, as it depends directly on the benefits derived from the goods and services produced. Self-employed workers make the operational decisions that affect the company, or delegate that decision making, but keep the responsibility. Employers (who hire staff for their activity), own-account workers (who do not hire staff), unpaid family workers, and producer cooperative members are included.

### 2.1.5.3 Temporary absence from work

Temporary absence from work occurs when the persons in employment do not work during the reference week due to circumstantial reasons but still hold a formal relation with their activity. There is a difference between absence from work in paid employment and in self-employment.

In the case of paid employment, persons in employment are considered absent from work in the following conditions:

- When there is continuity in the total or partial monetary remuneration from the employer during the period of absence.
- When the absence is attributed to work situations and no payment is received during the absence or interruption of work, as long as the period of absence does not exceed one month.
- When the absence is attributed to personal situations and no payment is received during the interruption of work, as long as a return date is set, or the period of absence does not exceed one month.

Regarding self-employment, the person absent from work is considered in employment in the following conditions:

- When in spite of having a commercial unit or office, the person did not work because no customers arrived and no work was requested.
- When a temporary closure or cease of operations occurs (due to remodeling or repairing of facilities, equipment maintenance or malfunction, bad weather, etc.) without receiving income, as long as it does not exceed one month.

The temporary absence criterion does not apply to unpaid workers and those working without a job position in a company (occasional work); in other words, they are not considered to have an occupation if they did not work during the reference week.

#### 2.1.5.4 Number of jobs

Persons in employment may have more than one job during the reference period, and these are determined by the number of establishments in which the person works or different occupations performed. Domestic workers working in several individual households are excluded, as households are not considered production economic units. Therefore, if the person conducts the same type of domestic work in several households, the person is considered to have only one job. Persons usually working in occasional or sporadic activities, such as occasional agricultural workers in various farms, are excluded, given their brief, nonsimultaneous involvement with the production unit, as well as the case of casual workers.

If the person holds more than one job, the main employment and the secondary employment must be distinguished.

1. **Main employment:** the job in which the employee worked for the longest time during the reference period. Should the same amount of time be reported for both, the one generating the highest income is considered the main job.
2. **Secondary employment:** the “additional” job in which fewer hours were worked during the reference period, or the one generating less income in comparison with the main employment (in case both require the same number of hours).

#### 2.1.5.5 Status in employment

It is the identification of the persons in employment according to their status in employment, whether it is dependent or independent, under the following categories:

1. **Active employer or partner:** a person who owns an enterprise, individually or jointly, who is self-employed and who hires one or more paid workers continuously. The enterprise owner has control over the management and operation; however, this control may be partial or even non-existent.

This category includes:

- The owner contributing labor to the enterprise without receiving any specific or usual salary in return, but receiving profits or earnings in his/her capacity as business owner, where no distinction is made between capital gains and remuneration for work.
- The owner of unincorporated enterprises (ENCs<sup>3/</sup>) who works for him or herself and hires personnel to render a service to other enterprises, developing the productive process outside the company who hires him/her (outworker<sup>4/</sup>). This person agrees with the enterprise to provide a certain amount of goods or services, while the hiring company remains outside the productive process conducted by the worker, yet in control of the quality of the requested product or service. In addition, production costs (equipment, materials or others) may or may not be provided by the hiring company.

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3/ ENCSs are households that produce goods and services for sale or own consumption. They are not incorporated as a legal entity separate from the household.

4/ System of National Accounts, 2008. p. 10, paragraphs from 7.34 to 7.38.

This category does not include persons who own incorporated enterprises, who do not work in the enterprise and only receive accountability reports of the activities developed. They are considered not in the labor force.

2. **Own-account workers:** persons using their own labor force, by themselves or with one or more partners, in order to run their own company, or otherwise practice a profession or occupation independently, without hiring paid personnel continuously. As owner, this person makes all decisions concerning the economic activity performed.

The following are included in this category:

- Owners or family members who are partners in an unincorporated enterprise, who work in their own activity or enterprise, and who receive income making no distinction between compensation received for work done and profit or income received from self-employment.
  - Workers rendering a service to an enterprise without any formal or informal work contract or agreement with the hiring enterprise, and who receive remuneration based on the value of the goods or services used as production supplies (intermediate goods or services), make decisions on production and services, and do not have any control of the conditions for purchasing goods or selling their production, as their economic activity is intended for a single client.
  - The occasional worker<sup>5/</sup> who develops an economic activity of his/her own, either because it is a one-time activity or it is performed upon request and coincides with the reference week.
3. **Paid employee:** a person working in a dependent relationship with a private enterprise (incorporated or not) or with the Government (public sector), who receives a wage or salary as compensation for work, whether monetary, in kind, or both. These workers do not participate in the decision-making process or management of production relations. The following are included in this category:
    - Owners or family members who are partners in an incorporated enterprise, or family members who receive a salary for working in the company and whose salary is unrelated to the benefits they may receive from the profitability of the business. Also included are persons who work in their own activity or unincorporated enterprise that behaves in much the same way as incorporated companies and holds separate and sufficient accounting records (called quasi-corporations in the SNA).
    - Paid workers with a work relationship (under a work contract or agreement) with an enterprise to which he/she undertakes to render a certain good or service, outside enterprise premises and, in turn, the enterprise provides equipment and material, or both, in order to develop the work.
    - Domestic staff in a dependent relationship with one or more households, performing domestic tasks and receiving a wage or salary as compensation for their work, whether monetary, in kind, or both.
  4. **Unpaid worker:** a person working for an enterprise or independent worker without receiving compensation in cash or in kind for the work done. An unpaid worker does not participate in the decisions related to production methods or purchase and sale of goods, and the activity in which he/she is engaged is dedicated to the production of goods for sale or the rendering of services.

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<sup>5/</sup> Casual workers are an example of occasional workers that, unlike persons who coincidentally worked during the reference week, meet the periodicity criteria.

### 2.1.5.6 Work hours

It is the period of time spent performing activities that contribute to the production of goods and services. Work hours are classified as regular hours and hours actually worked.

1. **Regular hours:** regular hours are those regularly worked by any person according to the schedule for which they were hired. It includes overtime if they are regular, and hours not worked due to illness, leave, or public holidays are not considered. In the case of self-employment, regular hours are those regularly worked according to the person's own work schedule.
2. **Hours actually worked:** It is the number of hours actually worked weekly by any person present at their job, including overtime worked (paid or not) during the reference period, but excluding the time absent from work due to reasons unrelated to work whether paid or unpaid).

### 2.1.5.7 Other employment characteristics

Other characteristics required for each employment (primary or secondary) are: classification of the economic activity, institutional sector of the economic establishment where the person works, occupation, among others. For these characteristics, the definitions and coding recommended by the NSS handbooks are used: Costa Rican Classification of Economic Activities (CAECR 2011) and Costa Rican Classification of Occupations (COCR 2011), consisting of five and four digits, respectively.

## 2.2 Household income

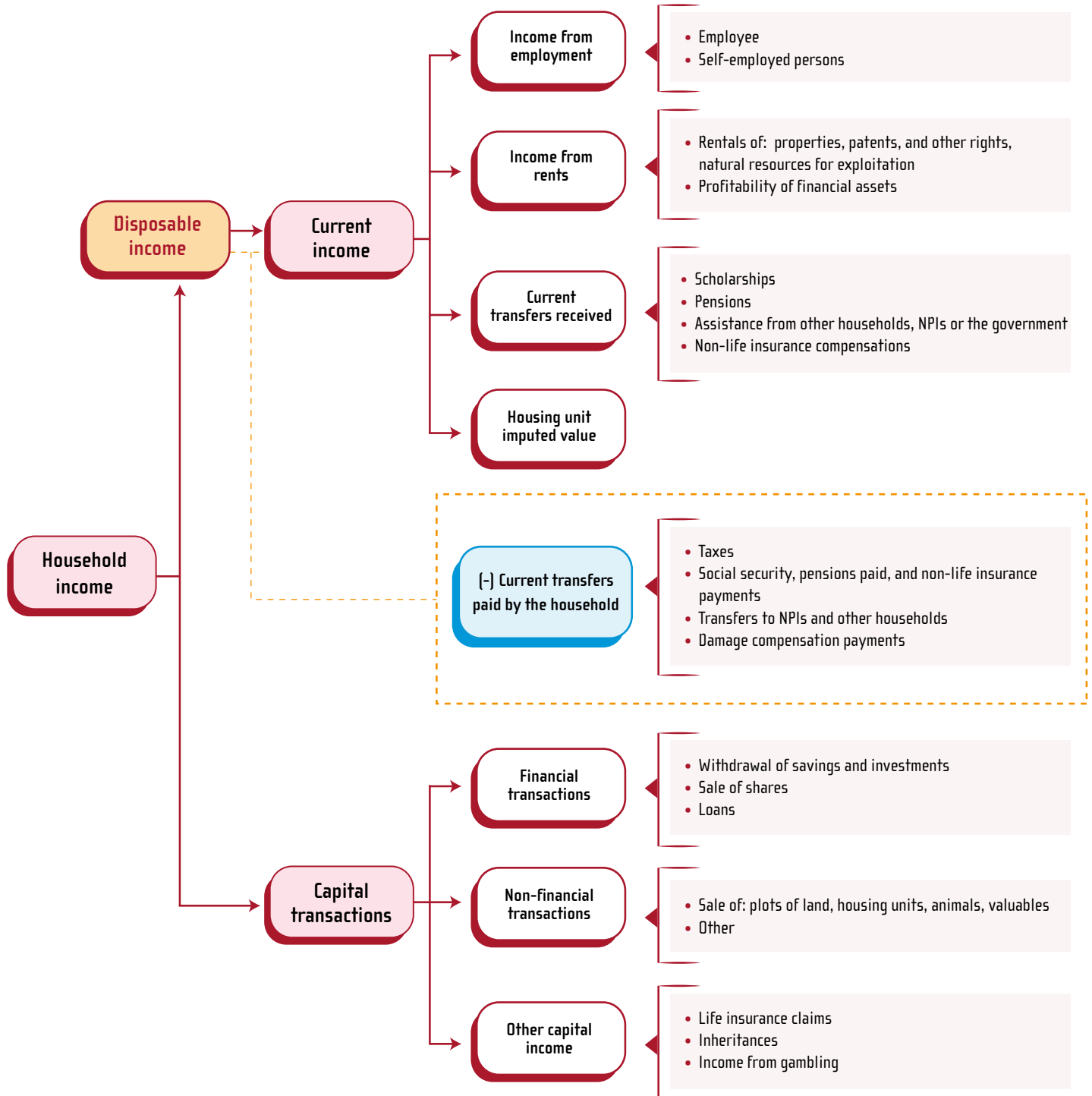
One of the most important aspects of the ENIGH is to provide updated information on the budgetary composition of Costa Rican households and foreign resident households, by knowing their income and how they use it for the acquisition of goods and services.

For this reason, the concept of income, including its measurement and composition, is studied thoroughly, in order to collect relevant information to show accurate results consistent with the System of National Accounts, and to allow for studies related to wellbeing and the comparison with other household research results.

Household income may be classified as current income and other non-current income, referred to as *capital financial transactions*. In addition, the concept of disposable income is added, which is generally recommended for income distribution, consumption and savings analyses. The following diagram shows the components regarded in the definition of total income.

FIGURE 2.2

Costa Rica. Household income classification



### 2.2.1 Current income

As one of the main objectives of ENIGH is to collect and measure the regular income received by households to fulfill their consumption needs, focus is placed mainly on measuring current income defined as: “All receipts in cash, in kind or in services, that are usually recurrent and regular and are received by the household or by individual members of the household at annual or at less frequent intervals. During the reference period when they are received, such receipts are potentially available for actual consumption and, as a rule, do not reduce the net worth of the household.” (ILO. p. 11, par. 4.5. 2003)<sup>6/</sup>.

The main characteristics of this concept are established below:

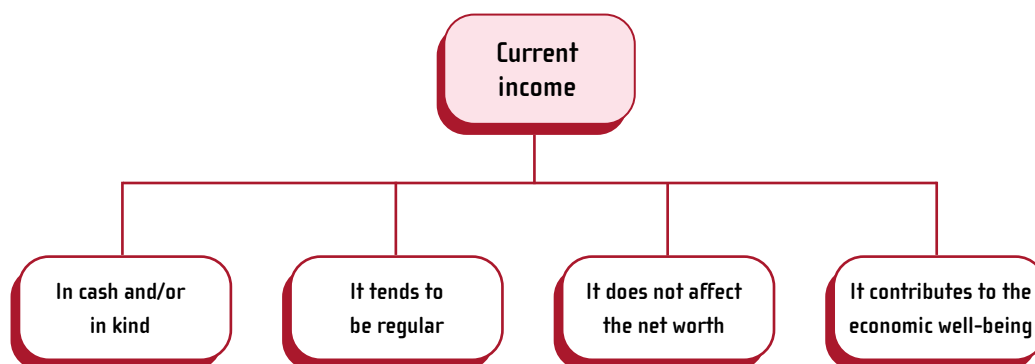
- It may be received in cash or in kind (either as goods or services), or both.
- It must be regular or recurrent, as it is received and expected by households for their usual consumption. Accordingly, it is determined it must be received at least on a yearly basis or less frequently, although exceptions exist concerning this periodicity, as detailed further on.
- Transactions that modify the net worth, for example, income received for the sale of property and machinery (drawing down on assets), income received for a loan requested (increasing liabilities) or inheritance, among others, are excluded. This is because households usually do not receive this income as part of their consumption budget.
- It must contribute to the economic well-being of the household, wellbeing understood as the ability of households to fulfill their needs.

As methodology for measuring this income, the International Labour Organization (ILO, 2003) recommendation consisting of dividing its components in major groups according to source is adopted. Moreover, these sources can be divided in different ways. Figure 2.3 shows the composition suggested for ENIGH in operational terms.

Each of the sources of current income mentioned above are defined below.

FIGURE 2.3

#### Costa Rica. Current income characteristics



<sup>6/</sup> Net worth is the difference between the set of assets (property, goods, rights and obligations) minus the liabilities (debts); in other words, the difference between the total assets and total liabilities is called net worth.

### 2.2.1.1 Income from employment

All receipts in cash or in kind (valued at market price) for participation in paid employment or self-employment (employer and/or own-account).

#### 2.2.1.1.1 Employee income

Employee income comprises “direct salaries for time worked and work done, cash bonuses and gratuities, commissions and tips, directors’ fees, profit-sharing bonuses and other forms of profit-related pay, or other remuneration, remuneration for time not worked, free or subsidized goods and services from an employer, and severance and termination pay.” (ILO, p. 13, par. 5.2. 2003).

Employee income is divided by payment method as follows:

1. **Income in cash:** all income in cash received by an employee, comprising:
  - a. **Gross wages and salaries<sup>7/</sup>:** wages and salaries are defined as “remuneration payable at regular intervals (i.e.: weekly, monthly or otherwise) including payments by results and piecework payments.” (United Nations et al., par. 7.44, 2008). The concept of gross wages and salaries also comprises the incentives for exclusivity of employment, seniority, annuities, career, and others.
  - b. **Income additional to gross salary:** occasional payments for good performance, goals achieved, customer satisfaction, legal regulations, or fulfillment of functions and tasks. These include the following:
    - **Overtime:** payments in cash for the hours worked exceeding the working day agreed upon in the contract of employment.
    - **Christmas salary bonus:** payment corresponding to a “thirteenth month,” calculated as the average of all gross monetary income (salary and additional income) received during a year.
    - **School salary:** it is the withholding by the employer in the amount of 8,19% of the monthly income received during a calendar year, paid at the end of January of the following year. It is compulsory solely for public sector employees.
    - **Profits, incentives and bonuses:** income in cash received by the employee as a result of the distribution among the employees of part of the total profits of the company.
    - **Allowance:** payments in cash payable to senior officers or executives as remuneration for any company meetings attended.
    - **Commissions:** income in cash generally paid in proportion to sales or products and services placed on the market. An employee may not have a base salary and receive remuneration only as commissions.
    - **Tips:** gratuities that are occasionally paid in cash by customers to employees for service provided or work done. These include the service tax and amounts the customer is willing to pay voluntarily. These payments are not included in the salary recorded by the employer.
    - **Per diem allowance:** cash provided to an employee covering work-related expenses, such as lodging and meals, while he/she is representing the company in the country or abroad. Expenses reimbursed through invoices are not included in per diem allowances.

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<sup>7/</sup> This refers to gross salaries with no deductions.

- **Other payments:** regular income in cash paid to employees by employers so the former may directly pay for goods and services not work-related, or otherwise spend on personal or family interests, for example, in the form of a monthly sum of money to pay for transportation to and from the work place.
  - c. **Severance and termination pay:** total amount in cash received by the employee upon dismissal by the company or employer, or termination of the contract of employment (benefits by law). These benefits include severance pay, accrued Christmas salary bonus, accrued vacation pay, and the corresponding salary. Although this income is not regular, it is included in the current income, as it is received by the dismissed or terminated employee to pay for consumption expenditure while looking for a new job. Therefore, pursuant to the recommendations by the ILO 2003 and the Canberra Group 2002, it is included in ENIGH.
2. **Payments in kind:** all goods and services furnished to employees as part of the working conditions. To be considered income in kind, these goods and services must not be required for work, and must be made available to the employee and the household members. These characteristics are mentioned in the following definition: “The remuneration in kind comprises all goods and services not required for work and that workers may use at their discretion during their free time, to satisfy their own needs or desires, or that of other household members.” (United Nations et al., par. 7.50, p. 14. 2008).

These payments in kind are regularly received as compensation for the work performed; therefore, employees do not pay for them. Otherwise, the cost of the goods or services received will be analyzed. If the recipient (employee) is unaware of the exact cost, they will be asked to assign an approximate cost (monetary value at market price).

Employees may receive goods and services that are partially subsidized. The cost is the difference between what the interviewee believes the service costs and the actual amount paid. For instance, if the recipient pays 75 colones a day for the bus service provided by the employer, and he/she believes the cost for the service is 200 colones, then the value of the payment in kind for the daily transportation service would be 125 colones.

The most common payments in kind are:

- **Transportation:** transportation services provided to employees by the company from or to convenient locations or the work place.
- **Food and beverages:** meals and beverages provided by employers so employees can take them home to their families.
- **Clothing and footwear:** all clothing and footwear provided by the employer that, because of its particular characteristics, the employee may wear in their spare time. Work uniforms not available for everyday use, such as police, chef and firefighter gear or attire, are excluded.
- **Cafeteria:** all meals prepared and served in a cafeteria for workers, subsidized or free of cost, including breakfast, lunch and dinner. If meals received are low-cost (a cup of coffee with no side dish, for instance), they are not considered for ENIGH purposes.
- **Child day care service:** service provided to the employee in which his/her children are taken care of at the company or at a children's center. It may be free of charge or subsidized.
- **Housing unit or room:** housing unit or room made available to the employee as part of pay for work done, for temporary or permanent residence, with or without family members. Since they are considered enterprise intermediate consumption, housing units and rooms are excluded when the employee and his/her family are not able to make use of them.

- **Water, electricity, and internet services:** the total or partial pay made by the employer for the employee's household water, electricity, and internet services.
- **Home phone and mobile phone:** home phone, mobile phone, or both, covered totally or partially by the employer for the employee's personal or work-related use.
- **Vehicle for own use:** the employer provides the employee with a vehicle for use during working hours as well as non-working hours.
- **Vehicle maintenance:** all expenses associated to the maintenance of the employee's personal vehicle (oil, licenses, repairs, among others) covered by the employee.
- **Fuel:** cost of fuel paid by the employer through coupons or any exchange items for the employee's personal use of the vehicle (provided by the company or his/her own).
- **Distribution of shares:** the option of offering company shares to employees as part of their remuneration for outstanding performance or high company profits. They are normally granted to high- and medium-ranking workers. They shall be calculated at market price at the time of offering to the recipient.

As opposed to payments in kind, certain additional types of goods and services granted by the company or employer are not considered employee income because they are provided as a requirement for the job and not to use during spare time or to meet the employee's needs or that of household members. These goods and services are considered enterprise intermediate consumption and are not to be taken into account. They include the following:

- Tools or equipment used exclusively or mainly at the work place.
- Clothing or footwear of a certain type that regular consumers do not choose to buy or wear as they are exclusively or mainly used at work, for example, protection clothing, overalls, or uniforms.
- Lodging service at the work place that may not be used by the employees' households: barracks, cabins, rooms, huts, etc.
- Special foods and beverages required due to the exceptional conditions of the work.
- Transportation and hotel services, included in food allowances provided while the employee is traveling in representation of the company.
- Locker room, washing room, bathroom, toilet and other services which are compulsory according to the type of work.
- First-aid services, medical exam and other health check-ups required due to the type of work.

#### 2.2.1.1.2 Income from self-employment

Income received, once production costs are subtracted (intermediate consumption), by workers who perform their own economic activity. Income comes from the sale of goods and services in the market, as well as from barter transactions, household consumption or a combination thereof. Production costs correspond to retribution to hired workers; cost of raw materials; insurance premiums; equipment maintenance; vehicles; water, gas and electricity; taxes; transportation services; advertising; professional services; rentals, and depreciation (decrease in the value of assets). All these expenses must be associated solely to the production process (intermediate consumption).

These activities are developed in households as producers of goods and services, which are defined as *unincorporated enterprises* (ENCs). Accounting for these activities plays a key role in defining income from self-employment, as they generally have partial or insufficient records, or no record at all. Due to the foregoing, it is not possible to separate income as remuneration received by the owner for the worked performed, for example, from income from the capital invested in the enterprise. For this reason, income from self-employment is called “mixed income<sup>8/</sup>.”

Therefore, mixed income includes net profits and losses of the enterprises and the net value of the goods produced used for own consumption and barter transactions, namely:

1. **Company profit and loss:** they are the profits and losses from net operations, that is to say, the difference between income for the sale of goods and services and intermediate expenses received by owners or partners working in unincorporated enterprises.
2. **Goods for own consumption and barter transactions:** it is the market value of all goods and services produced in ENCSs, for own consumption or self-supply, to be exchanged for other goods (barter transactions) or donated to other households or NPISHs.

### 2.2.1.2 Income from rents

Income from rents is that received as a result of ownership of assets<sup>9/</sup> provided to others for their use. Assets may be financial or non-financial, such as fixed assets and natural resources (land and subsoil).

Income from real estate property rents are those received from leases, financial investments, lease of natural resources and rights on intangible assets<sup>10/</sup>, as detailed below.

#### 2.2.1.2.1 Income from leases

Net income received by the owner from a fixed tangible asset<sup>11/</sup> used by third parties, whether in the country or abroad.

Income from tangible fixed assets include:

- Rental of rooms and housing units.
- Rental of buildings, offices, and commercial units.
- Rental of vehicles, motorcycles, and machinery.
- Rental of agricultural (tractor, sprayer) or industrial equipment (packaging machine).

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8/ Mixed income includes any income that is received, by a shoe shiner or a business owner with many employees, for example, as long as the company or business is an ENCS.

9/ They refer to a household's goods, rights and cash.

10/ All assets of immaterial nature (usually lacking physical essence or substance) that are capable of generating future economic benefits.

11/ All goods that have a physical form, that may be manipulated and that take up space.

### 2.2.1.2.2 Income from financial investments

Income received by the owner of financial assets for making them available to third parties, regardless of whether the asset was issued in the country or abroad. A distinction is made between income from interest and income from dividends.

1. **Interest:** as established by SNA 2008, interest are: "Income that is receivable by the owners of a financial asset for putting the financial asset at the disposal of another institutional unit<sup>12/</sup>". For example, interest receivable from term deposits, savings accounts or investment funds in a financial institution.
2. **Benefits distributed by cooperatives:** benefits obtained from the development of productive activities that are distributed to members.
3. **Dividends:** cash return for someone who has invested in an enterprise (partner). In other words, the investor makes a capital contribution and is therefore rewarded.

### 2.2.1.2.3 Income from rent on natural resources

It is the cash return received by a person for making available to third parties natural resources or non-produced assets, including rent on land and subsoil.

Some examples of rent on natural resources are:

- Lease of land for agricultural purposes.
- Lease of subsoil for mining.
- Lease of land for livestock industry.
- Lease of land for parking.
- Lease of land for patronage festivals.

If upon leasing a land where a construction work is located it is not possible to define how much corresponds to the lease of the construction work and how much to rents for the land, the total income amount will be recorded in the category with the highest value between the land and the construction work.

### 2.2.1.2.4 Income from rights/royalties

It is the remuneration or economic return for intellectual production and temporary assignment of intangible assets to third parties. The major, most common rights are the following:

1. **Lease of trademarks:** granting of exploitation rights of a product, activity or trade name by a company to one or more persons in a specific area, commonly known as *franchise*.
2. **Lease of patents:** a patent is a set of exclusive rights granted temporarily by a government or authority to the inventor of a new product, which is subject to industrial exploitation.

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12/ An institutional unit is: "An economic entity that is capable, in its own right, of owning assets, incurring liabilities and engaging in economic activities and in transactions with other entities (United Nations et al., ch. 4, par. 4.2, p. 1, 2008).

3. **Lease of copyrights:** it is a set of rules and principles regulating moral and equity rights that the law grants to authors for the creation of a literary, artistic, educational or scientific work.

### 2.2.1.3 Current transfers in cash

They are regular cash entries, except for insurance, received by households, which may come from the government, Non-Profit Institutions Serving Households (NPISH)<sup>13/</sup> and other households. Their peculiarity lies in that they are nonreciprocal; in other words, they are granted without requiring anything in return.

Some of the most common current transfers received are:

#### 2.2.1.3.1 Scholarships

Scholarships are an economic contribution aimed only at paying for education-related expenses of a certain person. They may come from the government or other national or foreign institution, and they may be used for primary, secondary or tertiary level education, diversified education and higher education, technical education, diplomas, and post-graduate courses.

#### 2.2.1.3.2 Insurance claims

Through the collection of a premium, an insurer undertakes to pay an indemnity for certain damage or pay an amount to the policyholder upon the occurrence of an event set forth in the contract. Under the concept of current income, only non-life insurance is included, as this income does not modify the household's net worth. Because they are large, life insurance transfers are considered capital transfers. The major insurance transfers are the following:

- **Insurance claim for damage of goods:** monetary income received by a policyholder as reimbursement of the damage suffered due to any of the following events: fire, damage or theft of insured assets.
- **Insurance claim for workplace accidents:** monetary income received by the policyholder for accidents suffered in the workplace.
- **Insurance claim for damage caused by third parties:** monetary compensation received by a person from an insurer or individual when being affected by actions of a third party.
- **Claim for credit or debit card theft or loss:** amount repaid to the user of credit and debit cards as a result of card loss or theft.
- **Sick leaves:** cash income from insurance (generally social security) provided to cover income not received during absence from work due to the partial or total loss of abilities, which prevent the person from performing normally or attending the workplace, either temporarily or permanently.
- **Reimbursement paid for health, education, death or other expenditures:** amounts provided by an insurer to household members for expenses incurred. The insurer pays in part or in full once the invoice is submitted.

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13/ Non-Profit Institutions Serving Households are institutions that produce goods and services for sale at low prices or no cost and which are not controlled by the government. They are referred to as Non-Governmental Organizations (NGO).

### 2.2.1.3.3 Maternity leave

Monetary income received by an insured female employee during her absence from work the month prior to childbirth and the three subsequent months, to allow for her adequately looking after her pregnancy and maternity needs.

### 2.2.1.3.4 Pensions

A pension is the net<sup>14/</sup> sum of money a person receives on a regular basis from the government, an insurance company, autonomous pension systems, households, or from abroad.

Pensions included in this category are:

1. **Pensions for disability, old age or death:** cash income regularly received by a person in cases such as when the age and the number of social security contributions required to retire are reached (old-age pension); when a person becomes disabled due to sickness or accident (disability pension); and upon the death of the spouse, mother or father on whom the person depended financially (death pension).
2. **Non-contributory state pension:** economic assistance provided in cash through subsidies by the state to physically disabled persons, older persons, and persons in extreme poverty. Unlike disability, old-age and death pensions, these do not require social security contributions.
3. **Pensions from abroad:** pension in cash provided from abroad received by persons who have worked or contributed outside the country.
4. **Child/parental support:** cash income received by a person to pay for living essentials. Normally, support is provided by parents to their children; however, children may provide it to their parents usually because of old age.
5. **Child/parental support or disability, old-age and death pension additional payment:** payment of a thirteenth month, corresponding to the total income received for pension throughout one year.

### 2.2.1.3.5 Other permanent assistance received from households, NPISH and the government

Payments in cash or in kind received on a regular basis from other households, NPISH or the government, for which nothing is to be given in return.

The International Labour Organization (International Labour Organization, 2003) defines them, in the case of households, as family support payments, and regular entries from inheritances and trust funds; and in the case of NPISH and the government, as regular donations or financial support. Current transfers from other households include:

- **Permanent monetary assistance received from family members or other persons:** they may reside in the country or abroad. If coming from abroad, they are referred to as remittances.
- **Gifts received in kind on a regular basis from other households:** examples of these gifts are clothing, medication and other items for household use. For recording purposes they must be valued at market price.
- **Regular monetary support received from NPISHs or charity institutions:** This group also includes churches.

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14/ Without including social security contributions.

- **Support from the IMAS (Institute of Mixed Welfare):** economic assistance provided by the institution to low-income families with the purpose of meeting their basic needs.
- **Regular assistance in cash from other public institutions:** besides the IMAS, scholarships and non-contributory state pension, other institutions transfer money to households, such as municipalities and the Family Allowances Program.

#### 2.2.1.4 Imputed value of housing unit

Within current income, an imputed rental value is assigned to households living in their own housing units, as the System of National Accounts considers it an accommodation service produced by households for owners.

It is the market value, with maintenance costs deducted (repairs, insurance, taxes), that the owner of a housing unit would have to pay if he/she were to rent it.

This concept comprises housing units paid in full, those currently being paid, and those that were donated.

#### 2.2.2 Disposable income

The disposable income is the current income minus paid current transfers which, for households, is income that may be used for consumption expenditure or savings. These transfers paid are detailed below as part of household non-consumption expenditure, and include:

1. Cash transfers paid to the Government (income taxes, other direct taxes, fines, and compulsory fees).
2. Social security contributions to the health and pension system.
3. NPISH contributions (organizations, professional associations, trade unions, and others).
4. Contributions to other households (donations, remittances, child/parental support, etc.) or damage compensation<sup>15/</sup>.

All concepts under paragraph 2 of the Expenditure section, “current transfers paid”, are subtracted.

Once the disposable income is defined, the *adjusted*<sup>16/</sup> disposable income may be calculated by adding the disposable income to the value of social transfers received in kind (as defined below).

#### 2.2.3 Capital transactions (receipts)

With the purpose of creating the household balance sheet<sup>17/</sup> to explain major differences between consumption and current income, income from *financial transactions*, *non-financial transactions* and *other capital receipts* received by households are studied.

15/ These payments are detailed in the section “Household expenditure.”

16/ It is the maximum amount available to the household to consume during the reference period without reducing their assets or increasing their liabilities (ILO, par. 109, p. 25).

17/ The household balance sheet measures the household monthly economic situation (surplus, deficit, balance) by adding monthly assets minus total monthly liabilities (income minus expenditure), while showing the source of funds of the household and helping interpret the differences between income and expenditure.

Capital transactions are linked to the acquisition or disposition of an asset<sup>18/</sup>, either financial or non-financial. In this particular case, capital transactions are those in which the household exchanges a particular set of benefits with another economic unit through payments defined as *financial claims* that are, therefore, liabilities<sup>19/</sup>.

Capital transactions are not directly considered as part of the disposable income; therefore, they should not impact the use of goods or services, as explained by the System of National Accounts Handbook, 2008. This is based on the fact that households will not consider any capital transaction actually received during a certain period as fully available for end use within the same accounting period (in other words, it is not part of the disposable income); and vice versa, any household making a capital transaction will not decrease their final consumption by the full transaction amount.

Capital transactions are infrequent and are generally large amounts of money, which are not spent entirely by households in the reference period. Capital transactions may be financial and non-financial.

### 2.2.3.1 Financial transactions

In order to define financial capital transactions, income from sale and withdrawal of assets and incurring of financial liabilities are considered.

Financial income comprises all financial rights (withdrawal of savings, certificates, security deposits, debt securities or money received through a loan) and ownership through either sale of shares<sup>20/</sup>, (listed and not listed in the stock exchange) and other ownership of corporations (withdrawal of investments on branches, trusts, limited liability companies and solidarity associations and cooperatives, or unincorporated funds and notional units for ownership of real estate and other natural resources).

### 2.2.3.2 Non-financial transactions

Non-financial transactions are cash receipts as a result of the sale of non-financial assets. Some of the most common include:

- Sale of plots of land
- Sale of housing units
- Sale of valuable antiques
- Sale of domestic animals
- Sale of high-cost jewelry and works of art

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18/ Assets are stores of value that generate a benefit or series of benefits accruing to its economic owner by holding or using them during a period of time. Assets may be of financial nature or not. This survey, just as the SNA 2008, will consider only economic assets (moral attributes of persons and other intangible or non-economic assets are excluded).

19/ A liability is created when the debtor acquires the obligation, in certain circumstances, of making a payment or series of payments to the creditor. Non-financial liabilities are not recognized in the SNA; therefore, the term *liability* refers necessarily to a financial liability.

20/ Shares are considered financial assets although the financial right of their holders over the corporation may not be a fixed or previously determined monetary amount.

### 2.2.3.3 Other capital receipts

Like the rest of capital transactions, they are large and occasionally unexpected receipts from activities unrelated to the sale of financial and non-financial assets, such as:

- **Life insurance claims:** it is a single amount in cash received by a person from the death of a relative who assigned him/her as recipient. It is a significant one-off amount received by a person.
- **Inheritances:** sum of money transferred by a person to another upon the death of the latter. For the purposes of the survey, only cash inheritances are considered. If the inheritance is received in kind, it is valued at retail market price.
- **Income from gambling:** cash received for participating or winning in lottery games, *chances*, *tico bingo*, *chances panameños*, gambling winnings, or casino games.
- **Loans:** it is the income received from a loan requested.
- **Temporary gifts or financial support received from other households:** it is the amount from temporary gifts or receipts from other households.

## 2.3 Household expenditure

It is the sum of the goods and services acquired in the market, received free of charge or produced by households, in order to satisfy the needs and requests of their members, or for other compulsory payments.

In order to analyze household expenditure, the concept of total expenditure is used, which comprises both current expenditure and capital transactions.

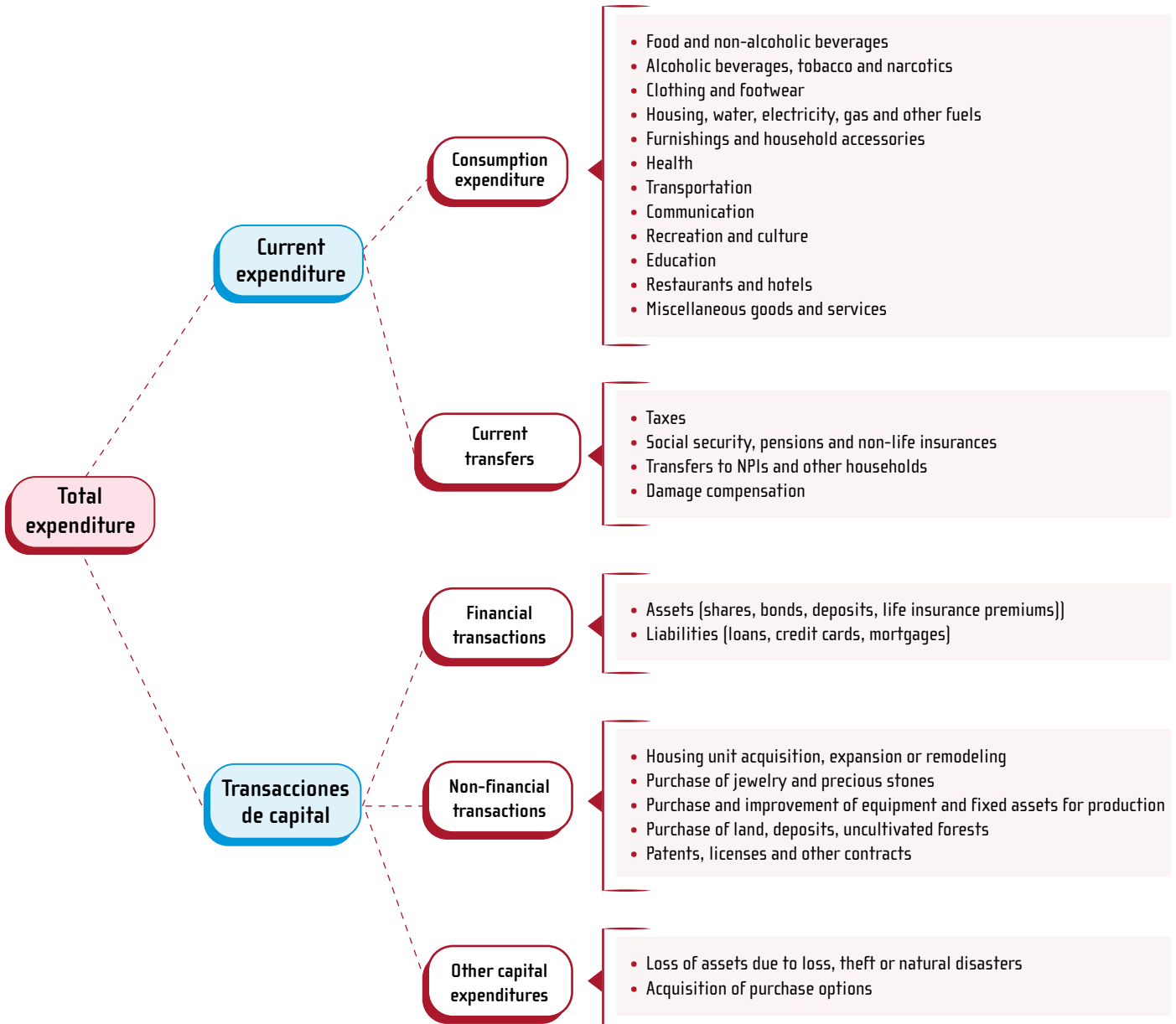
Current expenditure is regular in nature and is composed of: a) the acquisitions made by the household in order to satisfy their consumption needs and requests, and b) paid current transfers made by households to the government, to social security, to other households, or as compensation for damage, receiving nothing in return.

Household expenditure on capital transfers is the purchase of financial liabilities and assets. These expenditures are less frequent and are usually large amounts.

The following diagram shows the household expenditure structure.

FIGURE 2.4

Costa Rica. Classification of total household expenditure



### 2.3.1 Current expenditure

Current expenditure comprises purchases and disbursements for household consumption expenditures and transfers (compulsory payments). In general, these expenditures are incurred at a specific frequency, according to the needs and requests of the household or national and international legislation.

Current expenditure is classified as *consumption expenditure* (goods and services for fulfilling the needs and requests of the household and their members) and *current transfers paid* (taxes, insurance, donations, and other frequent and relatively small transfers) of households.

Collecting information on consumption expenditure is key as, like household current income, it is an essential indicator for the analysis of well-being, with the only difference that consumption expenditures are less exposed to circumstantial fluctuations than income is. Keeping household consumption expenditure estimations up to date is also relevant for Consumer Price Index weights.

#### 2.3.1.1 Consumption expenditure

Consumption expenditure is the value of goods and services *acquired* by households in order to satisfy their needs and requests. It includes direct monetary purchase of consumer goods and services in the country and abroad, and the estimated value of non-monetary transactions, as barter transactions, income in kind, own consumption, self-supply, and donations<sup>21/</sup> (System of National Accounts, 2008).

Consumer goods and services may be bought and sold in the market or be received at low or no cost. Goods are classified as: a) durable goods, which can be used repeatedly for over a year; b) semi-durable goods, which can be used repeatedly for less than a year; and c) non-durable goods, used solely for one-time consumption.

##### 2.3.1.1.1 Household consumption expenditure classification

Household consumption expenditure is a large aggregate, and is therefore is convenient to disaggregate it. To this end, the Classification of Individual Consumption by Purpose (COICOP), that consists of 14 groups, is used. Only the first 12 groups correspond to households:

- Food and non-alcoholic beverages
- Alcoholic beverages, tobacco and narcotics
- Clothing and footwear
- Accommodation, water, electricity, gas and other fuels
- Furnishings, household equipment and routine household maintenance
- Health<sup>22/</sup>
- Transport

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21/ Donations in kind and gifts from other households are recorded in the expenditure forms. Specifically, the answer to the question on payment method or acquisition of goods and services received would be recorded as donated by another household (this expenditure would be a consumption expenditure). Nevertheless, for the donor household these expenses would be recorded as end use of the purchase: to be donated to another household (this is not considered consumption expenditure but a transfer in kind to another household).

22/ Private expenditure is estimated.

- Communication
- Recreation and culture
- Education
- Restaurants and hotels
- Miscellaneous goods and services

Groups are disaggregated by classes and subclasses, which include an explanation detailing the specific goods and services included in each of the subclasses (see the classification manual). Subsequently, goods and services specifications are included to offer the information required for price indexes and the national accounts in particular. Therefore, a different classification consisting of four digits, with almost 2,500 categories, is used. Each is directly correlated to the COICOP classification, which ultimately standardizes the information for its international comparability and use.

#### 2.3.1.1.2 Time of recording of acquisitions of consumer goods and services

Consumption expenditures should be recorded on the basis of their *acquisition*, which is the time when households become owners of the goods or when the rendering of services is completed.

There are some special cases, such as the acquisition of semi-durable or durable goods in installments, financial leasing, or others. These are recorded in the moment the payment commitment is made. Even though the purchaser is not yet necessarily the legal owner, he/she takes on an economic responsibility. This means that, in the survey, the time of recording is the moment the purchase of the product is agreed upon, although acquisition may take place before the completion of such payment or the product may not be consumed immediately.

The second case refers to when goods have been donated to the household or received as payment, in which case the time of recording of consumption expenditure is when the goods are made available to the household.

Lastly, in the case of housing unit utilities, consumption from the previous period is recorded, as information available on utilities like water, telephone, and electricity corresponds to amounts already billed from the previous month and, therefore, they do not correspond to the moment the service is rendered.

#### 2.3.1.1.3 Forms of acquisition

Expenditure on consumer goods and services, as well as other transactions detailed below, may be monetary and non-monetary. Monetary expenditure transactions are the most common and refer to those in which an agreed amount is paid with money, that may be cash, credit, checks, transfers, etc. In this case, purchases are valued directly in colones at the time of the acquisition, as seen in the previous section.

In the other less frequent case, households may also acquire goods and services through non-monetary transactions, where no money is involved in the payment method. In these cases, indirect valuation is required, as described below:

1. **Expenditure on barter transactions:** a barter transaction is one where goods and/or services are exchanged for other different goods and/or services, agreed by the two parties as being of equal cost, without the use of money. Expenditure on barter is recorded at prices paid by households, upon valuation of the goods and/or services provided as payment method.

2. **Expenditure on goods and services from income in kind:** they refer to the value of goods, services and assets provided by employers to employees as remuneration in kind for work done. Because these goods and services may be used by employees for personal purposes, they are also included in household expenditure. The most common types of payments in kind are:

- Food and beverages provided on a regular basis, including subsidized goods from the company cafeteria.
- Housing or accommodation services that may be used by all members of the employee's household.
- Vehicle services or other durable goods for the employee's personal use.
- Goods and services produced by the employer during his/her own production processes.
- Transportation from and to the work place, as well as free or subsidized parking (otherwise charged).
- Children's day care services.

According to the SNA 2008, valuation of what is received in kind must be in accordance with the way the employer acquires the goods and the method of payment to workers<sup>23/</sup>; however, since workers usually do not have this information to provide, the market value of these goods, services and capital is used.

1. **Expenditure on goods and services from own-account production (own consumption and self-supply):** it is the value of goods that the household produces or withdraws from the business for own consumption or use. In the case of services, only those related to sales or supply to third parties are included. Although the SNA 2008 recommends using cost price<sup>24/</sup>, the market price is used, as this information is not always available in such detail

2. **Gifts received from other households:** they refer to the value of goods and services received at low or no cost for household consumption. According to the SNA 2008, when received at no cost and produced in the donor household, gifts should be valued at cost price<sup>25/</sup>; however, considering the difficulty of this estimation for the recipients of the donation, gifts are valued at market price. When provided at prices lower than the market price, the amount paid is the monetary expenditure, and the difference between the total value estimated by recipients and the amount paid is considered as non-monetary expenditure.

#### 2.3.1.1.4 Valuation of household consumption expenditure

Regarding household expenditure, monetary transactions are recorded at market price paid in cash; and own consumption, barter transactions, donations and salary in kind are recorded at prices estimated by households.

In the case of credit purchases, the spot price must also be recorded and, if not known by the informants, the amount and number of installments will be asked to obtain an approximation later at the office.

23/ According to the SNA 2008, goods and services bought or granted for free to the employer must be valued at market price; and those produced by the employer must be valued at production price. When provided at a lower cost, the expenditure in kind is the difference between the total value and the amount paid. In case of interest foregone, its value is estimated as the difference between the average rate and the interest paid.

24/ Cost price is the market price minus the trade and transport margins and the value-added tax paid.

25/ Technically, those produced by the donor household should be valued at cost price; nonetheless, received goods are valued at market price and, although interest foregone should be included according to the SNA, they are excluded in view of the difficulty of their estimation.

### 2.3.1.2 Current transfers paid

Current transfers paid are expenditures incurred by the household or any of its members as contributions or donations to other entities without receiving anything in return. They affect the household's disposable income (in other words, consumption or savings) and are usually frequent and regular.

Transfers can be made to the Government (income taxes, other direct taxes, fines and compulsory fees); as social security contributions (social security and pensions); to NPISHs (organizations, professional associations, trade unions and others); to other households (donations, remittances, child/parental support, and others); or as compensation for damage. The foregoing is detailed below:

#### 2.3.1.2.1 Transfers to the Government

Taxes and compulsory payments, with no counterparts, paid by households to the Government These include:

1. **Income taxes:** payments required on the basis of income received by persons or households. If deducted at source, they may be recorded in the periods in which they are paid, but when the payment is to be made until the following accounting period, uncertainty may arise, and thus taxes are recorded based on the previous period (SNA, 2008). Taxes on income include the following types of taxes:
  - **Taxes on individual or household income:** levied on the person's sources of income (salary, property rentals, pensions and others). They include those deducted by employers, surtaxes and income tax of holders of unincorporated enterprises (ENC5s).
  - **Taxes on capital gains:** levied on gains, regardless of the periods during which they were earned.
  - **Other current taxes on capital:** levied on the value of assets (land and buildings) or on net worth (taxes on improvements), on other assets (jewelry or other signs of wealth), as well as on capital transfers (tax on inheritances or succession rights and taxes on donations).
2. **Fines and other tax sanctions:** fines and other sanctions imposed by tax authorities due to evaded or delayed tax payments. They are recorded as taxes, as they are seldom reported separately.
3. **Miscellaneous fees:** taxes payable periodically by households (generally once a year) for a license, such as possession and use of vehicles, ships and aircrafts, or to obtain certificates such as hunting, fishing and target shooting permits. These fees are paid on property or use of certain goods or activities that are restricted. They generally require little to no work from the government.

This group includes taxes on international transactions: remittances, international travel, investments and purchases abroad, etc.

#### 2.3.1.2.2 Social security contributions

Contributions paid to social security and pension systems, with the purpose of obtaining the corresponding benefits.

1. **Social contributions to the health care system:** social contributions are compulsory social insurance payments made or imputed by household members with the aim of ensuring health and maternity benefits for the current or future periods. Both the contributor and persons depending on them are entitled to this right. Contributions may be paid by employees, self-employed workers, persons not in employment or voluntarily inactive persons.

**2. Social contributions to the pension system:** payments made with the purpose of receiving a pension<sup>26/</sup> (lifelong payments<sup>27/</sup> due to retirement, old age or disability). These systems follow a process in which persons make periodic contributions to fund their retirement plan, as well as that of their relatives.

Complementary voluntary pension funding is included as social security contribution, as it also complies with the principle of redistribution among those who have contributed to the funding.

The contribution is recorded at the time in which the payment obligation is created. The amount recorded is that paid between the previous month and the day of the survey.

### 2.3.1.2.3 Transfers to Non-Profit Institutions Serving Households

Payments made by households or its members as membership fees, subscriptions, voluntary donations and others, periodically or occasionally. These institutions may be professional associations, trade unions, solidarity associations and other institutions serving households and their members. Transfers in cash and the value of transfers in kind are included<sup>28/</sup>.

1. **Transfers between households:** they are transfers made by households to other households residing or not in the country, such as donations, and child/parental support. They refer to all transfers in cash and the value of transfers in kind<sup>29/</sup>. These are recorded as anything reported by the household as “donations to other households,” in terms of the end use of the acquisition.
2. **Payments of compensation:** payments made by a household or its members as compensation for damages caused to other persons or properties. They may be compulsory or agreed upon out of court. An example of this payment is compensation paid for damage caused by children to neighboring property.

### 2.3.2 Capital transactions (expenditure)

A capital transaction is the acquisition or ownership of a financial or non-financial asset. They are classified as capital if they involve the transfer of an asset to one of the parties (buyer-seller or donor-recipient). They are generally large, irregular and less frequent amounts.

Capital transactions may be financial and non-financial.

#### 2.3.2.1 Financial transactions

They serve as a mechanism through which households exchange a particular set of financial benefits among themselves or with other institutional units<sup>30/</sup> residing in the country or abroad, by making payments, resulting in one unit acquiring a financial claim<sup>31/</sup> or asset and the other a liability.

26/ Technically, service fees charged by administrators should be excluded, but because obtaining data with this disaggregation is difficult, what is recorded is the total amount paid by households.

27/ Lifelong payments are those made starting from the event until the death of the recipient.

28/ According to the SNA 2008, donations of food, clothing, blankets, drugs, and others, recently acquired or new, are considered money transfers used for the purchase of said goods; donations of valuable objects are recorded as capital transfers and, if the items are second-hand or not wanted by the household they are not recorded as transfers.

29/ En este caso, las transferencias en especie se valoran al precio costo si fue producido por el hogar y a precio de mercado si fue comprado.

30/ Institutional units are physical or legal entities, with legal and decision-making capacities, as well as the capacity to hold assets and incur liabilities, and they may be residents or non-residents.

31/ A financial claim is the payment or series of payments due by the household under the terms of a liability.

They are recorded once the household makes the disbursement for the financial asset or liability, and comprise:

- Acquisition of assets:
  - Purchase of shares
  - Purchase of bonds
  - Purchase of other securities
  - Repurchase of securities
  - Payments of investment fund shares
  - Savings deposits
  - Security deposits
  - Term deposits
  - Other deposits
  - Life insurance premiums
- Acquisition of liabilities:
  - Seizures
  - Layaways
  - Loan payments to third parties outside the household
  - Mortgage payments
  - Credit card payments
  - Loan payments (personal, housing, plot of land, etc.)
  - Other accounts payable

### 2.3.2.2 Non-financial transactions

Acquisition or disposition by households of non-financial assets.

They include the value of assets acquired through barter transactions, of those received as capital transfers in kind, and of those withheld by producers for own use (such as construction of own house).

The value of a non-financial asset is recorded at the time of the transfer and comprises the following kinds:

- Purchase of housing unit.
- Expansion, reconstruction or remodeling of housing unit.
- Antique furniture purchased mainly for its value.
- Precious stones and jewelry of known value.
- Paintings, sculptures and other works of art.

- Other valuables not previously classified (stamp collections, coins, china, books and others).
- Structures, machinery, equipment and cultivated assets (plant or animals) used in production activities.
- Improvement of existing fixed assets, to increase their productive capacity or to extend their service life, or both.
- Land.
- Water resources.
- Non-cultivated forests.
- Mineral deposits of high economic value.
- Property transfer costs<sup>32/</sup> (related to the acquisition and disposition of assets).
- Leasing contracts and licenses (patents).

### 2.3.2.3 Other capital expenditures

Other one-off, irregular and large expenses are considered capital expenditure but come from activities unrelated to the acquisition or sale of assets and liabilities.

These expenses include: loss of assets due to misplacement, theft or natural disaster, and the acquisition of purchase options.

### 2.3.3 Special considerations on goods and services expenditure

Some goods and services expenditures require special considerations, either because they have to be imputed or because the expenditure has to be disaggregated into consumption expenditure and expenditure different from consumption, or because they are paid to the government upon receipt of specific services.

#### 2.3.3.1 Imputed rental of housing units

Imputation is performed when estimating expenses not actually incurred is required. In this case, the expenditure is estimated for rental of housing units whose occupiers do not pay the market cost, either because the housing unit is occupied by its owners or the housing service is donated or provided as income in kind.

The imputed rental is the value of the services derived from that housing unit. To approximate its value, the occupier is asked to estimate the corresponding rental of the services offered by the housing unit.

The equivalence of the rental is estimated only for the housing unit considered as the main residence<sup>33/</sup>.

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32/ Expenditures associated with the transfer of assets are professional charges (service fees paid to attorneys, architects, inspectors, engineers, appraisers, real estate agents, auctioneers and others); commercial and transport expenses billed separately to the buyers; taxes payable by the unit acquiring the asset through transfer and those payable for the sale of an asset; shipment, installing and/or uninstalling expenses not included in the price for the asset acquired or sold; and any additional expenses incurred at the end of the service life of an asset, such as those required to ensure structure safety or to restore the environment where it is located.

33/ Secondary residences are not included.

In the case of owner-occupied housing units, the inputs and services used for repairs or maintenance, house insurances<sup>34/</sup>, property taxes and mortgage taxes should be deducted from the imputed housing unit value, as they are expenses incurred by households for the housing unit.

### 2.3.3.2 Repairs due to damage caused by housing unit occupiers

Repairs for damages caused by occupiers (whether tenants or owners) are considered consumption expenditure, and include the cost of the materials purchased and the payments to the specialized service personnel making such repairs.

Owners may incur two other types of expenditure for the housing unit:

- for maintenance and/or
- to increase property value.

Maintenance expenditure is considered intermediate expenditure of the production of services by the household; should this expenditure entail an increase in the value of the housing unit, it is considered gross capital formation (non-financial capital transaction). Both include expenditure on materials and specialized personnel services, as well as damage repair.

Considering that the three kinds of expenditure are similar in that they are for the housing unit, at the time of the survey, details must be requested about the data provider's declaration (whether it was a repair due to damage, maintenance or to increase property value) and about the amount of materials and amounts paid, with the purpose of distinguishing them as realistically as possible.

### 2.3.3.3 Services paid to the government

Payments for the granting of licenses for certain regulated activities (as a way of measuring competency and qualification, efficiency, equipment safety or others), which are not compulsory payments if the use of the goods or services is not required, are consumption expenditures and are considered to be proportional to the service rendered.

Examples of these payments include those made for the issuance and renewal of driver's and pilot's licenses and gun licenses, as well as for the issuance and renewal of passports, airport fees, court fees, and other government fees.

There are other government fees that are not classified as consumption expenditure. One of these fees is when payment is not proportional to the service rendered, such as fees for natural reserve maintenance, as well as patents and other marketed licenses considered non-financial capital.

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34/ Housing insurance is property insurance, liability insurance and others that are usually the responsibility of the owner.

### 2.3.3.4 Expenditure on lottery and gambling

Expenses incurred by households when buying lottery tickets or gambling comprise two elements<sup>35/</sup>: the payment for the service to the unit organizing the lottery or gambling, which is considered consumption expenditure, and a capital transaction paid to winners. Considering household members are generally unaware of the proportions of this disaggregation, the lump sum of expenditure on lottery and gambling will be requested, and will be subsequently adjusted and disaggregated to know this difference.

### 2.3.3.5 Expenditure on financial services, except insurance and pension services

Banking fees and expenses paid by lenders and borrowers for financial intermediation services. This service should be included in consumption expenditure. However, this does not comprise lump sums paid by households for loans or use of credit cards (considered capital transactions).

Also included are interest, commissions and surcharges on credit cards and loans, commissions and payments for the use of checks, bills and deposit certificates, among other services. In the case of acquisition of currencies or other financial assets, the difference between the buying price and the selling price is recorded<sup>36/</sup>.

Only expenditure on financial services charged explicitly are considered in ENIGH. Should only information on total amounts be available, such as loan and credit card payments, irrespective of the difference between repayment and interest, the total amount will be recorded as part of the capital transaction, without contemplating any consumption expenditure.

### 2.3.3.6 Non-life insurance premiums

Insurance premiums are payments for coverage against fire, flood, crash, collision, subsidence, theft, assault, accident, illness, as well as financial loss caused by multiple events (for example, illness and accidents).

Insurance policies are willfully purchased by households for their own benefit, independently from their employers or the government, and outside of any social security system.

Life insurance premiums are considered a financial capital expenditure and are thus excluded from this classification.

## 2.4 Information collection tools

To apply the survey, four forms are used in different visits to households. ENIGH 2018 implemented, for the first time, the use of mobile devices (tablets) for recording part of the information. In this case, they were used for most sections of form 1 (sections A to I), sections A and B of form 2, and form 4 to a part of the sample<sup>37/</sup>. The rest of the information was collected in paper forms, but entered by the same interviewer to the systems provided in the tablet.

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35/ According to the SNA 2008, some lottery games and gambling may involve a third element, which is donations to charity (normally a Non-Profit Institution Serving Households). This third element is excluded.

36/ If not known by household members, transaction details will be recorded in order to estimate the difference.

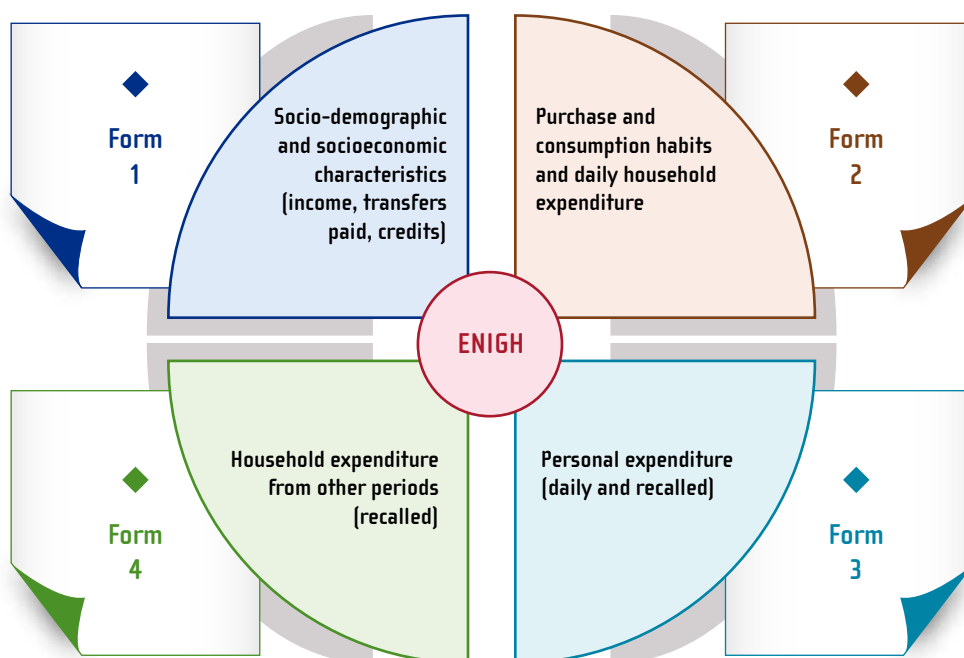
37/ This form (4) was completed using mobile devices for the first half of the sample, the other half used paper forms, as the data provider's response was considered to be affected due to the longer time needed to record information directly in the tablet.

It is worth noting that, in this case, completing form 3 was also possible by downloading a mobile app to smart phones, tablets or computers, or by accessing the form through a link on the institutional website of INEC.

The following image describes each of the forms and the information collected.

FIGURE 2.5

Costa Rica. Forms used in ENIGH 2018



Each form is divided into different sections and has different objectives, as described below.

### 2.4.1 Form 1. Socioeconomic and socio-demographic characteristics

This form has 11 sections concerning housing unit characteristics and services; household holding of goods and services; characteristics of household members and employment; income from different sources and expenditure on credit installments; other transfers paid and financial services expenditure.

Section A is applied to all housing units, section B to households. Section C inquires about the residence status of persons in the household, and sections D and E inquire about social characteristics and transfers in kind of all members.

Sections F to J-1508 inquire about occupation, employment and income characteristics of members aged 15 or older. Additionally, the form contains section J-1509, aimed at members not in employment and inactive and for those aged 15 or younger who were employed in the last 12 months.

Lastly, section K-1601 inquires about credit installments and other transfers paid, as well as financial services expenditure of each person aged 15 or older.

Each one of these sections is listed below:

- A. Housing unit characteristics and services.
- B. Household characteristics.
- C. Residence status.
- D. Sociodemographic characteristics.
- E. Social transfers from the Government and Non-Profit Institutions.
- F. Activity condition.
- G. Persons in employment.
- H. Main paid employment.
- I. Self-employment.
- J-1501. Income from main paid employment.
- J-1502. Income of employer or own-account worker with an incorporated enterprise.
- J-1503. Income from main self-employment (non-farm workers).
- J-1504. Income from main self-employment (farm workers).
- J-1505. Income from secondary employment.
- J-1506. Income from rentals and rents.
- J-1507. Transfers received in cash.
- J-1508. Other occasional income.
- J-1509. Income from previous work and that of persons aged 15 or younger.
- K-1601. Installments and transfers paid.

### *2.4.2 Form 2. Daily household expenditure*

Form 2 is used to record daily expenditure on food and goods frequently consumed throughout the week. It consists of two parts: an interview with the general data provider (sections A and B) and the filling out by the data provider of daily expenditure for 7 days (sections C and D). These are summarized as follows:

- Section A inquires about household purchase habits, savings and subjective poverty.
- Section B inquires about food purchase habits outside the household and use of public transportation.
- Section C inquires about daily acquisitions for the household for 7 days, regardless of whether they were for own consumption, for another household member or as gift for a different household or a charity institution. Also, the form of acquisition is included, whether monetary, self-supply, payments in kind, or gifts. In this case, the instruction of considering any good or service bought during the week, regardless of their consideration as expenditure from "other periods," was included. An important consideration was to avoid duplication in form 4.
- Section D inquires about meals received for free from the Government or charity institutions.

Moreover, within this form, a special module for recording information from supermarket invoices was added, including products in such invoices for other households.

### 2.4.3 Form 3. Personal daily expenditure

This form must also be filled out by the data provider. It is an open-consultation notebook on daily personal expenditure to be filled out for 7 days by household members aged 12 or older, except the general data provider (whose expenditures are to be recorded in form 2). A section on personal expenditure of other periods is also included (las month, last three months, last six months and last twelve months).

The web version available to data providers had the same content as the paper form, and a could be filled out personally with a key and password, by recording at any time the purchases, making modifications (editing information), and even preparing an exportable personal expenditure report in Excel, CSV or PDF formats.

### 2.4.4 Form 4. Expenditure from other periods

While there are highly frequent expenditures, some are not as frequent. Consequently, expenditures are recorded in groups for the previous month, or to the last three, six or twelve months. For classification, frequency of pay and purchase, or legislation, such as that requiring certain payments once a year, are taken into account.

- **Monthly expenses:** general housing unit services; communication services; domestic staff services; dry cleaner's and laundry service; recreation and cultural activities; newspaper and magazine subscriptions; care services; formal primary and secondary education<sup>38/</sup>; formal university and technical education; school supplies and stationery; books; print and screen-printed materials; materials for screen printing or printing; personal care goods and services; and medicinal and pharmaceutical products.
- **Quarterly expenses:** kitchen supplies; dinnerware and household utensils; children and baby clothing; men and women clothing; fabric; tailoring; clothing accessories; domestic animals; plants; private medical and dentistry services; medical examinations and treatments; and therapy equipment.
- **Biannual expenses:** bedlinen and table linen; games and toys; recreational equipment; vehicle repair and maintenance services; housing tools and equipment; small housing and personal-care appliances; various housing conservation and maintenance materials; and courses.
- **Annual expenses:** large household appliances; furniture and accessories; audiovisual and information equipment; photography and video equipment; musical instruments; vehicles; professional and technical services; tourism packages and accommodation services; tourism and moving transportation; insurance and permits; taxes; capital transactions; and asset loss.

Through these forms, all household income and expenditure are obtained according to their sources and end use, as long as they were received or incurred during the corresponding inquiry periods.

### 2.4.5 Data providers

As mentioned above, forms are intended for the household as a whole; however, some of the forms apply to the household in general, and some to each member individually. Therefore, the data provider best suited to provide basic and general household information is contacted; in other cases, each member of the household is interviewed separately.

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<sup>38/</sup> For some annual expenditures, information on the total for the year was asked, such as tuition, books and uniforms.

Accordingly, three types of informants exist:

1. **General data provider:** the general data provider is the person aged 15 or older who is knowledgeable of the household and its members and, preferably, does the household shopping. This data provider shall provide the information for sections A to E of form 1 and for forms 2 and 4 completely.
2. **Self-informant:** each household member who must provide information directly to the interviewer. This is requested considering the survey collects information on income (sections F to J-1509), which must be provided by a household member aged 15 or older, and certain personal expenditures (K-1601 and form 3), provided by a household member aged 12 or older.
3. **Other household data provider:** It is the case of surveys conducted in households whose members have a certain type of mental or physical disability, and a person from another household provides support and budget assistance to them. The person in charge, although not a member of the household, is the data provider who must answer the survey.

## 3. Sample design

The survey uses a stratified, two-stage, replicated, probability, area sample design. It is an area sample design because the sampling units are geographic areas or PSUs, and the selection probabilities of housing units are associated with these PSUs. It is a stratified sample design because strata of interest were selected for the distribution and selection of the sample. It is a two-stage sample design because in the first stage the PSUs are selected, and in the second stage housing units or Secondary Sampling Units (SSU) are selected from the PSUs selected in the first stage; and it is a replicated design because the sample was independently selected in four replications, one for each quarter of the survey. The replicated design allowed for preliminary estimation by quarter but with a higher margin of error than that of the entire survey.

This sample design allows for flexibility in the disaggregation as required by users, insofar as accuracy levels allow it.

### 3.1 Population and statistical unit

The population studied by ENIGH 2018 are all usual residents of selected housing units at national level. Excluded from the study is the population residing in collective housing units (hotels, hospitals, nursing homes, jails, convents, student dorms, and collective work accommodation).

### 3.2 Sampling frame

The housing units sampling frame (MMV-2011) used for sample design and selection in ENIGH 2018 was built from the maps and information generated by the 10th National Population Census and 6th Housing Census of 2011.

The MMV-2011 is an area framework where framework units, or primary sampling units (PSUs), are clearly limited geographic areas, in which households are linked to their respective individual housing units located within said PSUs. On average, PSUs have 150 housing units in urban areas and 100 housing units in rural areas.

This sampling frame includes the necessary information for the statistical design of surveys, such as socio-demographic variables for the stratification and identification of subpopulations of interest, as well as geographic variables for disaggregation and geographic coverage. There is a total of 10,461 PSUs, of which 64,5% are classified as urban units and 35,5% as rural units. In terms of number of housing units, the framework includes 1,360,055 housing units, 70,6% in urban areas and 29,4% in rural areas (see Table 3.1).

TABLE 3.1

## Costa Rica. Distribution of PSUs and housing units of the sampling frame 2011 (MMV-2011)

Domain	UPM		Housing units	
	Total	Percentage	Total	Percentage
<b>Costa Rica</b>	<b>10 461</b>	<b>100,0</b>	<b>1 360 055</b>	<b>100,0</b>
Urban	6 745	64,5	957 729	70,4
Rural	3 716	35,5	402 323	29,6
<b>Central</b>	<b>5 975</b>	<b>57,1</b>	<b>817 183</b>	<b>60,1</b>
Urban	4 862	81,4	695 856	85,2
Rural	1 113	18,6	121 324	14,8
<b>Chorotega</b>	<b>965</b>	<b>9,2</b>	<b>114 531</b>	<b>8,4</b>
Urban	448	46,4	60 267	52,6
Rural	517	53,6	54 264	47,4
<b>Pacific Central</b>	<b>725</b>	<b>6,9</b>	<b>89 571</b>	<b>6,6</b>
Urban	402	55,4	54 577	60,9
Rural	323	44,6	34 994	39,1
<b>Brunca</b>	<b>938</b>	<b>9,0</b>	<b>111 039</b>	<b>8,2</b>
Urban	304	32,4	44 679	40,2
Rural	634	67,6	66 360	59,8
<b>Huetar Caribbean</b>	<b>994</b>	<b>9,5</b>	<b>124 516</b>	<b>9,2</b>
Urban	487	49,0	68 259	54,8
Rural	507	51,0	56 257	45,2
<b>Huetar North</b>	<b>864</b>	<b>8,3</b>	<b>103 215</b>	<b>7,6</b>
Urban	242	28,0	34 091	33,0
Rural	622	72,0	69 124	67,0

Source: INEC-Costa Rica. Sampling process. Housing sampling frame, 2011.

### 3.3 Stratification of the sampling frame for selection

Strata are subpopulations of interest generally related by geographic and socio-demographic characteristics, formed with the objective of ensuring their representativeness in the sample and increasing the statistical accuracy of the estimations derived from the survey.

The MMV-2011 stratification variables in the sample design of ENIGH 2018 are the planning regions and the classification of urban and rural areas, and in the Central region a socioeconomic classification of the urban area. This socioeconomic stratification was created from the information collected in the National Housing and Population Census 2011 and the National Household Survey 2010. Five indexes were created: education, occupation, devices, overcrowding, and dependent persons, with which a model was created that allowed for an estimation of household income in the census, and which contributed to the stratification of the PSUs of the sampling frame according to the estimation of per capita income by PSU.

### 3.4 Study domains

Study domains are subpopulations generally associated with geographic areas for which estimations of a known accuracy are required. Among the main indicators of ENIGH 2018, the sample design considers as study domains the national level, the urban-rural area, and the six planning regions: Central, Chorotega, Pacific Central, Brunca, Huetar Caribbean and Huetar North.

According to the sample design, results can be obtained for other subpopulations of interest. However, their level of disaggregation will depend essentially on the accuracy of the indicators estimation and the size of the resulting sample in each case.

### 3.5 Sample size, distribution and selection

In order to determine the ENIGH 2018 sample size, the results of ENIGH 2018 were considered, and the accuracy levels obtained for the main income sources were analyzed, as well as the average household expenditure according to expenditure classification groups (COICOP). From the final sample sizes adjustments were made to improve accuracy levels, and thus guarantee relative errors below 15 % for the survey study domains. In addition, a 30 % adjustment was considered due to the sample loss for a final sample size of 9,828 housing units.

Concerning field work, a sample of 21 housing units per PSU was considered for a total of 468 PSUs distributed in four replications of equal size and design, one for each survey quarter.

TABLE 3.2

Costa Rica. Distribution of sample PSUs and housing units in the sample

Study domains	PSU		Housing units	
	Absolute	Relative	Absolute	Relative
<b>Costa Rica</b>	<b>468</b>	<b>100,0</b>	<b>9 828</b>	<b>100,0</b>
<b>Area</b>				
Urban	324	69,2	6 804	69,2
Rural	144	30,8	3 024	30,8
<b>Planning region</b>				
Central	162	34,5	3 402	34,5
Chorotega	63	13,5	1 323	13,5
Pacific Central	54	11,5	1 134	11,5
Brunca	63	13,5	1 323	13,5
Huetar Caribbean	63	13,5	1 323	13,5
Huetar North	63	13,5	1 323	13,5

Source: INEC-Costa Rica. Sampling process. Housing sampling frame, 2011.

### 3.6 Expansion factors

The expansion factor is the number of units in the population that each unit in the sample represents (housing unit, household, person) and is a weight applied to each statistical unit in the sample in order to obtain a population estimation.

The basic expansion factor is obtained as the inverse of the selection probability in the first and second sampling stages and is calculated at each selection stratum level. Accordingly, all PSUs within the same stratum have the same basic expansion factor initially. However, an outdated sampling frame and non-response problems affect the initial selection probabilities of each housing unit. To correct this, the basic expansion factor is adjusted as follows:

- a. **Adjustment due to non-response:** non-response from selected housing units alter initial selection probabilities. To correct this, an adjustment due to non-response is performed. This adjustment consists of multiplying the expansion factor by the ratio of the total number of housing units selected to complete the survey to the number of housing units that actually completed the survey. This adjustment is also performed individually according to survey results in each PSU.
- b. **Adjustment due to population growth:** as a result of the dynamic nature of the population, new housing units are frequently found in the selected PSUs that affect the initial selection probabilities of housing units within each PSU. Thus, the expansion factor is adjusted according to the growth observed during field work by multiplying the basic expansion factor by the ratio of the updated number of housing units to the number of housing units included when the sample was selected. This adjustment is performed individually for each PSU according to the growth observed and reported during field work.
- c. **Population adjustment:** adjustment due to growth partially correct problems related to outdated frameworks only in sample PSUs. Even when applying this adjustment, underestimation may be common for population estimations obtained from the survey. This results from the framework being outdated due to demographic dynamics and spatial distribution of the population (in the urban-rural and regional structures), becoming more evident as the survey is increasingly farther away from the time of building the sampling frame. This underestimation issue affecting the entire sampling frame is corrected with a different adjustment by applying the expansion factor after adjusting it due to growth and non-response. This adjustment consists of multiplying the expansion factor by the ratio of the population projected in the month of the survey to the population estimated according to the survey. This adjustment is made at planning region level.
- d. **Final expansion factor:** the final expansion factor is obtained by multiplying the basic expansion factor by the amount obtained in the three previous adjustments. The final expansion factor is the same for all the housing units within the same PSU.

In order to obtain the estimations for the characteristics studied in the survey, the value of a specific variable or characteristic of interest for which information was provided by each person or household in the sample is multiplied by the corresponding expansion factor of the PSU, and the result is added to each geographic classification: area, region and national level.

### 3.7 Sampling errors

Unlike a census, data provided by a sample are subject to sampling errors, as statistical research is conducted only with a representative part of the population. Sampling errors are not fully identified. They can be estimated, however, based on the data provided by the sample.

The complex sample in ENIGH requires special estimation methods for the calculation of sampling errors that consider the design characteristics: stratification, clusters, and weights. These methods are available in statistical programs. In the case of ENIGH 2018, the complex sample module of the Statistical Program for Social Sciences (SPSS) is used.

Although several are the variables studied in the survey, sampling errors are calculated for an important group of characteristics at national level, disaggregated by area and planning region. In order to allow for a simpler interpretation of results, the information included in each column of sampling errors tables of ENIGH 2018 is explained below.

- a. **Estimation:** the estimation is the value of the characteristic studied in the sample weighted by the expansion factor and may be a population total, an average, or a percentage
- b. **Standard error:** the standard error, or sampling error, is a measurement of the accuracy with which an estimation obtained from a sample approximates to the average of all the possible samples that are similar in design. This error is not fully identified. It can be estimated, however, based on the data of the sample through variance, a measurement of data variability obtained from the differences of each observation in relation to their average.
- c. **Confidence interval:** the confidence interval is a range of values within which the value of the population characteristic to be estimated is expected to fall with a certain degree confidence. The intervals presented in the tables have a lower limit and an upper limit within which the population value is expected to fall [with a 95 % of confidence].
- d. **Coefficient of variation (CV):** it is also called relative error, as it is the number obtained by dividing the quotient of the standard error by the estimation. The CV indicates the percentage accuracy level of an estimation. In fact, in household surveys, experience has demonstrated that estimations with a CV of up to 5 % are very accurate. If the CV reaches 1 %, estimations remain accurate; a CV of up to 20 % is acceptable; and lastly, a CV of over 20 % indicates that the estimation is not very reliable and, therefore, must be used with caution.
- e. **Design effect:** the design effect (DEFF) measures the accuracy lost when using a complex design instead of a simple random design. Complex designs are used primarily when a random selection cannot be performed due to budget constraints or lack of a complete and detailed frame of the target population (housing units or persons). For example, a design effect of 1.5 indicates that the variance of the complex design is 1.5 times greater than the variance of a simple random design; in other words, the variability increases by 50 % when using this type of design instead of simple random sampling.
- f. **Sample** it is the total number of observations in the sample (housing units, households, or persons) with which an estimation was obtained. For this version, the final sample consisted of 6,980 housing units and 7,046 households which, in relation to the initial sample, and regardless of the framework problems, account for a final response rate of 80,4 %. The table below shows this final sample results by study domains.

TABLE 3.3

## Costa Rica. Results of field work by area and planning region

Area and planning region	Housing units			Households		
	Selected housing units	Effective housing units	Problems with framework	Households visited	Households with response	Response rate
<b>Total</b>	<b>9 828</b>	<b>6 980</b>	<b>11,6</b>	<b>9 906</b>	<b>7 046</b>	<b>80,4</b>
<b>Area</b>						
Urban	6 804	4 600	10,6	6 859	4 644	75,7
Rural	3 024	2 380	13,9	3 047	2 402	91,5
<b>Planning region</b>						
Central	3 402	2 063	8,5	3 430	2 084	66,4
Chorotega	1 323	1 028	11,8	1 340	1 042	88,2
Pacific Central	1 134	882	11,2	1 138	886	87,6
Brunca	1 323	1 003	13,8	1 328	1 008	88,0
Huetar Caribbean	1 323	1 005	14,5	1 338	1 018	89,0
Huetar North	1 323	999,0	14,4	1 332	1 008	88,4

Source: INEC-Costa Rica. Sampling Process, 2018.

## 4. Data collection

The ENIGH 2018 field work design was similar to that used before, as the sample design used is the same as that of the sixth survey (ENIGH 2013). This operation was conducted nation-wide, between 12 February 2018 and 6 March 2019, and included all six planning regions, as well as urban and rural areas.

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FIGURE 4.1

Costa Rica. Map of the selected PSU sample for ENIGH 2018



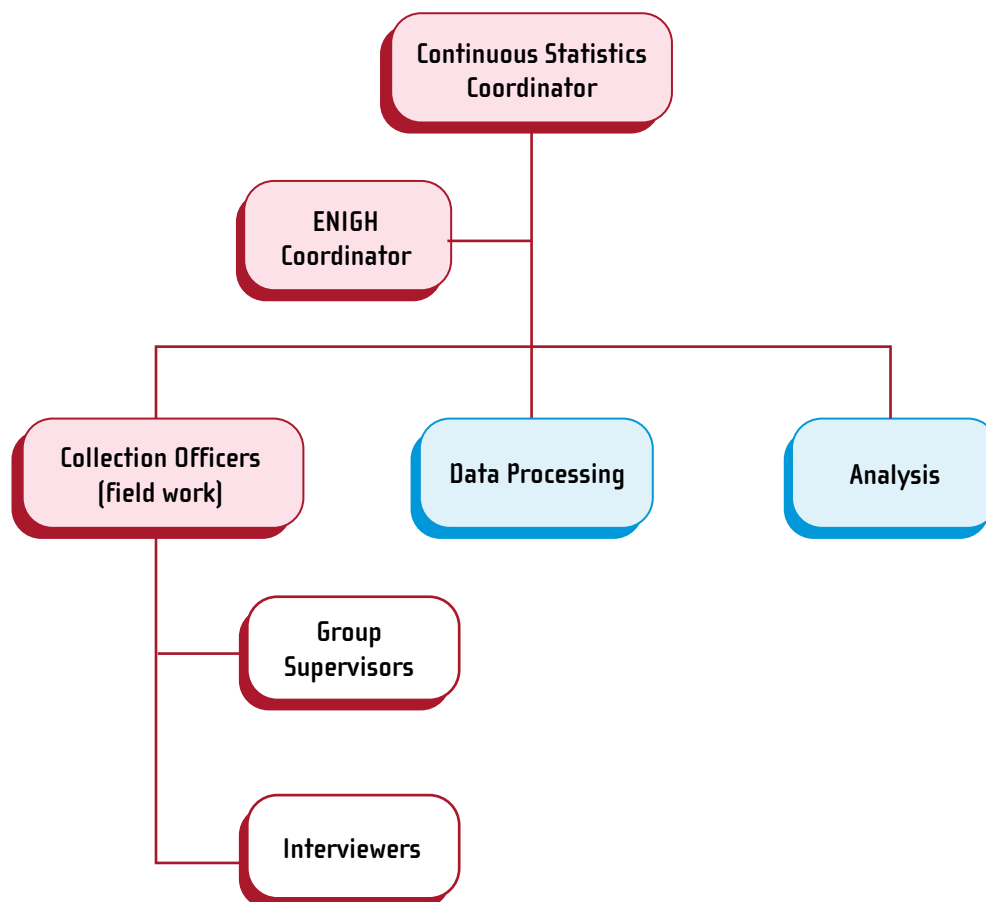
Three months prior to data collection, a pilot survey was conducted with the main objective of testing the recording procedure of the corresponding forms using mobile devices (tablets), as well as the computer systems linked to workload transfers, delivery of collected data, inconsistency and balance review, access to digital maps, digital mapping update, and personal expenditure mobile app (form 3). Logistics and operating tools (questionnaires, manuals, and training material) were also tested.

Additionally, as part of the initial training of supervisors and interviewers (conducted two weeks prior to the start of field collection), a test sample was obtained, called “ten-day period number zero,” including a selection of 15 PSUs and a total of 315 housing units.

### 4.1 Organization of field work

The field working group was initially composed of 78 persons, including interviewers, group supervisors, drivers, and general managers. This organization structure of ENIGH 2018 is shown in figure 4.2.

FIGURE 4.2  
Costa Rica. ENIGH field collection organization chart



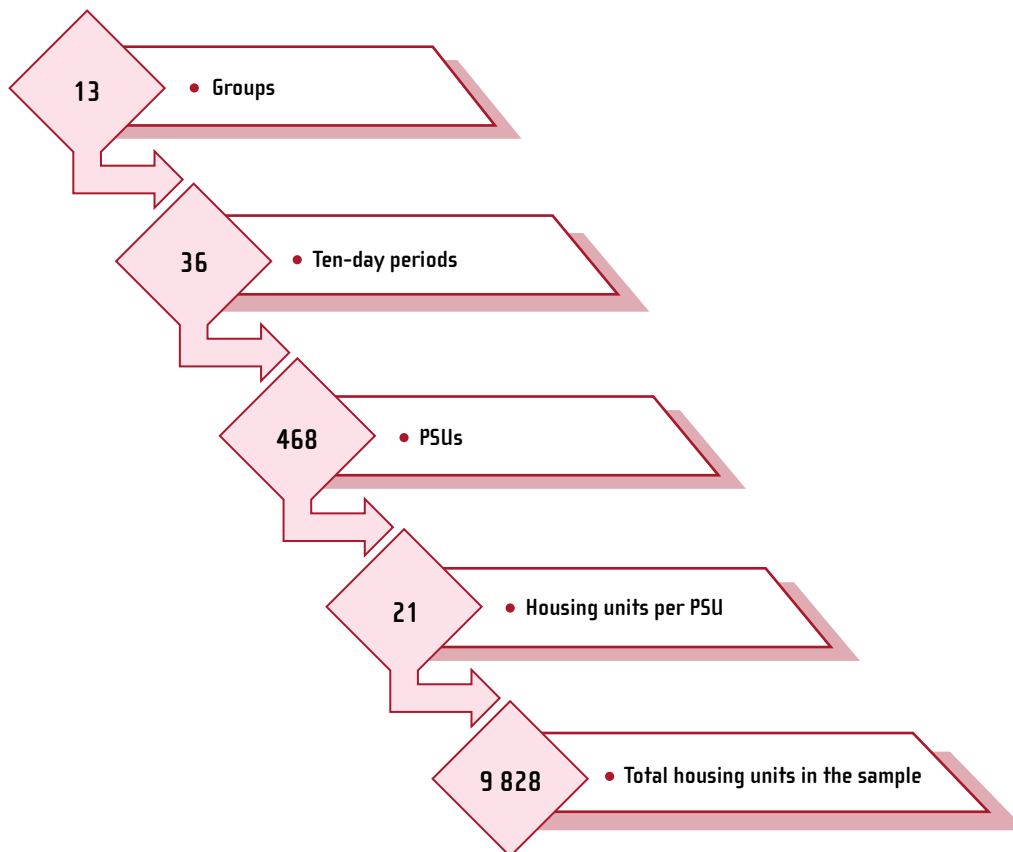
The entire ENIGH organization was conducted from the headquarters, where all processes took place and interviewers gathered before starting each ten-day period of work.

In total, thirteen PSUs were visited in each ten-day period. There was the same number of groups comprising three interviewers, one supervisor and one driver of the work vehicle. In addition, there were also two complete groups who were prepared to work in case of resignation, illness, or other reasons. Also, they were in charge of conducting pending interviews by visits to the household or telephone calls, as well as investigating on prices unknown to data providers and training new personnel.

After one year of work distributed in 36 ten-day periods, four group rotations were made, changing the persons working with each supervisor. Support groups also rotated every ten-day period. An equal distribution of work among supervisors was made, so that every person had the same number of ten-day periods of work in office support.

FIGURE 4.3

## Costa Rica. Data collection distribution





## 4.2 Personnel recruitment

Field personnel was recruited in various stages. First, applicants were selected according to their compliance with requirements such as field work experience in INEC, customer service, and/or other kind of survey experience. Then, tests were applied, such as health tests, basic math tests (averages and large number data entry), use of mobile devices in simulated interview, general intelligence tests (matrices), situational judgment tests (CPS, in Spanish), and Benziger Thinking Styles Assessment<sup>39/</sup>. Final selection was determined based on approval of the training course for ENIGH interviewers and supervisors.

Education requirements are established in the institutional job position manual. In the case of interviewers, the only requirements were holding a high school diploma and being of legal age. However, experience was also considered for recruitment, as well as full-time availability for continuous traveling. Moreover, group supervisors, in addition to having a high school diploma and being of legal age, were required to have experience as field supervisors or interviewers with at least one trial period assessment approved in another statistical operation by INEC.

The type of contract was temporary for the time required by this survey. In this case, interviewers worked during one calendar year divided in two parts: from February to December 2018 (11 months) and from January to 6 March 2019 (2 months). In the case of supervisors, this period was extended by 2 more days at the end of the collection period, except for 6 group supervisors who had been hired from the pilot survey, that is to say, their employment agreement started three months before and they collaborated with the organization and developed training for other workers.

General field managers were part of the ENIGH technical team; they participated in the initial stages of tool design, material preparation, field tests, system tests, and other logistics tasks for conducting the survey. They were recruited 18 months prior to starting the collection stage, and were selected after a technical test and an interview conducted by the ENIGH coordinator. Managers were university graduates in administration and economics, and the term of their contracts ended once the production of statistical outputs and dissemination work were completed.

All personnel were hired under a special services modality as employees, with a fixed monthly salary paid every 15 days. Traveling included the respective accommodation and food per diem allowances, according to the work place for each period.

## 4.3 Collection training

Initial training was provided for 10 days and was considered part of the recruitment process. Test results were the final filter for selection. An additional 25 % of the required personnel was convened, foreseeing cases of absence or dropout during the training process, or of failure to pass the tests.

The course organization process was conducted two months prior to the date. It was conducted by a group of supervisors hired for the pilot survey (6) and the ENIGH technical group (5).

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<sup>39/</sup> This test was aimed at knowing if the applicant had specific dominant levels of action: creative, social, order, leadership and decision making. Also, they helped determine if the person was extroverted or introverted. The result was very helpful for organizing work groups, as persons build rapport more easily with others with the same thinking style, as they behave very similarly. It served also as support for selecting the best group supervision profiles.

Tasks were divided with the goal of complying with all elements required to develop the course. Interviewer instructions were reviewed with the purpose of identifying aspects to be eliminated, added, or improved. The same was done with PowerPoint presentations that were used to train the supervisors hired to collaborate in the pilot survey and the process prior to data collection of ENIGH.

Six tests were created to measure the applicants' knowledge acquired throughout the course. Members of the training team not in charge of creating the test completed it in order to identify errors, ambiguities, and establish its duration. Practice tests were also prepared so that participants may use and enhance what they had been learning, as well as review activities with the purpose of implementing different strategies to clarify doubts and go over the subjects learned. Moreover, this technique allows for the use and incorporation of several teaching methods.

For this course, applicants were divided into two groups, so subjects had to be divided among the teaching team.

Furthermore, considering the large number of participants, two groups were formed and, because the same content was going to be taught in both groups for equal learning, it was important that instructors gathered to unify criteria, follow the same guideline, and discuss each activity and the time, material, and persons responsible for each section. To keep a certain order throughout the entire process, it was important to keep these guidelines handy.

Prior to the applicants starting the course, they were sent an email with a document containing important information on the Institution and the survey, to introduce applicants to the project.

Training was divided in two parts: one week for thematic content and interviewing techniques, and another week for the use of tablets for recording information of two forms, encoding, entry of data collected on paper, and review of consistency and financial balance of households. These contents were established in two manuals handed to each participant in printed form: a thematic manual and a manual on review, encoding and use of the recording system and data entry in the tablet.

#### **4.4 Strategy and materials for raising awareness among data providers**

Devising a communication strategy for this type of survey is particularly relevant because it usually has lower response rates than other household surveys. This is expected given the large amount of detailed and sensitive information requested, as well as the duration and frequency of visits during one week. The work consists of raising awareness and persuading data providers so that they not only agree to be interviewed but also keep the quality of answers for all questionnaires and from all household data providers.

For ENIGH 2018, this work was done with the goal of showing the population the importance of this specific research and of INEC in general as producer of data for public policy decision making, inspiring confidence in data protection and providing general interest statistics. The selected population was also offered an incentive for providing detailed answers to the forms. For this, support was received from an external communication agency.

Actions are summarized as follows:

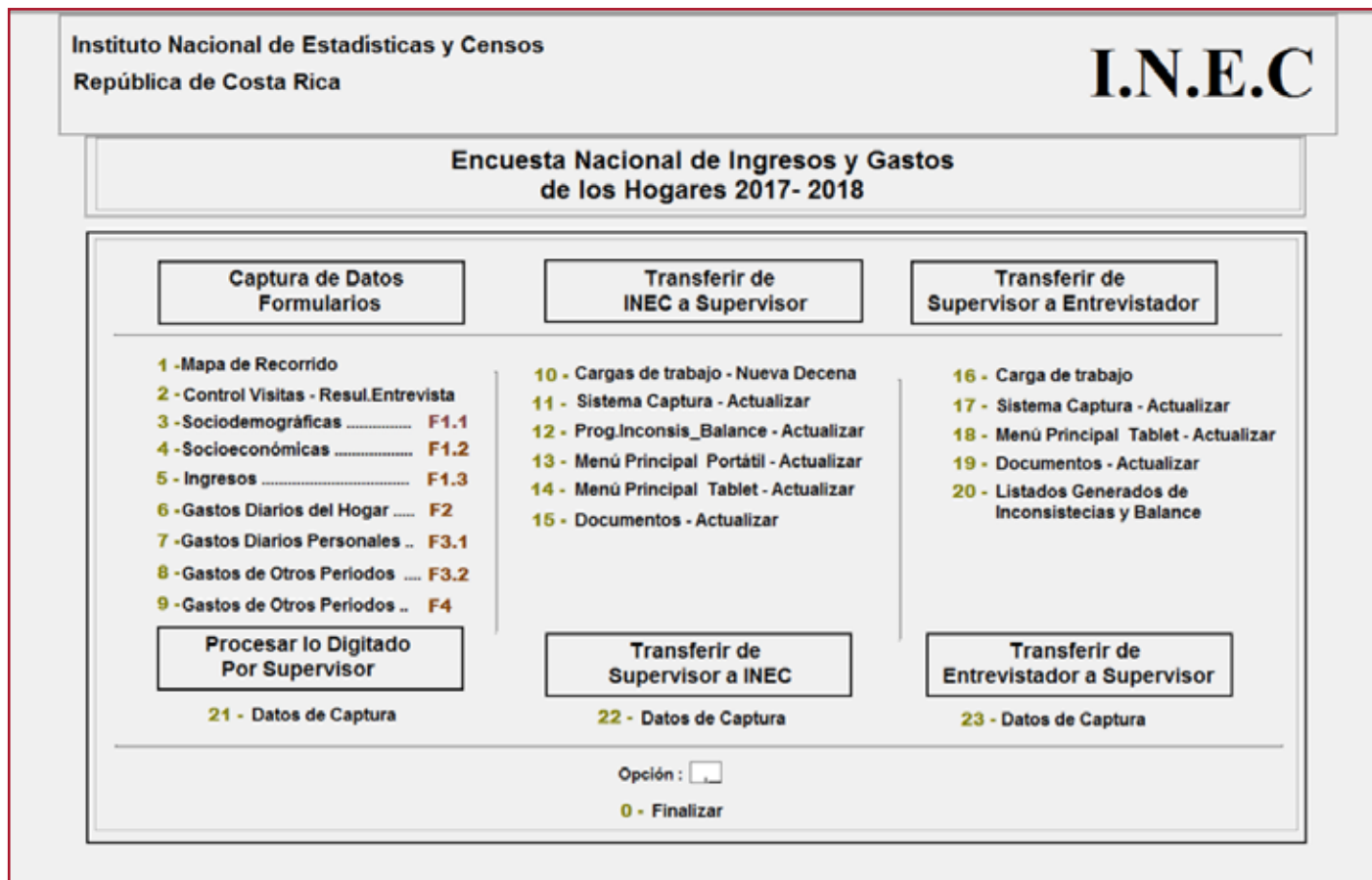
- Production of a newsletter and video with instructions for data providers, on the survey, the importance of their responses, and the confidential handling of information. The newsletter was handed directly upon arrival to the selected housing units. The video was uploaded to the INEC YouTube channel and was available to interviewers on their tablets, so they could easily show it to data providers. A letter detailing the objective of the survey, the selection process, the importance of the data providers' collaboration, and contact information was also provided.
- Special leaflets addressed to high-income strata asking for their cooperation were prepared. These leaflets were handed out by interviewers in the selected areas, but were also put in the shopping bags of a supermarket chain serving these population groups, during the week prior to the visits to such area.
- Meetings with restricted access condominium managers were scheduled, explaining the field operations and which the selected housing units were, and they were provided with the brochures and video. Later, a letter indicating the exact dates and the personnel working in the area was sent (with their photos and IDs).
- Each selected household who accepted to be interviewed was given a synthetic shopping bag with zipper and the INEC logo.
- A public relations strategy with the media was adopted during the first months of the survey, which involved the participation in several radio and television programs to talk about the importance of responding, the uses of this research, and how to recognize or identify INEC interviewers.
- During the months of the survey (every other month), a television advertisement on the work and importance of the statistics produced by INEC was broadcast, stating as well the importance of opening the door to interviewers. Some pictures related to this campaign to recognize INEC were also displayed for some months on Metropolitan Area buses.
- The names, ID numbers and photographs of all field personnel were published on the institutional website of INEC, so that their identity could be checked.

#### 4.5 Systems for field data collection, entry and validation

For the first time, ENIGH 2018 recorded data in mobile devices (tablets) for some sections of forms 1, 2 and 4. However, data was also entered for the remaining information collected in paper form by the same field personnel and in the same devices, with own systems developed in the Centry platform (for Android). Laptops and smart phones were also used by group supervisors. Some C5Pro language systems were developed for these other devices.

Laptops served as management, reception and preliminary cleansing centers for data transferred to the headquarters. Laptops had a menu that allowed for the synchronization with the central server of INEC to receive workloads and maps, update systems, and return collected data files. In addition, a data entry system for questionnaires completed on paper was also included. Figure 4.5 shows the menu screen for the laptop system.

FIGURE 4.4  
Costa Rica. Computer system screen for group supervisors



In addition to communicating, smart phones were also used to access the DruxMaps (free software) application, which is the system that enables recording map elements in the field for their subsequent incorporation to the Geographic Information Systems (GIS). With this tool, supervisors were able to know the workload distribution before, during and after each interview; they were showed access routes and maps with the selected structures, and they could make annotations on the maps in order to report relevant map changes.

FIGURE 4.5

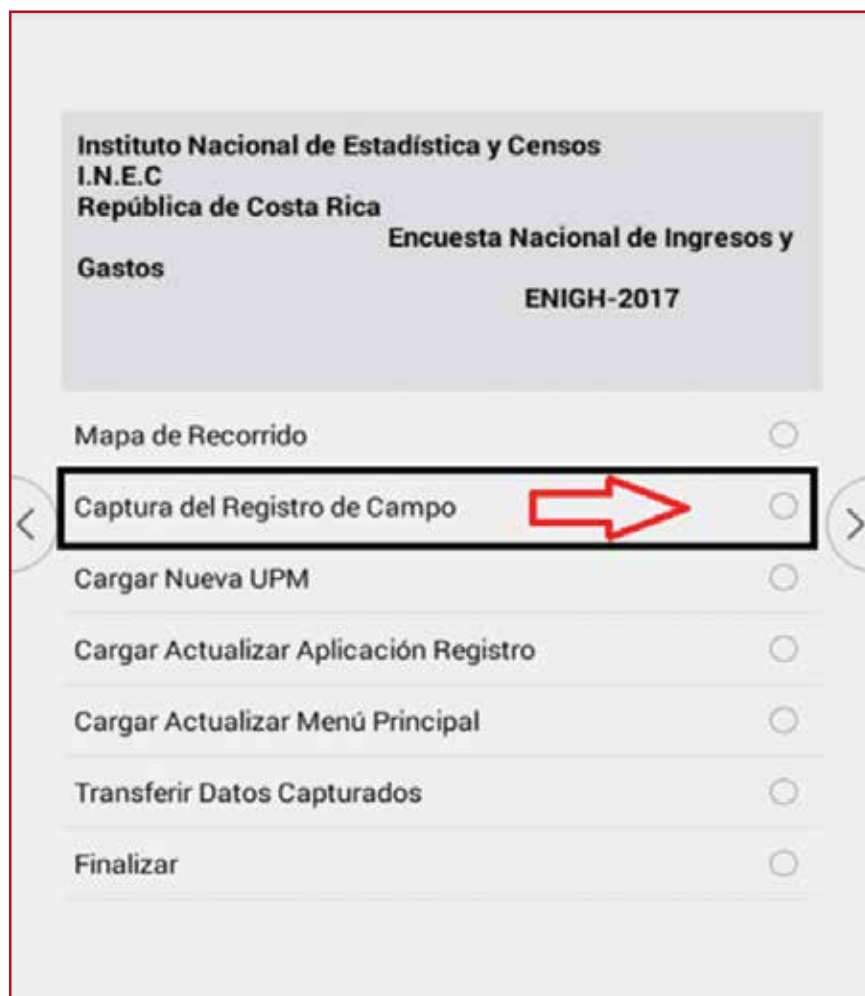
Costa Rica. Map view of the PSU selected with the DruxMaps system



Moreover, smart phones included an app developed in CsEntry with a full list of PSU structures, which allowed for the registration of new structures or change of activity, that were subsequently transferred to the central server as databases for the corresponding expansion factor calculations.

FIGURE 4.6

Costa Rica. View of the system menu for accessing maps and updating the PSU structure list



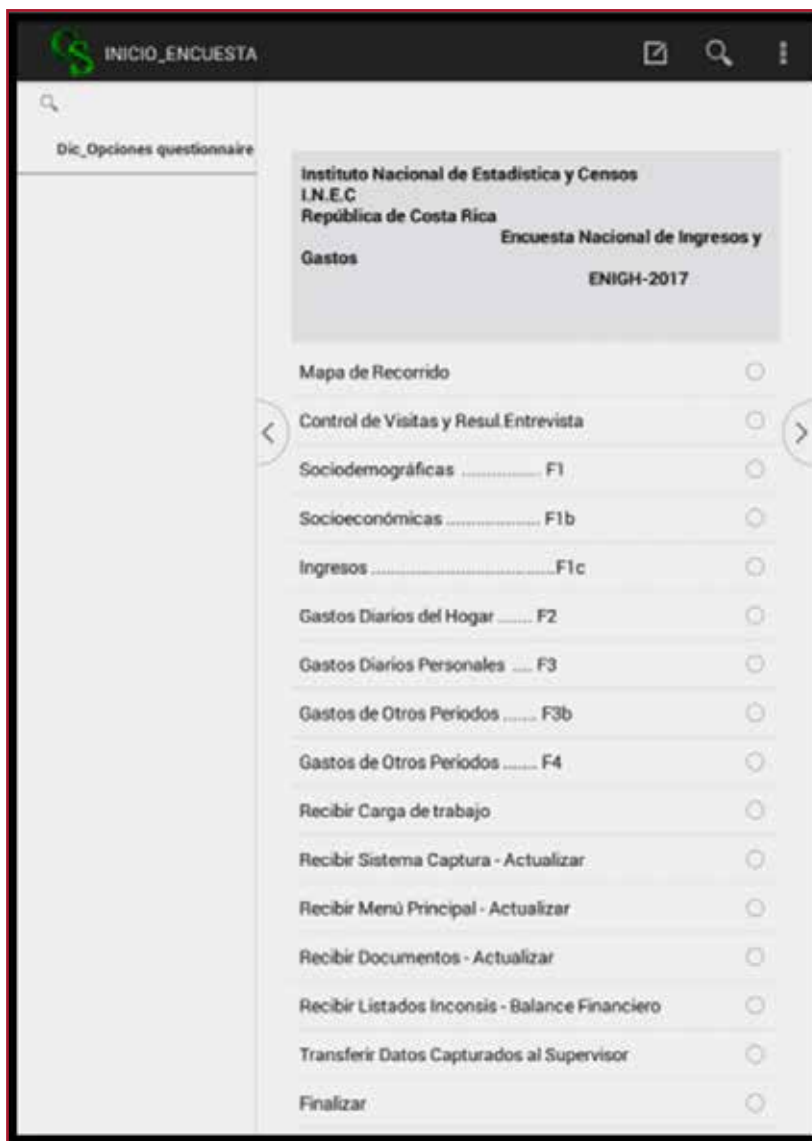
The recording process can be summarized in the following sequence applied to every subsample (10 consecutive working days):

- a. **Workload gathering:** this information was received by synchronization with the central server through internet connection. Each subsample workload had been pre-established for each group, with the use of codes, so that each supervisor received his/hers. Also, the maps and structure lists were received by synchronization with the supervisor's phone.
- b. **Workload transfer to interviewers:** this was done from the supervisor's laptop to each tablet via bluetooth. The transfer included the map, PSU identification, and the list of selected structures. The supervisor was responsible for distributing the 21 selected housing units among the 3 interviewers.

- c. **Conduct of interview with immediate data recording and entry in the tablet:** this included the questionnaires on member and housing unit characteristics, consumption habits, and recalled expenditure. Income forms were completed on paper, but data had to be entered in the tablet, as well as all data recorded in the forms filled out by data providers (daily household and personal expenditure). For these forms, the corresponding data entry systems were also developed and incorporated to the tablet.
- d. **Transfer of data files from the tablet to the laptop:** the information collected and entered from each household was transferred to the laptop managed by the supervisor, also via bluetooth. This transfer could be done at any time with existing information, which ensured the local backup of data. Therefore, they were recommended to make daily or frequent transfers.
- e. **Inconsistency generation, balance and coverage control:** these processes were agreed to be done on the laptop, as they integrated all the information from the questionnaires at household level, determined information inconsistencies (in a list), and generated a balance sheet (average monthly income/expenditure), which had to be studied and interpreted by each interviewer. The resulting inconsistencies list or file and the balance could be returned to each tablet as a readable file, so that each interviewer could review and correct missing or inconsistent information, or prepare justification notes.
- f. **File transfer from the laptop to INEC central server:** data stored in the laptop could be transferred at any time to the central database, automatically with internet connection. Each supervisor had to make one daily transfer in order to back up all the information collected.
- g. **Visualization of web reports for supervisors:** data uploaded to the central database by each group supervisor could be reviewed by an access link with key. This screen displaying the information recorded for each household allowed reviewing the completeness of the information, notes added, and the balance summary. This was done because laptops did not have a direct local data display system that allowed reviewing the information transferred from the tablet.
- h. **Transfer of updated lists of PSU structures:** this transfer was done from the smart phones to the central server via internet or cable, when supervisors returned from each subsample, and contained the records of new housing units and/or structures found, with changes of activity, according to the initial list provided.

FIGURE 4.7

Costa Rica. Menu screen of the tablet system used by interviewers



Besides these systems, a mobile app was developed for this version of the survey for filling out (daily) personal expenditure or form 3. The application was developed by an outside enterprise, available for download for Android from “Google Play,” but also accessible from other devices by an access “link.”

The application had different access permissions: data provider, interviewer, supervisor and administrator. The data provider had to provide the interviewer with an email address, which was recorded in the system to send him/her a user and password. With this tool, data providers were able to update their information (name, age), add daily expenditure during the reference week, and write personal expenditure of the last month and the last 3, 6 and 12 months, according to the categories included in each period. In addition, expenditure reports were displayed, that could be modified and downloaded in pdf, Excel and txt formats. For these tasks, an internet connection was needed.

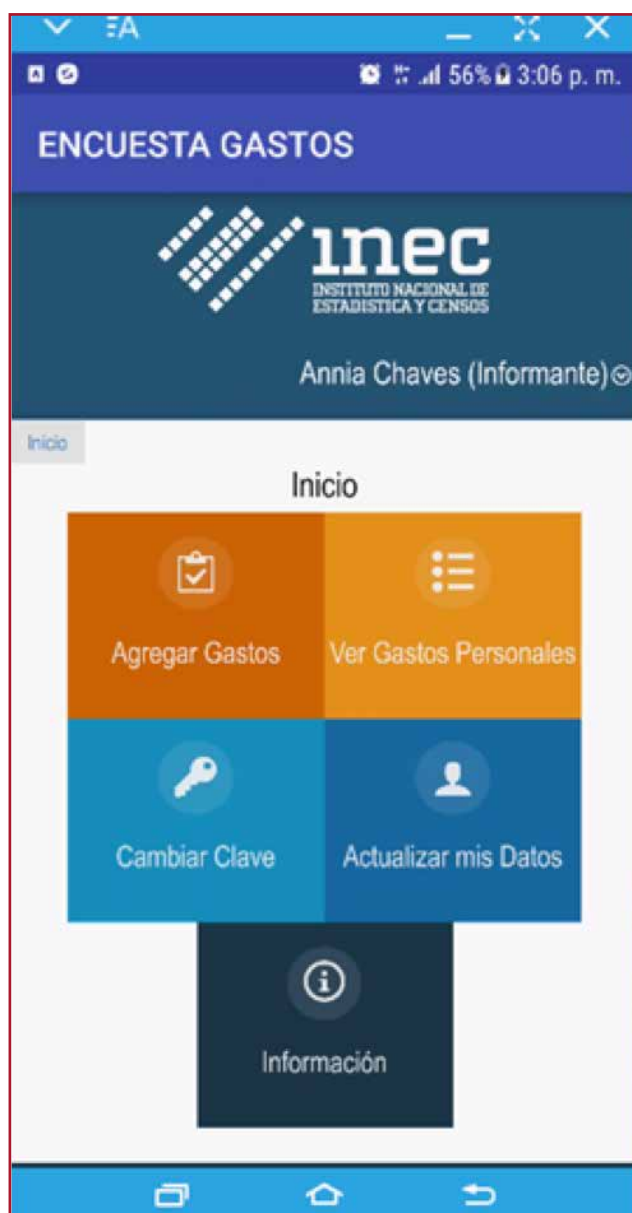
Interviewer access allowed him/her to see the annotations of data providers (created by them), as well as correct and complete weight and size columns according to the data provider's description.

Supervisor access was view-only and administrator access allowed viewing and editing data of all data providers.

The results obtained by using the application were not as satisfactory as expected, as there were few users, mainly because of the need to have internet connection and the resulting mobile data use by the data provider.

FIGURE 4.8

Costa Rica. Initial mobile app screen for the filling out of form 3 by the data provider



## 5. Data processing

The data processing and collection stages were conducted simultaneously, with a mismatch of one to three ten-day periods (15 days). This stage started on 6 February 2018 with validation personnel training; on 15 April 2019 the initial cleansing phases ended and other phases started for adjustment, imputation and creation of new variables, that extended until October 2019.

Data processing was conducted in several stages, and included the review of microdata at household level and the subsequent review of data entered to databases, until the information was ready for the analysis of results. Microdata review included the encoding of open-ended questions and the validation phase. These stages began in the field with interviewers, who encoded and cleansed basic inconsistencies. In addition, they conducted an aggregated consistency analysis by household called balance sheet, where household income and expenditure were contrasted and transformed into monthly values.

During the office process, files and paper forms received from field work were reviewed, code verification and household general information validation was conducted, inconsistencies from a broader plan were cleansed, and missing information was completed from telephone calls to households, administrative records, or other sources such as institutional websites, web sites of supermarkets or other stores, among others.

When the information of complete subsamples was added to databases, atypical values were reviewed, in particular for foods, in terms of both expenditure and amounts. These values were corrected with information from the household itself in the extent possible and with the help of other records. Lastly, once the total sample was completed, ignored or rejected data were imputed in the database, and new variables were generated.

The subprocesses mentioned and tools used are described below.

### 5.1 Training of validation (cleansing) personnel

Personnel training was provided for one week on 5-9 February 2018. Training covered general knowledge topics related to the survey and the deepening of the concepts investigated; criteria were established for cleansing field information using the assigned tools; and the use of validation computer systems and filling out of work forms was practiced (case control sheets). The review, encoding and data entry manual was used as main supporting material, and was also used by interviewers, in addition to presentations and practices.

Later, while the work was being conducted, some feedback meetings were necessary to stress certain instructions or criteria for the adequate correction of data when errors or inconsistencies were detected in validations. Also, new cases, doubts, and rationale for correct solving were discussed.

### 5.2 Validation

Data validation comprised cleansing at microdata level, according to criteria established, guaranteeing the quality of the information recorded through its consistency analysis.

This process consisted of two review stages: one where each household's information was examined record by record, and another at aggregated level by variable or set of variables selected from aggregated databases.

### 5.2.1 Microdata validation by household

This subprocess included the following activities:

1. **Code verification:** it consisted of reviewing the encoding of each of the open-ended questions where values had been assigned under a certain classification (by field personnel), such as higher education program, institutional sector, branch of activity and main and secondary employment occupation, as well as goods and services codes recorded in forms 2, 3 and 4.
2. **Inconsistency review:** this review consisted of searching for established patterns in the information in order to detect contradictions or missing values in the information received, with the purpose of verifying them with the original data providers, to change, accept or delete them. A total of 1,212 established inconsistencies were detected. Each validation officer, using the CSPro system, took such inconsistencies and corrected the errors in each household form.

Each validation officer was responsible for cleansing the highest number of inconsistencies as possible, by using all the information to which he/she had access, and received support from the validation supervisor. Therefore, the following was available to each validation officer: external telephone calls using headphones to call interviewers or households; computer equipment with internet access; supporting materials such as dictionaries on branch of activity and occupation codes, goods and services codes, and career; file with municipal information for the entire country; template spreadsheets to verify income according to source; food presentation manuals; questionnaires in PDF format, and review instructions.

3. **Incorporation of information on shopping invoices issued by collaborating supermarkets<sup>40/</sup>:** an application was created in the processing systems to this end, where the invoice information was entered and subsequently sent by email to cooperating supermarkets. When the return file was received with the breakdown of purchased items, several consistency verifications were made of the cost and number of items, which was later “automatically” encoded if the item was already added to the bar code dictionary<sup>41/</sup>. Otherwise, the encoding was conducted manually (and this code was added to the correlation tables database).
4. **Review of household balance sheet:** this is a summary report on the financial status of each household, contrasting income and expenditure of each unit from the information they provided. The validation officer was expected to understand the economic behavior of each household reviewed and thoroughly examine the cases with a balance of  $\pm 20\%$  (deficit or surplus). In these cases, the particular situation of each case had to be corrected or otherwise described in order to justify field information.

The validation phase lasted, on average, almost 10 days per PSU by validation officer in the first replication, 9.32 days in the second replication, 6.85 days in the third, and finally around 4 days in the last 9 ten-day periods.

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40/ This refers to an information request agreement entered into with the main supermarket chains throughout the country, under which we asked households to furnish shopping invoices from these establishments and recorded the information identifying the purchase (supermarket, branch, invoice number) in files that we sent monthly to enterprises, who in turn sent a disaggregated file with the items on each invoice, including brand and weight specifications.

41/ The building of this tool started with ENIGH 2013, as we had files containing bar codes of all items of at least two supermarkets, which were linked to expenditure codes used for this survey.

### 5.2.2 Analysis of atypical values and aggregated consistency

With the aggregated information of subsamples, an extreme value analysis was applied for a large number of numerical variables (expenditure and income) with the purpose of validating information that would serve as processing database. Minimum atypical values were those values lower than three times the interquartile range minus the value of the first quartile, or upper extreme values if the interquartile range was 3 times higher than the third quartile.

Each variable was treated differently depending on its nature. In some cases, information from other variables was reviewed to check the relevance of a certain value. The frequencies of each categorical variable were analyzed, or cross tables of related variables were created, in order to detect inconsistencies or missing values. Some of these inconsistencies resulted from transfer omissions or values outside their range that were not detected by inconsistencies at microdata level or were overlooked. To correct these values, correct information was searched by following the same procedure in the validation process.

As the processing of new information moved forward, new information was added; thus review was conducted on a cumulative basis.

In the case of food, price verification per milligram was used to detect potential errors in amounts or prices. This was based on the information collected in ENIGH 2013, to which data received from each ten-day period were added.

Once the required changes were made to each of the bases and, subsequently, to each replication (one quarter), descriptive statistics routines on housing units, population, employment, etc. were conducted, subject to comparison with information of other surveys such as ENAHO or ECE, in addition to the expenditure and income structure analysis and the relation between them, comparable with the information collected in the previous ENIGH.

## 5.3 Non-response treatment

In ENIGH, full non-response, in other words, households who refused to be interviewed, were not at home or were impossible to contact, was corrected by adjusting the expansion factors by primary sampling unit (PSU), assuming that non-responders within one PSU are represented by those who do respond<sup>42/</sup>. Partial non-response, in other words, incomplete responses, was corrected using external sources for missing information when possible, or by imputation by different methods, as applicable<sup>43/</sup>.

There were 4 cases of lack of partial response in which different treatments were used, according to their nature and provision of supplementary information.

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42/ This was foreseen and, thus, an adjustment due to non-response was applied in the initial sample size.

43/ Incomplete responses with very little information (sections A to F of form 1 not completed) were classified as full non-response (refusal).

### 5.3.1 Imputation for missing values in specific current income and expenditure questions

Missing values in both income and expenditure were mostly completed during the validation process through telephone calls after household visits and from indirect sources, such as public institutions and enterprises, from which information was obtained on salaries paid, prices of items and services, tax and social security withholding rates, among others. Consequently, records with a missing declared value after validation were almost non-existent. The highest frequency (100 cases approximately) was due to the inability of data providers to disaggregate municipal service expenditure into property taxes, which are generally paid for jointly. Therefore, they were separated proportionally according to the cases of correct reporting within the same PSU or, otherwise, in the same region or area.

### 5.3.2 Imputation of food expenditure reported as lump sums

In the case of daily household expenditure on food, in situations where data providers were unaware, and in order to avoid underreporting or refusal when completing daily purchases during the week, interviewers were allowed to collect information in aggregated amounts of expenditure on goods normally incurred on a weekly basis. These were classified as follows:

- Estimated value of expenditure on meats.
- Estimated value of expenditure on fruits and vegetables.
- Estimated value of expenditure on meals outside the household.
- Estimated value of expenditure on large supermarket purchases.
- Estimated value of complementary expenditure in supermarkets and the like.

A total of 558 aggregated estimations were recorded in the daily household expenditure form, which allowed for the improvement of the recording of this type of information. However, the specific classification of items, including numbers, weights and prices, remained pending. Given this situation, a procedure that allowed the imputation of variables related to the items purchased was necessary, in order to approximate the total expenditure under each type valued by the data provider.

This procedure consisted of establishing the similarity of the total expenditure for each subgroup on food or supermarket purchases among households with complete information and those with grouped information (with items pending imputation), divided into homogeneous population groups in terms of variables correlated to food expenditure. These were: geographic location (four regions), household income (by quintile) and household size (four categories). This resulted in a classification of households in 80 different groups. In each of these groups, each case to be imputed was compared to the total expenditure on the food group, and that with the lowest difference was considered the “donor” household. The expenditure information of this donor was replicated as information of the case pending imputation.

This procedure is similar to the “closest neighbor” technique, where information is imputed by taking it from an actual case and assigning it to another that is lacking information based on their similarity. In this case, coincidence is based on the grouping and expenditure by food group variables.

The following table shows the distribution of the estimated values of expenditure grouped by population subgroups, as well as the number of households from which the donor with its expenditure structure to be imputed will be obtained. For example, in the Urban Central Region group, two disaggregations were required, with one member and in quintile II, and there were 27 households from which the average structure could be obtained for imputation.

TABLE 5.1

Costa Rica. Distribution of cases with estimation of expenditure grouped and total households by per capita income quintile according to imputation domains

Imputation domains	Income quintile					Total
	I	II	III	IV	V	
<b>Urban Central Region</b>						
1 member	-	5/27	5/41	6/51	12/72	28/209
2-3 members	7/91	15/109	18/148	14/160	35/189	89/697
4-5 members	21/122	16/119	23/88	17/92	13/79	90/500
Over 6 members	7/43	-	3/16	1/11	-	11/98
<b>Rural Central Region</b>						
1 member	-	-	-	-	-	-
2-3 members	-	2/27	1/25	3/17	7/24	13/114
4-5 members	-	-	-	2/26	2/13	4/102
Over 6 members	-	-	-	-	-	-
<b>Rest of the country - urban</b>						
1 member	4/34	4/62	2/66	8/5	5/137	23/374
2-3 members	10/203	13/239	14/241	22/285	34/261	93/1229
4-5 members	12/188	17/201	18/164	18/132	11/90	76/775
Over 6 members	10/112	3/45	5/41	5/18	1/10	24/226
<b>Rest of the country - rural</b>						
1 member	2/24	-	-	1/57	8/109	11/265
2-3 members	5/155	8/172	12/218	14/203	23/178	62/926
4-5 members	9/163	4/161	5/118	11/101	8/85	37/628
Over 6 members	2/61	1/34	3/24	-	1/5	7/140

Source: INEC-Costa Rica. Data processing, ENIGH, 2018.

### 5.3.3 Imputation of own-consumption expenditure, income in kind and meals outside the household

These imputations are considered exclusively for those households reporting own-consumption income or food as salary in kind and not registering any expenditure under these concepts, or mentioning that a household member usually ate outside the household during the week, with no data being recorded during the week of the interview.

In the case of own consumption and income in kind, the information collected as income in kind served to estimate the expenditure amount that the household should have reported, both from self-employed workers (farm and non-farm workers) and employees. For the cases of meals outside the household, information was collected on type of meal (breakfast, lunch or dinner) and the number of days a week for each household member.

Own consumption expenditure cases totaled 506 persons. For them, first the item to be imputed was identified, using information from other similar cases within the same database, in addition to the economic activity and occupation developed by the self-employed worker. For instance, for agricultural activities, the main product reported was imputed.

Own consumption values to be imputed were taken to the reference period (weekly, quarterly, biannually or annually) and assigned “withdrawal from the business” or “own production” as place of acquisition and payment method, according to the type of activity developed (the former for business activity and the latter for production activity). For food equivalence and amounts, the same information regarding prices and amount by cost was used, as well as price information from the National Production Council (CNP) for the survey period. For non-food items, the amount was set at one for every case. The procedure was manual at microdata level.

The average household expenditure increased by 0,5 % in the general consumption expenditure average of all households.

A similar procedure was followed with salary in kind, where only food was considered. The value reported for income was recorded in the daily expenditure form (converted to weekly expenditure). The information used for imputation was taken from data reported by the rest of households in similar conditions. In terms of point of purchase and payment method, *cafeteria in work place* and *remuneration in kind* were used respectively. In total, 178 of these cases were imputed, accounting for an increase in the general expenditure average of all households by 0,2 %.

Lastly, the cases of food consumption outside the household considered for imputation were persons aged 15 or older, in employment, not reporting food expenditure outside the household during the week and not receiving income in kind as food or own consumption. These totaled 110 persons (from 98 households) and an average increase by 0,23 % in household consumption expenditure. The type of meal reported by each person (breakfast, lunch or dinner) was used for imputations, according to the trend of persons from households with similar income and considering the median of each.

### *5.3.4 Households with non-response or deficient responses in income or expenditure sections*

Cases with non-response in household or individual expenditure forms, but with sufficient responses on person, housing unit and income information were identified (in most cases), and a non-response or underreporting issue in food expenditure (declared in form 2) was determined upon analyzing the global behavior, by income groups and minimum values.

For the treatment of such cases, imputations using “the closest neighbor” method were applied with a regression approach, which combines the use of linear models with the imputation of a dataset actual value; in other words, missing information from incomplete units (recipients) was completed with data from similar units (donors) considered complete. This treatment method was suggested by ECLAC, which provided the technical support for its application<sup>44/</sup>.

Under this procedure, variable groups are created on the basis of their relation to or influence on the variables to be imputed (income and expenditure), in other words, based on whether they are covariables, and recipients with information on this variables are selected. Recipients with no information on covariables are dismissed, which results in the original full non-response.

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44/ This support was received in the form of advisory services from Dr. Andrés Gutiérrez, a regional expert on social statistics.

Subsequently, regression models are built with donors, taking the variable to be imputed as dependent variable and taking identified covariables for each case as independent variables, as follows:

$$\hat{y}_k = \mathbf{x}_k \boldsymbol{\beta}_i$$

Where  $\hat{y}_k$  is the vector with the values estimated by the model,  $\mathbf{x}_k$  is the set of predictor covariables and  $\boldsymbol{\beta}_i$  the set of regression coefficients. From these models, predictions are obtained, which are the main covariable for finding the appropriate donor for each recipient.

Finally, the estimate is compared to the value observed from a subset of donors with certain characteristics that are the same as the recipient's. The "closest neighbor" is the donor with the lowest absolute distance with respect to the model estimation, and the donor's data is the data imputed to the recipient.

One-hundred and ninety-eight households with no income or expenditure information were recorded, and their incomplete data was removed and replaced by the donors' complete information. After defining covariables for each imputation, 179 households with sufficient information, comprising 595 persons, were selected. Prior to the imputation process, the household data table contained 6 867 complete cases and the persons data table contained 22 096 persons. Therefore, by including the cases selected, final tables contained 7 046 households and 22 691 persons.

On the other hand, records from 4 636 persons with personal expenditure information (form 3) were available, of which 3 252 completed the interview. The remaining 1 384 belong to the non-response group due to being absent during the week of the interview, declaring not to have any expenditure, refusing to provide information, or due to other reasons. The personal expenditure of said group was imputed using as donors the 3 313 persons who completed the form.

Lastly, 751 households with food expenditure lower than 20% of the sample median in this expenditure group were selected, in other words, households with food expenditure of less than 6 326,2 colones. All food expenditure records of these households were removed, as they were considered incomplete, and new data was imputed from the complete household information (according to "the closest neighbor").

#### 5.3.4.1 Income imputation

This was conducted first, as it is the main variable for estimating the total expenditure or any consumption.

The first stage of income imputation was the building of a regression model to estimate the net current income of 161 persons from 179 households whose information was incomplete due to the lack of income information. To this end, a data matrix was created with the selected covariables, estimating regression coefficients from the information of persons with income data.

The regression model equation was the following:

$$\widehat{\text{Income}}_k = \mathbf{x}_k \boldsymbol{\beta}_i$$

Where  $\mathbf{x}_k$  is a matrix formed by the following covariables:

- Sampling stratum of the housing unit
- Person's sex, age, insurance, activity condition and education
- Ceiling and domestic staff in the housing unit
- Household overcrowding index

$\hat{\beta}_i$  is the regression coefficient vector, which includes the intercept, that is to say, the income average when the other variables are zero or null, in addition to a coefficient for each numerical variable, and p-1 coefficients for each factor variable, where p is the number of categories or levels of the variable.

Subsequently, with the estimated gross current income from the model, the distances between the recipient of the information and all potential donors was calculated as follows:

$$D_{ki} = |\widehat{\text{Income}}_k - \text{ICB}_i|$$

Where  $D_{ki}$  is the vector with the distances between the recipients k and the donors i, calculated using the absolute value of the difference between the gross current income estimated for recipients and that observed in donors. These distances were calculated only between the recipient and the potential donors from the same stratum, in addition to having the same activity condition and status in employment. This restriction allowed finding donors with profiles similar to that of recipients; therefore, the probability of both the income level and structure corresponding to the information available from the recipient was higher.

Later, the donor k that was closer to the recipient i was selected; and all of the donor's income components were imputed to the recipient's income. Lastly, results were validated manually, verifying that the imputed income was consistent with the other information of the recipient. Otherwise the corresponding changes were made.

After imputation, the net current income increased by an average of 1,14 % for households and 1,01 % for persons (in sample values).

#### 5.3.4.2 Expenditure imputation by household

The income imputation for 161 persons made available the necessary data for the expenditure imputation of 179 households who refused to complete the forms during the interview. The same method was used, creating a linear regression model from the data of the 6 867 households with complete information to estimate the total consumption expenditure of the new households.

The model equation was the following:

$$\widehat{\text{consumption\_expenditure}}_k = \mathbf{x}_k \hat{\beta}_i$$

Where  $\mathbf{x}_k$  is the matrix formed by the following covariables:

- Household net current income
- Sampling stratum of the housing unit
- Number of men and number of women in the household
- Number of persons aged 15 or younger in the household
- Number of persons in employment in the household
- Age, activity condition and level of schooling of the head of household

Similarly to income imputation, distances between each recipient household and potential donors were calculated as follows:

$$D_{ki} = | \widehat{\text{Consumption\_expenditure}_k} - \text{Consumption\_expenditure}_i |$$

“The closest neighbor” in the same stratum and the same housing unit ownership condition (rented or not rented) is selected. This results in having data for imputation that are more consistent with the real situation of each recipient, as the expenditure structure of households renting a housing unit usually differs significantly from that of households not renting.

Once the data from the donor were taken to be imputed as new information of the recipient, they were reviewed manually for consistency with the other information previously available on the household. The impact of such imputation was a 1,39 % increase in the consumption expenditure average of households (sample values), but maintaining the same relative expenditure structure.

#### 5.3.4.3 Imputation of personal daily expenditure

As mentioned above, a total of 1 384 cases were recorded for the imputation of personal expenditure (form 3), as these were cases of non-response in this form for any of the following reasons: a) not at home during the week (50); b) refused to provide information (137); c) others (13); d) had no expenditure (1 139). For the last case, the probability of a person not incurring any expenditure during a seven-day period was considered to be too low.

The model used for this situation was similar to those explained above:

$$\text{Personal\_expenditures}_k = \mathbf{x}_k \hat{\boldsymbol{\beta}}_i$$

Covariables are the same as those used in the income per person model.

The response variable is the total expenditure in form 3. Subsequently, “the closest neighbors” were searched according to the following distance equation:

$$D_{ki} = | \widehat{\text{Personal\_expenditures}}_k - \text{Personal\_expenditures}_i |$$

For this imputation, the search for “the closest neighbor” was limited only to stratum. Therefore, the expenditure imputed for each recipient came from the most similar donor in the same stratum.

The average consumption expenditure by household increased by 4,84 % (sample values).

#### 5.3.4.4 Imputation of the expenditure on food and non-alcoholic beverages

When analyzing food expenditure, after the above imputations, the need to improve the quality of said data was determined, as some households were found to have an expenditure level significantly lower than expected. To this end, a lower limit for said expenditure was set. Any records below this limit were considered incomplete and had to be replaced by complete data from other households.

Using as limit 20% of the median, 751 households with incomplete data were found, and their food expenditure was imputed using the same method as in the other cases. First, a regression model was created to estimate the total food expenditure using data from the 6 295 households with complete information. The regression equation was the following:

$$\widehat{\text{Food\_expenditure}}_k = \mathbf{x}_k \hat{\boldsymbol{\beta}}_i$$

The covariables used were:

- Household net current income
- Sampling stratum of the housing unit
- Number of household members
- Number of persons aged 15 or younger and 65 or older in the household
- Number of persons in employment in the household
- Age, sex and activity condition of the head of household

In order to find “the closest neighbor” for each household with incomplete information, the search was restricted to stratum and gross current income decile of the recipient.

As a result of this, the average monthly food expenditure increased by 9,3 %.

## 5.4 Treatment of special expenditure

### 5.4.1 Expenditure on gambling

ENIGH 2018, as usual in these surveys, inquired about expenditure on the purchase of lottery, *chances*, *tiempos*, *lotto*, bingo, and other tickets, during the reference week.

The special treatment is due to the fact that buying lottery tickets and gambling entails the payment for the service to the organizing unit (if an NPI, it will donate part of the payment to charity) and the transfer paid to winners. The former is considered consumption expenditure, but payment to winners are transfers to other households (United Nations Organization, 2008). For the purposes of ENIGH 2018, this information was disaggregated in two parts:

- **Percentage for management and donation to other NPISHs or profits for casinos, persons and other private entities:** every organizing unit uses part of the payments received for administrative expenses. In the case of games managed by a NPISH, a percentage is donated to charity (whether its own, of another NPISH or of other households or persons); persons and enterprises organizing games make profit from the activity.
- **Percentage for transfers to other households:** it is the total prizes given to winners by those organizing the game.

These games are classified as entertainment expenditure. The cost of the service, which is the gross value of the production of the economic activity and the actual consumption of households, can be estimated indirectly as the difference between payments made and prizes won by households (United Nations Organization).

Because of the diversity of authorized and non-authorized games, and because information about the difference between what is received by institutions, enterprises or persons organizing the games and what is paid to households is not always reported, those amounts were estimated based on the rate of prizes given by the San Jose Social Protection Board (Junta de Protección Social de San José, JPSS) from January to December 2018.

Rates were calculated based on revenue from actual sales of the JPSS) for the different games.

TABLE 5.2

**Costa Rica. Distribution rates of prizes given to households and payment for services, January to December 2019**

Game	Percentage	
	Households	Service
National Lottery	71,6	28,4
Popular Lottery (chances)	70,6	29,4
Tiempos Lottery	81,4	18,6
Instant Lottery	67,8	32,2
Nuevos Tiempos Lottery	68,1	31,9
Lotto Lottery	52,2	47,8
Other gambling games	52,0	48,0

Source: INEC-Costa Rica. Data from JPSS.

The percentage received by households includes prizes actually paid as well as prizes from “funds and bags”, which is a fund where the JPSSJ stores unclaimed prizes.

In the composition used for the *lottery, chances, tiempos, lotto* and *raspas*, according to their respective line in table 5.2, and for other gambling games, 52,0% was considered as transfer to other households and 48,0% as consumption expenditure (maximum value for non-regulated games). As most are private or foreign raffles, that is what is paid for the service and what these entities donate or keep as profits, according to the nature of their operation.

### 5.4.2 Expenditure on insurance

According to the System of National Accounts Handbook (United Nations Organization, 2008), insurance policies are willfully purchased by households for their own benefit or that of their members, independently from their employers or the government, and apart from any social security system. These comprise net premiums and claims related to direct insurance, as described below:

- **Net premiums related to insurance and service charges:** they comprise the effective premiums payable by policy holders in order to obtain insurance coverage during the accounting period, as well as service charges payable to the insurance provider.
- **Claims related to insurance:** they are the amounts payable for damages resulting from eventualities covered by insurance policies during the current accounting period. They are treated as current transfers to the claimant, even if they are large sums paid due to the accidental destruction of a fixed asset or serious injury caused to a person. Cases in which the claim is likely to be approved at a later time are excluded and thus recorded at the time when the insurance provider recognizes the liability (it may not match the time when the claim amount is agreed or paid). In the case of insurance against damage to third parties, claims are recorded as amounts payable directly by the insurance companies to the damaged parties. In exceptional circumstances, part of claims are not recorded as current transfers but as capital transfers (System of National Accounts, 2008).

In regards to property insurance (house, car), health insurance (accident and illness) and life insurance, household consumption expenditure is composed of the cost of the service, which may be estimated as the difference between gross premiums and lump sum claims. In the case of non-life insurance, the remaining expenditure is considered a transfer between households and is thus classified within expenditure non-imputable to consumption. Life insurance is considered capital expenditure (United Nations Organization).

As the National Insurance Institute (INS) provides approximately 76% of coverages (General Insurance Superintendence of Costa Rica, as of November 2018), the information was disaggregated according to the information collected from the INS financial reports (2018).

Data in table 5.3 was used to make calculations and disaggregate premiums paid by households into consumption (payment for service) and capital transfers or capital expenditure (claim payments).

TABLE 5.3

**Costa Rica. Income from premiums, benefits and payment for non-life insurance provided by INS (March 2018 to March 2019)**

Item	Amount (millions of colones)
Income from premiums	303 367,17
Claims	93 614,65
Expenditure on services	74 561,47
Percentage of claim payment	69%
Percentage of service payment	31%

Note: life insurance is not included, as a complete cycle would be required to obtain the information; therefore, the assumption is made that the behavior is similar to that of non-life insurance in terms of income distribution.

Source: INEC-Costa Rica. Data from INS Financial Statement 2018-2019.

### 5.4.3 Rental value estimation

Accommodation services produced by households, herein called “rental value”, are one of the services produced and consumed by them (final own consumption). According to the SNA Manual, persons who own the housing units they occupy are considered owners of unincorporated enterprises producing accommodation services for own consumption. This service is valued as equal to the rental fees they would have to pay in the market for a housing unit of the same size, quality and type. Imputed housing services values are recorded as final consumption expenditure of owners (System of National Accounts, 2008).

This rental value is generally inquired of data providers, yet they tend to overestimate it by disregarding the age and other characteristics of the housing unit and by adding a subjective value that does not match the facts. Alternatively, records with categories for types of housing units could be requested from companies managing rentals; however, gathering information on all geographic areas is complicated, in addition to the underdevelopment of this activity in the country.

This does not happen with rental expenditure, which is considered consumption expenditure. The difference lies in that, when the housing unit is occupied by its owner, the value related to consumption due to use arises, without entailing monetary expenditure by the occupier.

As a result, ENIGH uses expenditure information of households who pay rent and with housing units with similar characteristics are contrasted, and if the rental value of the housing unit shows bias, an estimated value is assigned by a regression of an existing market such as rental of housing units with specific characteristics (Grosskoff, 1998).

An estimation of the rental value is made for all housing units, as those who do not participate in the rental market have difficulties with estimations because they are unaware of the values negotiated and the parameters that take place.

In ENIGH 2018, of the total housing units with complete interviews, 67,1 % occupy their own housing unit, fully paid or paid in installments, and 18,1 % are rental housing units, as shown in table 5.4.

TABLE 5.4

**Costa Rica. Distribution of households by type of housing unit ownership**

Type of ownership	Frequency	Percentage
<b>Total</b>	<b>7046</b>	<b>100</b>
Own, fully paid	3 970	56,3
Own, paid in installments	759	10,8
Rented	1 277	18,1
Own, received as gift or donation	126	1,8
Assigned or borrowed for employment reasons	218	3,1
Assigned by another household	535	7,6
In a squatter settlement	140	2,0
Other	21	0,3

Source: INEC-Costa Rica. National Survey of Household Income and Expenditure, 2018.

The rental value of 5,390 households (living in their own housing units, assigned by gift or donation, or by another household) had to be imputed. The rental value estimation was provided by households themselves. On the other hand, the number of households reporting housing unit rental expenditure was 1 305, excluding the following cases from the imputation model:

- Housing units received as payments in kind: 205 cases
- Rentals paid by other households or by NPISHs: 33 cases
- Households sharing the housing unit with other households: 22 cases
- Households reporting rental expenditure in the last month, but the type of ownership was different at the time of the interview: 3 cases

Taking as reference the methodology used to estimate the rental value of households in ENIGH 2013, variables were defined for housing unit characteristics, household income, holding of goods and services, and head of household characteristics, which may be related to the rental value.

The variable to be estimated in this first stage is the natural logarithm of rental value, considering only the information from the resulting 1,043 households after applying the above-mentioned filters. A multiple regression model was used comprising initially 42 independent variables. However, only regression coefficients estimators different from zero were obtained (with a 0.05 significance) for 15 variables plus the intercept, as shown in table 5.5, obtaining p values lower than 0.92, while the reduced model was composed of 24 variables, obtaining 16 coefficients different from zero plus the intercept.

TABLE 5.5

**Costa Rica. Statistical outputs of the models built during the first stage**

Item	Complete model	Reduced model
Number of variables	42	24
Coefficient different from zero	16	17
Associated probability	< 0,92	<0,16
Adjusted R2	0,6595	0,6626
Residual standard error	0,4264	0,4242

Source: INEC-Costa Rica. Data processing, ENIGH, 2018.

The second stage verified if the variables selected in stage I were also relevant for not-renting households, to which the rental value was to be imputed. To this end, a regression model with the rental value estimated by households was created, as dependent variable and with the 16 variables resulting from the coefficients different from zero in the reduced model of stage I<sup>45/</sup>. In this case, the result was 16 coefficients different from zero including the intercept; in other words, only two variables with coefficients different from zero in the first stage were excluded in this stage.

TABLE 5.6

**Costa Rica. Statistical outputs of the second stage model**

Item	Stage II model
Number of variables	17
Coefficient different from zero	16
Associated probability	<0,56
Adjusted R2	0,735
Residual standard error	0,3787

Source: INEC-Costa Rica. Data processing, ENIGH, 2018.

In a third stage, a final regression model was created from the 15 variables with coefficients significantly different from zero in stage II, taking as dependent variable the natural logarithm of the rental value of 1,043 households. First, this model had an adjusted R-squared of 0.6549 and a residual error of 0.4293, which is an acceptable result. However, the model influence values were analyzed, which resulted in the exclusion of the two most influential values, as they were four times higher than the hatvalues mean (extreme values).

45/ For this model, 80 households residing in housing units with other households were excluded, as well as 3 households with no rental value information and 1,446 households reporting a rental value higher than 30% of their total gross current income.

The results of the final model are shown in table 5.7.

TABLE 5.7

Costa Rica. Statistical outputs of the final model for the imputation of the rental value

Item	Final model
Number of variables	15
Coefficient different from zero	16
Associated probability	<0,047
Adjusted R2	0,6838
Residual standard error	0,3972

Source: INEC-Costa Rica. Data processing, ENIGH, 2018.

From the result obtained from this model, predictions were made of the rental value of the 5 390 not-renting households. The equation used for this estimation was the following:

$$\begin{aligned}
 \text{LNVL} = & 6.6145 + 0.1685 * \text{zonarec}(1) + 0.3973 * \text{regionreco}(1) + 0.1261 \\
 & * \text{materialparedesreco}(1) + 0.1575 * \text{materialpisoreco}(1) + 0.3154 \\
 & * \text{eliminacbasurareco}(1) + 0.0656 * \text{LNEscolaridad} + 0.2347 * \text{LNIC} + 0.1410 \\
 & * \text{LNm2} + 0.6425 * \text{provenienciaaguareco}(1) - 0.0691 * \text{proveniencialuzreco}(1) \\
 & + 0.1213 * \text{HO05CIELORASO}(1) + 0.0326 * \text{HO12_APOSENTOS} + 0.1323 \\
 & * \text{HO38_AGUA_CALIENTE}(1) + 0.0774 * \text{HO40_COMPUTAD_PORTATIL}(1) \\
 & + 0.5598 * \text{HO52_TV_CABLE1}
 \end{aligned}$$

Where:

- **LNVL:** natural logarithm of the rental value amount
- **Zonarec:** recoded area, 1 Urban; 0 Rural
- **Regionreco:** recoded planning region, 1 Central region; 0 Rest of the country
- **Materialparedesreco:** section A, question 4 (predominant wall material), block or brick 1; all the others 0
- **Materialpisoreco:** section A, question 7 (predominant floor material), recoded, mosaic, ceramic or terrazzo 1; all the others 0

- **Eliminacbasurareco:** section A, question 20 (main garbage collection method) recoded, by garbage truck 1; all the others 0
- **LNescolaridad:** section D, form 1, question 8 (head of household level of schooling) in natural logarithm
- **LNIC:** natural logarithm of household current income
- **LNm2:** section A, form 1, question 13 (m<sup>2</sup> of gross floor area) recoded with natural logarithm of the mid-points of each range (20, 35, 50, 80, 125, 175, and 300)
- **Provenienciaaguareco:** section A, question 15 (source of water for consumption), recoded, municipal aqueduct or from AyA 1; all the others 0
- **Proveniencialuzrecod:** section A, question 19 (source of electric light), recoded, ICE, CNFL, or ESPH or JASEC 1; all the others 0
- **H005\_CIELORASO:** section A, question 6 (ceiling in the housing unit), 1 Yes; 0 No
- **H012\_APOSENTOS:** section A, question 11 (number of rooms in the housing unit)
- **H038\_AGUA\_CALIENTE:** section B, form 1, question 4.d (does this household have hot water for the entire house?), Yes 1; No 0
- **H040\_COMPUTAD\_PORTATIL:** section B, question 4, subparagraph f (does this household have a laptop?), 1 Yes; 0 No
- **H052\_TV\_CABLE:** section B, question 4, subparagraph l (does this household have cable, satellite or IP television?), 1 Yes; 0 No

In the case of housing units with more than one household, the average of the estimates for each household was assigned, and the value was disaggregated among households according to the number of bedrooms of exclusive use, and for households with none, according to the proportional use of rooms. In relation to housing units with unknown square meters, the middle category value was assigned.

The estimation made from the regression model resulted in rental value amounts lower than those estimated for households, which supports the assumption that households may tend to overestimate the value of their housing units. Table 5.8 shows a significant difference, in particular in households with higher rental values, as the median and the third quartile are higher in household estimations, while the first quartile is higher in the model's estimation, although this difference is small.

In addition, the maximum rental value estimated by households is an atypical value, far from the rental values of even the most costly housing units. On the other hand, the regression model offers a maximum estimation of 815,056 colones that is closer to reality.

In general, the model estimation is, on average, 20 301 colones lower than the estimations made by data providers in households, which accounts for 18,7 % decrease in the estimation.

TABLE 5.8

**Costa Rica. Statistical outputs of the rental value estimated by households versus the value imputed by the model**

Statistical output	Value estimated by households	Regression model
Mean	108 427	88 126
Median	80 000	67 616
Quartile 1	25 000	26 588
Quartile 3	150 000	124 708
Minimum	0	0
Maximum	10 000 000	815 056

Source: INEC-Costa Rica. Data processing, ENIGH, 2018.

### 5.4.3.1 Adjusted rental value:

Because certain housing unit maintenance expenses are incurred only by the owner, they are deducted from the rental value imputed by the model. For these purposes, reported expenditure is discounted from the monthly imputed rental value, as it is considered that the person incurs said expenditure to maintain the value of the housing unit.

## 5.5 Variable creation

From the information collected and processed in the four forms of the survey, new variables were created consolidating household information, and variables by person and product (expenditure) information were also created, as they are usually required by end users for multiple purposes or applications. This new information is made available to the public in three databases that may be downloaded for free from the INEC website, under the section "Databases and Documentation>>Accelerated Data Program."

Each database includes a dictionary specifying how each variable was created. Variables related to income and expenditure required transformation to monthly values, as well as an aggregation to match the variables specified in the conceptual framework. Most variables characterizing persons and housing units do not require any transformation regarding direct consultation in interviews. The contents of each database are summarized in the following sections. Each database includes a set of variables identifying the case, at household and person level, as applicable, which allows for the concatenation of information, in addition to other relevant variables for the household characterization and inference, such as the expansion factor, quintile, and decile of gross per capita current income with no rental value at national level and by residence area.

### 5.5.1 Persons database

This dataset contains information on socio-demographic characteristics of household members, social transfers, activity condition, employment characteristics and personal income. It is composed of 61 variables and 22 691 observations.

Socio-demographic household member information is composed of 20 variables, among which are kinship relationship, sex, age, type of insurance and level of schooling.

Information on social transfers by the government and non-profit institutions includes 37 variables describing assistance to care institutions, food for households, equipment or materials for persons with disabilities, aid or cash benefits from the IMAS, social assistance from non-profit institutions, and health services.

Information on activity condition comprises 22 variables, concerning whether the person worked during the previous week; whether he/she participated in activities receiving payment in cash or in kind; whether he/she was absent from work; the reasons for not working during the previous week; the persons' availability for work; and whether he/she attempted to find a job.

Information on employment characteristics comprises 47 variables, among which are number of jobs; hours worked per week; institutional sector; branch of economic activity; status in employment; work place: size of enterprise; labor continuity; payment method; payment period; types of deductions from salary.

Information on household income comprises 114 variables, among which are employee income; employer/own-account income; income from self-employment; farm work income; income from secondary employment; income from rentals; transfers received in cash; other occasional income. In addition, current income with or without rental value by person is included, whether gross or net, as well as total income with or without rental value, whether gross or net.

### *5.5.2 Household database*

The household database of ENIGH 2018 comprises the information on characteristics of households in the selected housing units. This information comprises socio-demographic and socioeconomic characteristics, income by source and type of household expenditure. It is composed of 341 variables and 7,046 observations. Variables are arranged as follows:

- **Characteristics of the housing unit where the household lives:** it contains 31 variables identifying the type of housing unit, ownership, condition, and access to services.
- **Characteristics of the household in the housing unit:** it contains 51 variables concerning household characteristics, such as ownership of devices and vehicles, public and domestic services in the household.
- **Socio-demographic characteristics:** it contains 9 variables including information on number of household members, and sex, age and level of schooling of the head of household.
- **Activity condition:** it contains 5 variables quantifying household members in employment, not in employment, not in the labor force, recipient household members and employee recipients.
- **Social transfers:** it comprises variables concerning social transfers from the government and non-profit institutions. It contains 36 variables describing student benefits, assistance from the IMAS, care giving, assistance for senior citizens, health services, and support from non-profit institutions.
- **Income:** it comprises 77 variables composing current income, capital income, total income, and disposable income. All variables that allow for the calculation of gross or net income and income by household or per capita income (with or without rental value) are included.
- **Expenditure:** it contains 96 variables concerning current expenditure, capital transactions, and total household expenditure. Both for current expenditure and for total expenditure, per capita expenditure variables (with or without rental value) are included.
- **Others:** it contains 17 variables on household indebtedness, household typology, and subjective poverty.

### 5.5.3 Expenditure database

This database comprises detailed information on household expenditure by type of item or service acquired by the household; the item's equivalence in milligrams and grams calculated monthly (for food), the monthly expenditure amount in colones; and grouping by type of expenditure: consumption, non-consumption, intermediate consumption, capital, negative consumption, and transfers in kind. This dataset includes 20 variables and 363 962 observations.

## 5.6 IT systems

IT systems used for the validation of microdata were developed especially by the Unit of Technologies and Information Systems (UTSI) of INEC. All elements related to the collection, editing, error and inconsistency generation, and balance sheet generation were created within the System of Survey and Census Processing (CSPro), similar to the recording and field validation systems, but adapted to desktop computers.

Moreover, a workload management system was made available to assign the corresponding PSU to the validating person's desktop and close it once the validation process was completed. A system was also developed to send and receive invoices, for their management and integration to the processing database.

Imputations due to non-response and the model for estimating the rental value were developed in the statistical program R.

## 6. Main changes in relation to ENIGH 2013

ENIGH 2018 introduced some methodological changes, process innovation and adjustments for the measurement of concepts related to household income and expenditure, considering both international recommendations and information requirements from different users.

Differences do not entail a significant change nor prevent comparing results in general terms. The sample design, collection design and forms (almost all) are similar to the previous version. However, some specific concepts need calculation adjustment to achieve data equivalence. These modified aspects to be considered are:

- a. Use of mobile devices (tablets) for recording most sections of form 1 (except income). They were also used partially in field operations in the recording of form 4; however, this was later disregarded after subsample 18, the data provider's responses were affected due to the longer time required using the tablet.
- b. Modification in the measurement of gross and net profits of self-employed persons. It was modified as follows: 1) elimination of disaggregated expenditure in the development of activities by self-employed non-farm workers. Instead, they were asked directly about the sales, the expenditure related to these sales, and the profits obtained on average in the last twelve months; 2) self-employment/voluntary insurance and income tax payments were included in the gross income of self-employed farm workers. Before, they were not asked about these payments linked to their activities. Thus, net profits from self-employment consider these two components (insurance and tax) in the case of self-employed farm and non-farm workers.
- c. Introduction of the concept of gross and net income from disability, old-age and death pensions. Questions inquired about total pension income (gross income) and whether deductions were made due to income tax or other deductions by law. Once these deductions are made, the net pension received is obtained.
- d. Inclusion of the income from the thirteenth payment of the non-contributory state pension, instead of considering only the pension due to disability, old age or death.
- e. Introduction of the separation of credit card payments into payment in full (monthly payment leaving no debt balance) and partial payment (leaving an outstanding balance). Credit card partial payments are part of the financial (capital) expenditure variable; while payments in full are not included under this item, as they operate as immediate payment not accruing interest. The previous survey version made no distinction as to payment method, and all credit card monthly payments were considered financial expenditure.
- f. Inclusion of a module with questions about debt balance by type.
- g. Extension of the reference periods for expenditure of other periods (recalled expenditure) in order to consider the week of the interview within the last month or the last three, six or twelve months. Thus, everything purchased during the week and recorded in form 2 or 3 was integrated into consumption expenditure, with no distinction by type of expenditure.
- h. Modification of the final expenditure classification group for certain goods and services, such as:
  - "Double play (internet and cable)," "quadruple play" and "triple play" fees were not included in the recreation and culture group but in the communications group.
  - "School cafeteria payment" was changed from meals outside the household to various goods and services.
  - Payments for primary, secondary and university education materials were separated from the education group and incorporated into the recreation and culture group.
  - The payment of graduation rights, school transcripts, and school board fees was changed from the education group to various goods and services.

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## Annexes

### ANNEX 1

#### Costa Rica. Reference dates of expenditure from other periods

Ten-day period	Collection date		Expenditure from the last month		Expenditure from the last 3 months		Expenditure from the last 6 months		Expenditure from the last 12 months	
	Start date	End date	Start date	Final date	Start date	Final date	Start date	Final date	Start date	Final date
0	29/01/2018	07/02/2018	01/01/2018	28/01/2018	nov-17	ene-18	ago-17	ene-18	feb-17	ene-18
1	12/02/2018	21/02/2018	11/01/2018	11/02/2018	nov-17	feb-18	ago-17	feb-18	feb-17	feb-18
2	22/02/2018	03/03/2018	21/01/2018	21/02/2018	dic-17	feb-18	sep-17	feb-18	mar-17	feb-18
3	05/03/2018	14/03/2018	04/02/2018	04/03/2018	dic-17	mar-18	sep-17	mar-18	mar-17	mar-18
4	15/03/2018	24/03/2018	14/02/2018	14/03/2018	dic-17	mar-18	sep-17	mar-18	mar-17	mar-18
5	26/03/2018	04/04/2018	25/02/2018	25/03/2018	ene-18	mar-18	oct-17	mar-18	abr-17	mar-18
6	05/04/2018	14/04/2018	04/03/2018	04/04/2018	ene-18	abr-18	oct-17	abr-18	abr-17	abr-18
7	16/04/2018	25/04/2018	15/03/2018	15/04/2018	ene-18	abr-18	oct-17	abr-18	abr-17	abr-18
8	26/04/2018	05/05/2018	25/03/2018	25/04/2018	feb-18	abr-18	nov-17	abr-18	may-17	abr-18
9	07/05/2018	16/05/2018	06/04/2018	06/05/2018	feb-18	may-18	nov-17	may-18	may-17	may-18
10	17/05/2018	26/05/2018	16/04/2018	16/05/2018	mar-18	may-18	dic-17	may-18	jun-17	may-18
11	28/05/2018	06/06/2018	27/04/2018	27/05/2018	mar-18	may-18	dic-17	may-18	jun-17	may-18
12	07/06/2018	16/06/2018	06/05/2018	06/06/2018	mar-18	jun-18	dic-17	jun-18	jun-17	jun-18
13	18/06/2018	27/06/2018	17/05/2018	17/06/2018	abr-18	jun-18	ene-18	jun-18	jul-17	jun-18
14	28/06/2018	07/07/2018	27/05/2018	27/06/2018	abr-18	jun-18	ene-18	jun-18	jul-17	jun-18
15	09/07/2018	18/07/2018	08/06/2018	08/07/2018	abr-18	jul-18	ene-18	jul-18	jul-17	jul-18
16	19/07/2018	28/07/2018	18/06/2018	18/07/2018	may-18	jul-18	ene-18	jul-18	ago-17	jul-18
17	30/07/2018	08/08/2018	29/06/2018	29/07/2018	may-18	jul-18	ene-18	jul-18	ago-17	jul-18
18	09/08/2018	18/08/2018	08/07/2018	08/08/2018	may-18	ago-18	ene-18	ago-18	ago-17	ago-18
19	20/08/2018	29/08/2018	19/07/2018	19/08/2018	jun-18	ago-18	mar-18	ago-18	sep-17	ago-18
20	30/08/2018	08/09/2018	29/07/2018	29/08/2018	jun-18	ago-18	mar-18	ago-18	sep-17	ago-18
21	10/09/2018	19/09/2018	09/08/2018	09/09/2018	jun-18	sep-18	mar-18	sep-18	sep-17	sep-18
22	20/09/2018	29/09/2018	19/08/2018	19/09/2018	jul-18	sep-18	abr-18	sep-18	oct-17	sep-18
23	01/10/2018	10/10/2018	30/08/2018	30/09/2018	jul-18	sep-18	abr-18	sep-18	oct-17	sep-18
24	11/10/2018	20/10/2018	10/09/2018	10/10/2018	jul-18	oct-18	abr-18	oct-18	oct-17	oct-18
25	22/10/2018	31/10/2018	21/09/2018	21/10/2018	ago-18	oct-18	may-18	oct-18	nov-17	oct-18
26	01/11/2018	10/11/2018	01/10/2018	31/10/2018	ago-18	oct-18	may-18	oct-18	nov-17	oct-18
27	12/11/2018	21/11/2018	11/10/2018	11/11/2018	ago-18	nov-18	may-18	nov-18	nov-17	nov-18
28	22/11/2018	01/12/2018	21/10/2018	21/11/2018	sep-18	nov-18	jun-18	nov-18	dic-17	nov-18
29	03/12/2018	12/12/2018	02/11/2018	02/12/2018	sep-18	dic-18	jun-18	dic-18	dic-17	dic-18
30	13/12/2018	22/12/2018	12/11/2018	12/12/2018	sep-18	dic-18	jun-18	dic-18	dic-17	dic-18
31	03/01/2019	12/01/2019	02/12/2018	02/01/2019	oct-18	dic-18	jul-18	dic-18	ene-18	dic-18
32	14/01/2019	23/01/2019	13/12/2018	13/01/2019	oct-18	ene-19	jul-18	ene-19	ene-18	ene-19
33	24/01/2019	02/02/2019	23/12/2018	23/01/2019	nov-18	ene-19	ago-18	ene-19	feb-18	ene-19
34	04/02/2019	13/02/2019	03/01/2019	03/02/2019	nov-18	feb-19	ago-18	feb-19	feb-18	feb-19
35	14/02/2019	23/02/2019	13/01/2019	13/02/2019	nov-18	feb-19	ago-18	feb-19	feb-18	feb-19
36	25/02/2019	06/03/2019	24/01/2019	24/02/2019	dic-18	feb-19	sep-18	feb-19	mar-18	feb-19



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