Methodological Note

Thailand SES Documentation

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Methodological Note

Thailand SES Documentation Note

Thematic Note Series

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This note documents information regarding the survey and data used to measure poverty and inequality in Thailand. The purpose of the note is to preserve our in-house understanding of the Household Socio-Economic Survey (SES). The note begins by discussing the SES, which is the data source for official poverty measurement. The World Bank currently has a large inventory of SES microdata that can be used by staff for official purposes only. Next, the consumption and income variables are discussed, including their construction and components. In recent meetings, the Thailand National Statistics Office (NSO) has expressed interest in upgrading and modernizing the SES. The last section reviews a collection of technical issues along with suggestions for possible improvements, though the review was cursory and not comprehensive. These suggestions can be used to guide dialogue and collaborate with the NSO.

Poverty lines and poverty rates are calculated by the Office of the National Economic and Social Development Council (NESDC). This note focuses on the survey and data inputs for poverty measurement, which is in the domain of the Thailand National Statistics Office[1].

1. The Socio-Economic Survey

The Socio-Economic Survey (SES) of Thailand is an essential survey administered by the Thailand National Statistics Office (NSO). It is the official data source of national poverty and inequality estimates and is also used by the World Bank and international agencies for SDG monitoring.

The first SES was conducted in 1957 and was hence conducted about every five years. From 1987-2004, the SES was conducted every two years. Since 2006, the SES has been conducted annually. However, not all information is collected on an annual basis. Income is collected every two years. Typically, 40,000-50,000 households are surveyed throughout the calendar year. There are 77 strata, the survey is representative at the province level[2]. Between 2013 and 2014, the sample frame of the SES was updated from the 2000 to 2010 Census. This resulted in a shift in the urban and rural population share. This shift affected the descriptive statistics of some variables more than others. Statistics that were more likely to be affected are those that tend to vary across rural and urban populations such as agricultural employment. The next population Census is scheduled for 2020.

The NSO produces publications annually including analysis of patterns in consumption and income. The NSO also produces small-area poverty estimates using the PovMap software[3]. The Social Data-based and Indicator Development office in the NESDC[4] uses the SES to produce poverty assessments annually that describes poverty and inequality trends and policy recommendations. Together, these two organizations

[1] The NESDC currently does not have interest to review the poverty line methodology. The organization has been working on constructing a national Multidimensional Poverty Index.
[2] In 2011, Beung Kan became the 76th province in Thailand. Bangkok and Pattaya are considered Special Administrative Districts. Though in the SES dataset, Pattaya is merged with surrounding areas.
[3] These estimates were published in a tabular format with estimates for over 7,000 tambons. The World Bank team recently moved the information into a more digestible map. This map can be viewed in Note #1 of the Thematic Note Series.
[4] In late 2018, the Office of the National Economic and Social Development Board (NESDB) was renamed to the Office of the National Economic and Social Development Council (NESDC).

provide comprehensive and timely assessments of data trends and policies to improve well-being in Thailand[5].

In 2007, the Thailand Development Research Institute (TDRI) conducted a review of the SES and questionnaire; since then the instruments have remained largely unchanged. The survey is currently conducted using paper. In 2018, the LSMS team provided a review of the 2017 questionnaire. These comments are shown in Annex A. Additional suggestions to improve the questionnaire are discussed in Section 4.

Table 1 lists the data structure of SES following the 2017 questionnaire. The SES includes information on household members, dwelling characteristics, expenditures of food and non-food items, income, and remittances. Not all information is collected annually. The earnings modules 13-16 contain household income data that is collected every other year.

Table 1. SES Questionnaire and Data Structure

Record	Module Name
01	Summary of Household Information
02	Household member
03	Housing characteristics
04	Expenditure of Goods and Services
05	(continued)
06	(continued)
07	(continued)
08	(continued)
09	(continued)
10	(continued)
11	(continued)
12	Expenditure on Food, Beverages, and Tobacco
13	Earning from Wages and Salaries
14	Earning from Non-Farm Business
15	Earning from Farm Operation
16	Income from Other Sources
17	Asset and Liabilities of Household
18	Migration and Remittance
25	Expenditure on Goods and Services
30	Shopping Places Where Household Often Buy Consumption

Notes: Following the 2017 questionnaire.

[5] Organization charts for the NSO and NESDC are shown in Figure 14 and Figure 15.

World Bank access to SES

The World Bank currently purchases the public version of the SES data. Per MOU, micro data from the SES is currently only shared with the country team for official World Bank work. Aggregate indicators are published and released via PovcalNet, WDI, and other official World Bank platforms. Original SES micro data is available starting from 1986 (Table 2).

The SES has been archived and harmonized to ease access and analysis across multiple years. Most of the series starting from 1986 has been harmonized following the EAPPOV regional harmonization guidelines, which is managed by EAPTSD[6]. EAPPOV is a harmonized database of socio-economic statistics constructed from microdata of household surveys in the East Asia and the Pacific (EAP) region. EAPTSD's main objective is to provide information for single- and cross-country analysis of poverty, shared prosperity, and other socio-demographic developments in the EAP region, including the monitoring of the WB twin goals, through improved access to microdata, indicators, and knowledge products from the region. The EAPPOV harmonized sub-collection of microdata allows for better comparisons across countries and over time. For a description of variables available in each module, please refer to the *EAPPOV Harmonization User Manual*.

Currently, the EAPPOV database contains four modules. The four available modules include "B" (*basic* information such as household roster), "I" (*individual*-level information), "H" (*household*-level information), and "POV" (official *poverty* module). The "POV" module includes the welfare aggregates used by each country for international poverty measurement. In the case of Thailand, consumption modules have also been constructed for some years.

World Bank staff can access harmonized EAPPOV harmonized data using the `datalibweb` API command in Stata[7]. Once the command is installed, and the user is registered, EAPPOV data can be called directly using this command. For example, Stata code is shown below to call the 2017 poverty module:

```
datalibweb, country(tha) year(2017) type(eappov) mod(POV) clear
```

When using EAPPOV data for analysis, please cite as "Source: EAPPOV Database (EAPTSD/World Bank). As of dd/mm/yyyy." It is highly recommended to include the date when the database was consulted as statistics may change. The vintage of the harmonization is required to ensure replicability. In addition to the four EAPPOV modules, consumption and income have been harmonized for some years to conduct analysis for the Thailand Poverty & Equity program.

The availability of Thailand harmonized EAPPOV data is shown in Table 2. A couple years of data are absent when data was not collected during volatile years after the Asian Financial Crisis. Even though the frequency of the SES is high, some survey years are regarded to be low quality and not used by the WB teams in analysis. Patterns in basic variables were volatile in the early 2000s. The 2006 survey, though available, is not believed to be good quality and is not used beyond estimation of the national poverty rate.

[6] EAPTSD is the EAP Team for Statistical Development, a regional statistics team in the Poverty & Equity Global Practice.
[7] Website to download datalibweb: http://globalpractices.worldbank.org/teamsites/Poverty/GPDP/SitePages/datalibweb.aspx)

Table 2. Inventory of THA SES harmonized data following EAPPOV guidelines

SES Survey Year	Poverty Module (POV)	Basic Module (B)	Individual Module (I)	Household Module (H)
1986	X			
1987				
1988	X			
1999				
1990	X			
1991				
1992	X			
1993				
1994	X			
1995				
1996	X			
1997				
1998	X			
1999	X			
2000	X	X	X	X
2001				
2002	X	X	X	X
2003				
2004	X	X	X	X
2005				
2006	X	X	X	X
2007	X	X	X	X
2008	X	X	X	X
2009	X	X	X	X
2010	X	X	X	X
2011	X	X	X	X
2012	X	X	X	X
2013	X	X	X	X
2014	X	X	X	X
2015	X	X	X	X
2016	X	X	X	X
2017	X	X	X	X

Source: EAPTSD

2. Household consumption

National poverty rates, international poverty rates, and shared prosperity are based on household consumption from the SES. A consumption welfare aggregate typically includes four categories: food; non-food; the use value of durables; and housing. The following section offers a description of the components of the consumption aggregate from the SES, but is not a comprehensive critique.

Thailand's household consumption aggregate includes 14 broad food & alcohol categories and 11 non-food categories. Other developing EAP countries use slightly different classifications on categories with similar item aggregations. For example, in 2015 Myanmar Poverty and Living Conditions Survey (MPLCS), the consumption section includes 12 broad food categories and 11 non-food categories[8]. In the 2014 Timor-Leste Survey of Living Standards (TLSLS), food items are organized in 14 broad food categories[9]. In the 2017 Thailand SES questionnaire, information on 17 food items and 127 non-food items are collected. Table 3 shows an intra-regional comparison of consumption questionnaire design for developing EAP countries.

Table 3. Summary of Consumption Questionnaire Design

Country	Food items	Diary vs. Recall	Reference period (food)	Food quantities available	Non-food items	Reference period (non-food)	Year
Cambodia	22	Recall and 14 days diary	7 days	Yes (in diary)	67	1/6/12 months	2014
Fiji	Open	Diary	14 days	Yes	Open	1/12 months	2013
Indonesia	222	Recall	7 days	Yes	103	1/12 months	2017
Lao PDR	142	Diary	30 days	Yes	192	1 month	2012
Malaysia*)	Open	Diary	30 days	No	705	11 months	2016
Mongolia	131	Diary for urban; Recall for rural	10-30 days; 7 days	Yes	326	1/12 months	2016
Myanmar	183	Recall	7 days	Yes	69	1/6 /12 months	2015
Papua New Guinea	Open	Diary	14 days	Yes	107	1/12 months	2009/10
Philippines*)	232	Recall	7 days	Yes	311	1/6 months	2015
Thailand	17	Recall	7 days	Yes	127	1 month	2017
Timor-Leste	135	Recall	7 days	Yes	59	1/3/12 months	2014
Vietnam				Yes	40	1/12 months	2016

Source: East Asia & Pacific Team for Statistical Development, International Measurement Comparison Paper
Notes: (*) Malaysia and Philippines use income welfare in measuring poverty

Table 4 lists the components of Thailand's household consumption aggregate that is used for poverty measurement. There are 11 non-food expenditure categories in the SES, covering 127 non-food items. For each of these variables, the survey also has information on if the item was paid for in cash or received in-kind. There are seventeen food variables in the SES, which map to 14 food and beverage categories. The total summation of food and non-food components yield the household consumption aggregate used for poverty and inequality measurement.

[8] World Bank and Myanmar Ministry of Planning and Finance (MOPF) Technical Report, December 2017
[9] Poverty in Timor-Leste 2014

Table 4. SES variable mapping to food and non-food consumption categories

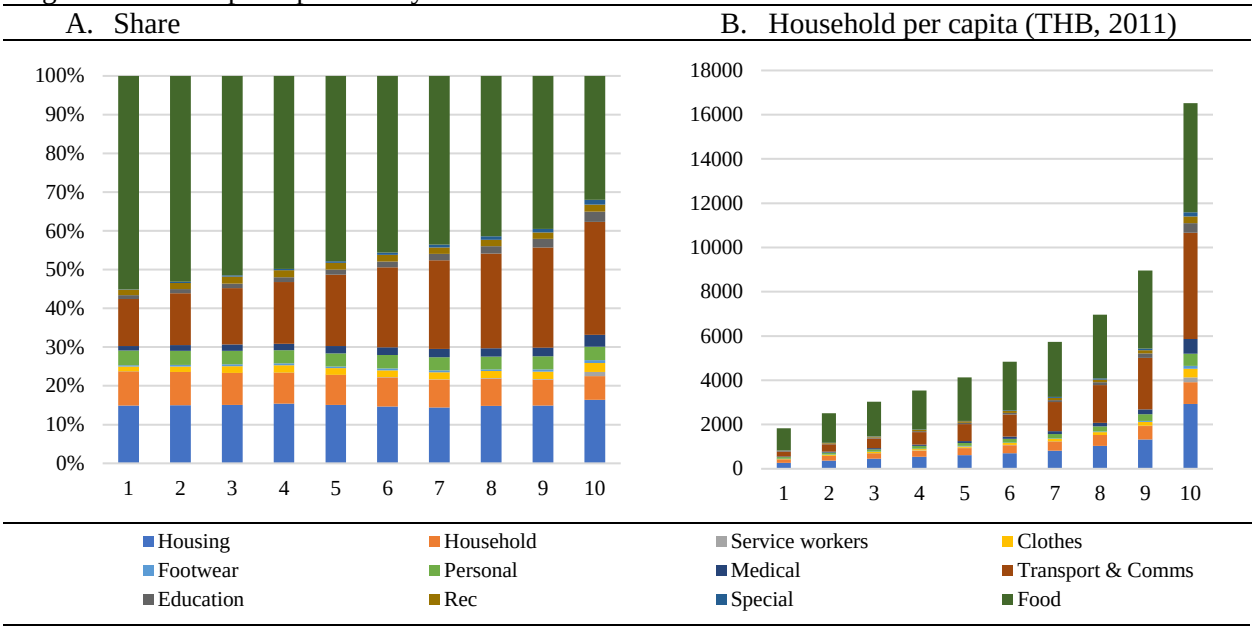
Consumption categories	SES variables
Non-food categories	
1. Housing (shelter)	EG01-EG05
2. Household operation, furniture, and equipment	EG06-EG27
3. Service workers in household	EG28-EG29
4. Cloth, clothes, and clothing material	EG30-EG35
5. Footwears	EG36-EG38
6. Personal care	EG39-EG46
7. Medical and health care	EG47-EG60
8. Transportation and communication	EG61-EG87
9. Education expense	EG88-EG92
10. Recreation/religious activity expense	EG93-EG110
11. Special ceremony expenses	EG111
Food categories	
1. Grains and cereal products	EF01
2. Meat and poultry	EF02
3. Fishes and seafood	EF03
4. Milk, cheese, and eggs	EF04
5. Oils and fat	EF05
6. Fruits and nuts	EF06
7. Vegetables	EF07
8. Sugar and sweets	EF08
9. Spices and condiments	EF09
10. Non-alcoholic beverages (at home)	EF10-EF11
11. Prepared food (taken home)	EF12
12. Food and non-alcoholic beverages (eaten away from home)	EF13
13. Alcoholic beverages	EF14-EF15
14. Tobacco products	EF16-EF17
All Food	

Figure 1 illustrates the share and level of monthly household consumption per capita in THB2011[10]. The descriptive statistics are based on a constructed aggregate, which is the summation of all components listed in Table 4. Food is by far the largest consumption category, comprising about half of household consumption expenditures. Transportation & communications and housing follow as the second and third largest consumption categories. In 2017, the top decile had an average consumption per capita that was about 8 times higher than the lowest decile of the population (Figure 1B).

In the wealthiest households, the share of expenditure in transportation and communications is significantly larger than among poor households. This is also the case in some other developing EAP countries. Based on Myanmar 2015 household survey analysis (WB and MOPF Technical Report, 2017), the share of non-food expenditures devoted to transportation rises substantially across the expenditure distribution, from 4 percent in the lowest decile to 18 percent in the highest. The increase in spending on transportation in the higher deciles can be seen in both rural and urban areas.

[10] Units are converted to THB2011, to be in the same reference year as international poverty measurement which are in 2011PPP units.

Figure 1. Consumption patterns by decile in 2017



Source: WB calculations using THA SES 2017
Notes: decile 1= poorest, and decile 10 = richest

For more descriptive trends on household consumption, additional figures are in Section 6.

Food

In EAP, the collection method of food consumption varies from country to country (Table 5). Two methods are commonly applied: (i) diary – where the household records all the consumption data over a certain period in a note book, or (ii) recall – where the households list what they have consumed for the past few days from memory. Cambodia, Indonesia, Mongolia, Myanmar, Philippines and Timor-Leste all use the same method (weekly recall) to collect data. All respondents are asked to recall their food consumption from the last week. There are also some exceptions. In Papua New Guinea 2009/10 survey, a diary method with a reference period of 14 days is adopted. In Lao PDR 2012 and Malaysia 2016 survey, consumption information for the past month is asked to be recorded through a diary.

Thailand SES uses a recall method to collect consumption data. The time reference for food is weekly. Though unlike other EAP countries, Thailand does not classify food consumption into more detailed items than the broad categories. Only non-alcoholic beverages, alcoholic beverages, and tobacco products have two divisions under their major categories. For this reason, the Thailand SES only has 17 food items compared to hundreds in some other countries. Although limited in items, information on how the consumption was received is collected. For food categories: cash, in-kind, received free, and own-production acquisition types are available.

Table 6 illustrates the response rate for each food and beverage category as well as its source. There is no particular food category that is unanimously consumed by all households. A moderate percentage of households reported food consumption in-kind, which includes items received for free or own-produced. Lunch away from home and free milk are the most common items received for free. Free milk reflects the

government program that provides free milk to students. In own production, grains and vegetables are the most common food items produced by the household.

Table 5. Summary of the consumption questionnaire design

Country	Food expenditures (no. of items)	Diary vs. Recall	Reference period (food)	Food quantities available	Non-food expenditures (no. of items)	Reference period (non-food)	Survey year
Cambodia	22	Recall and 14 days diary	7 days	Yes (in diary version)	67	1 month/6 month/12 months	2014
Fiji	Open form	Diary	14 days	Yes	Open form	1 month/12 months	2013
Indonesia	222	Recall	7 days	Yes	103	1 month/12 months	2017
Lao PDR	142	Diary	30 days	Yes	192	1 month	2012
Malaysia*)	Open form	Diary	30 days	No	705	11 months	2016
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Timor-Leste	135	Recall	7 days	Yes	59	1 month/3 months/12 months	2014
Vietnam				Yes	40	1 month/12 months	2016

Source: East Asia & Pacific Team for Statistical Development, International Measurement Comparison Paper
Notes: (*) Malaysia and Philippines use income welfare in measuring poverty

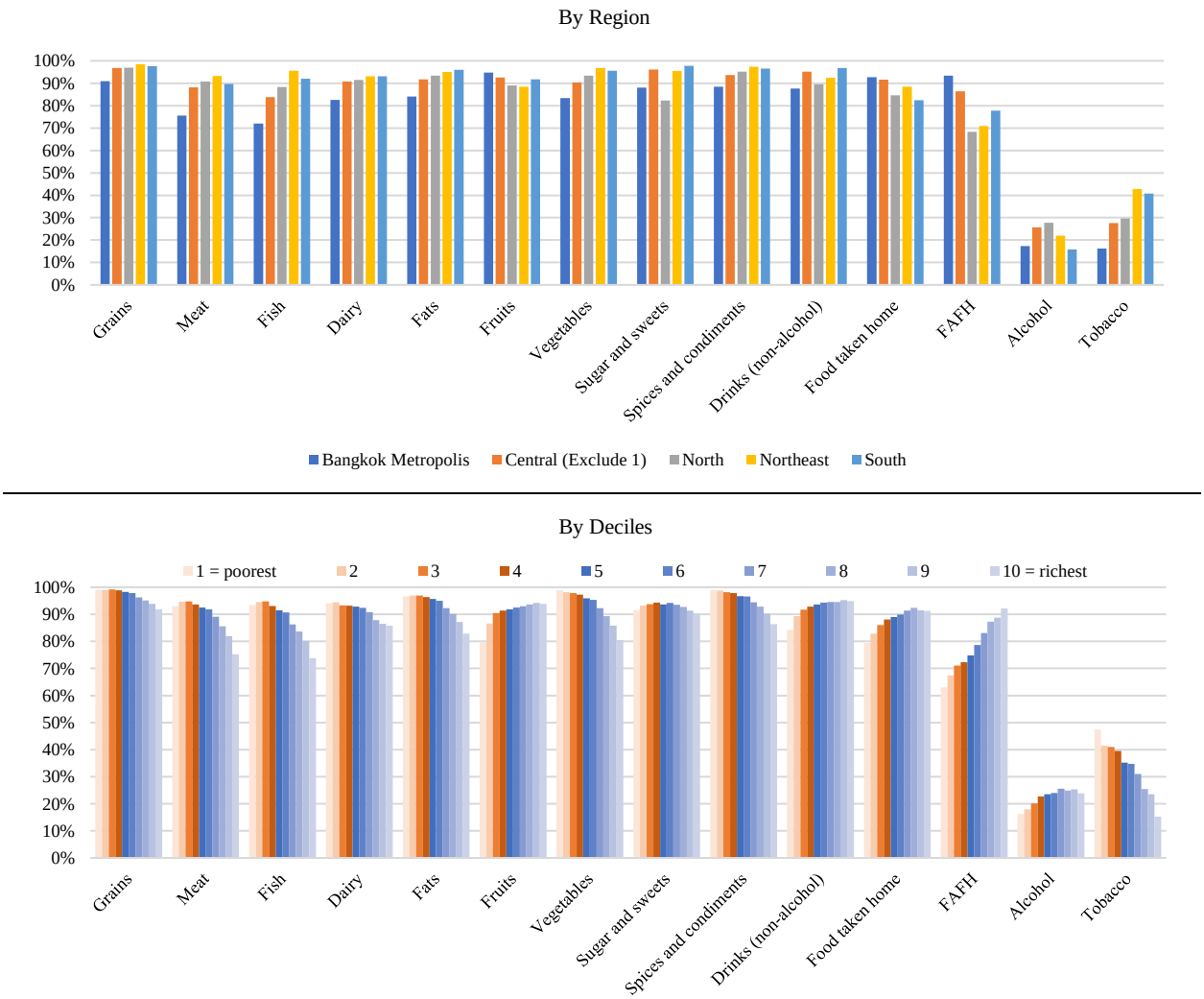
Table 6. Response Rate, by food category and source

	Total	in-cash (a)	in-kind (b+c)	received free (b)	own production (c)
1. Grains and cereal products	93.9%	79.5%	29.7%	8.7%	21.5%
2. Meat and poultry	82.2%	80.5%	4.3%	1.8%	2.6%
3. Fishes and seafood	81.8%	76.7%	15.8%	5.4%	11.1%
4. Milk, cheese, and eggs	86.2%	81.7%	24.6%	22.4%[a]	3.0%
5. Oils and fat	87.9%	83.2%	5.8%	2.3%	3.5%
6. Fruits and nuts	88.5%	81.1%	16.7%	8.7%	8.9%
7. Vegetables	87.6%	85.9%	32.0%	9.3%	25.4%
8. Sugar and sweets	88.7%	86.4%	6.4%	3.0%	3.4%
9. Spices and condiments	91.0%	88.0%	7.0%	2.5%	4.6%
10. Non-alcoholic beverages (at home)					
Semi-prepared products	49.0%	46.8%	2.4%	1.2%	1.2%
Prepared products	84.3%	81.7%	4.5%	1.5%	3.0%
11. Prepared food (taken home)	87.3%	82.8%	11.2%	7.6%	3.6%
12. Food and non-alcoholic beverages (eaten away from home)	71.1%	63.8%	22.7%	21.3%	1.8%
Breakfast	23.1%	21.1%	2.8%	2.3%	0.5%
Lunch	68.8%	60.4%	21.8%	20.5%	1.6%
Dinner	20.6%	18.1%	3.3%	2.8%	0.5%
13. Alcoholic beverages					
Drink at home	13.4%	12.9%	0.6%	0.2%	0.4%
Drink away from home	8.7%	8.2%	0.8%	0.8%	0.1%
14. Tobacco products					
Cigarettes, tobacco etc	26.7%	26.2%	0.6%	0.1%	0.5%
Betelnut, snuff etc	3.1%	2.8%	0.6%	0.2%	0.4%

Source:
Notes: Unweighted response rate. a. For milk, cheese, and eggs, the "received-free" category includes complementary milk for students, which is a free program supported by the government; 8,800 (20.4 percent) households received this benefit in 2017.

Figure 2 illustrates the incidence of food consumption by category across regions and decile. There is some variation in consumption patterns by geographic region and wealth. By region, Bangkok has the highest rates of food away from home (FAFH) expenditures. By decile, households in the higher deciles are more likely to consume fruit, food away from home, and alcohol. FAFH and tobacco are the categories with the largest difference between household consumption patterns in the lowest and highest deciles. 63 percent of households in the lowest decile consume FAFH compared to 92 percent in the wealthiest decile. On the other hand, 47 percent and 15 percent of households in the poorest and wealthiest household consumed tobacco.

Figure 2. Incidence of food consumption, by regions and decile in 2017



Source: WB calculations using THA SES 2017

Non-Food

The Thailand SES includes a wide range of non-food consumption items such as housing; household operation, furniture and equipment; clothes, footwears, personal care, transportation, communications,

education, and recreation. In total, respondents are asked to recall expenditures on 127 non-food items in the survey. Because non-food items are largely heterogeneous goods, surveys often collect data on the total value of non-food purchases, not on the quantities of items. For non-food categories, cash and in-kind acquisition types are recorded. The time reference for all non-food items is monthly.

The non-food component of the consumption aggregate involves more thinking about which items to include. This choice depends on data availability and the analytical objective of the welfare measure. Each country has its own discretion on which non-food items to include in measuring consumption aggregates. For example, in the case of Myanmar, there are some criteria to determine whether to include or exclude an item (Myanmar Ministry of Planning and Finance and The World Bank, 2017). Among the criteria: (1) does the particular item represent a lumpy expenditure (large but infrequently); (2) whether expenditure is in any way related to household welfare; (3) does the expenditure related to the particular item represent an investment with the expectation of a future welfare increase, as opposed to consumption that more immediately increase welfare. In the case of Myanmar, four items are excluded: weddings and funerals; expenditures on gold, jewelry, gems and precious stones; house repairs and expenses, including property taxes; and transfers to other households.

In Thailand, some non-consumption expenditures are collected but not included in the aggregation of household consumption. These excluded items are:

1. Taxes, charge/fees and fine
2. Career membership expense
3. Money/material given to the other person (outside this household)
4. Contribute money/material to NGO institute
5. Other contributions
6. Insurance premiums, cremation fee etc (excluding saving insurance)
7. Lottery tickets and other kind of gambling
8. Interest payment
9. Other expenses

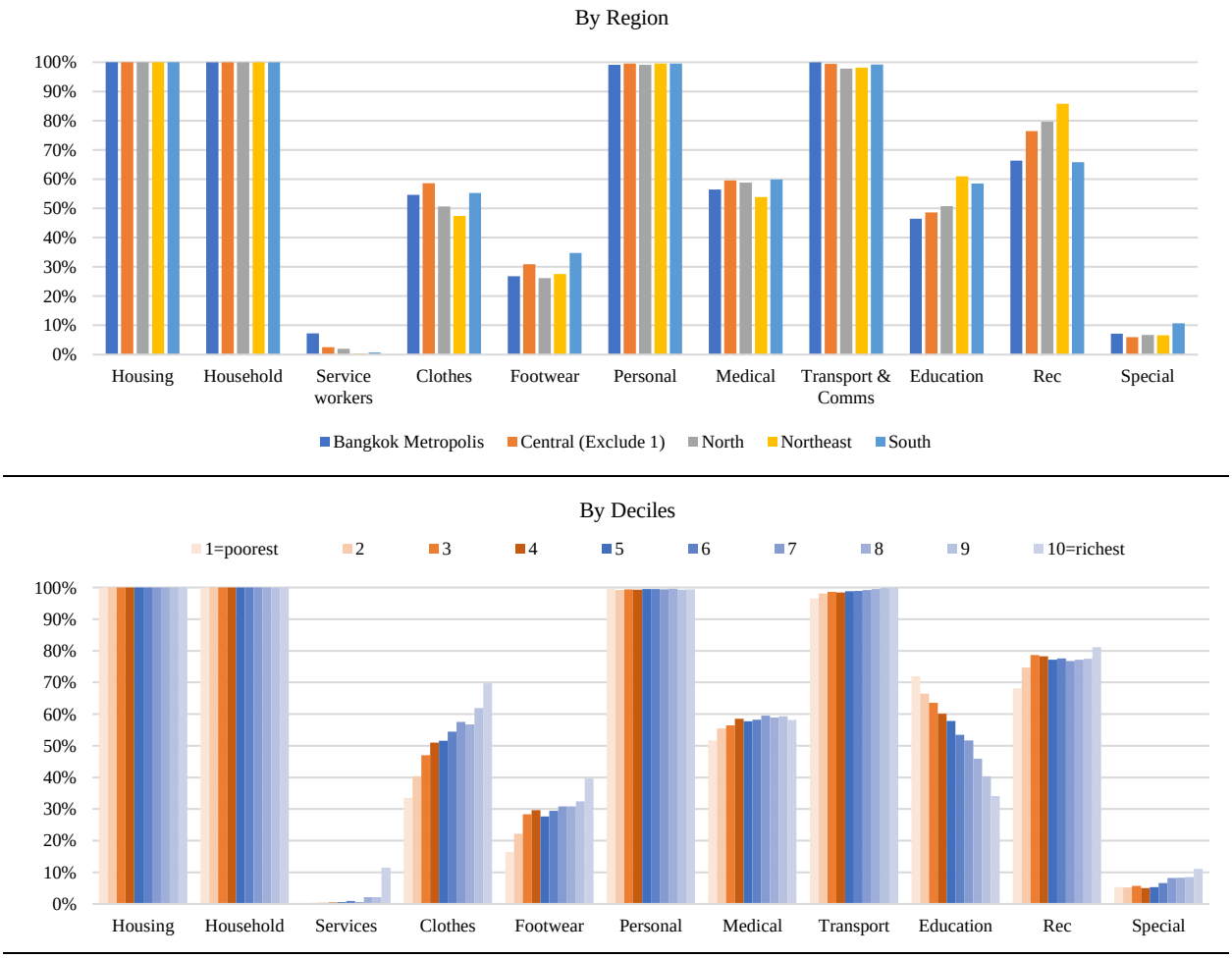
The incidence of consumption of 11 broad non-food consumption categories are shown in Figure 3. In 2017, all households surveyed have expenditures in housing. Expenditures in transportation and personal care products are also extremely common. The most uncommon expenditure categories are service workers in the household and special ceremony expenses, which are expected since the items are either non-frequent expenses or expenses typically made by wealthier households. About 10 percent of those in the top decile have expenditures on service workers. By region, households in Bangkok are most likely to have expenditures on service workers. Across the distribution, fewer poor spend on clothing and footwear. Households in the lowest deciles are more likely have education expenses, which could be related to larger households with children are more likely to be poor. In monetary terms, richer household spend more and also a larger share of their total income on education (Figure 1).

Health

An area of some debate in the field of poverty measurement is the inclusion of health expenditures into the welfare aggregate. An argument commonly made for excluding health expenditures is that they often reflect a “regrettable necessity” that does little to increase household welfare (Deaton and Zaidi, 2002). However, not including health expenditures would not capture differences between two individuals, one of whom can afford treatment, whereas the other one cannot.

Expenditures on health is often a lumpy expenditure where a decision almost always has to be made. One argument for exclusion is that such expenditure does not increase welfare. The fundamental problem with health expenditures lies in our inability to measure the cost of welfare losses from sickness. If we could value precisely such welfare losses, we could compare them to the presumed welfare gains of receiving treatment. Whether or not to include health expenditure into consumption aggregate also depends on elasticity of health expenditure with respect to total expenditure. The higher the elasticity, the stronger the case for inclusion. Estimating the elasticity of health expenditures with respect to total expenditures can help to determine whether they should be included in the non-food aggregate.

Figure 3. Incidence of consumption, by regions and decile in 2017



Source: WB staff calculations using THA SES 2017

Durables

From the view of household welfare, rather than using expenditure of the purchase of durable goods during the recall period, the appropriate measure of consumption of durable goods is the value of services that the

household receives from all the durable goods in its possession over the relevant time period. We call this user cost or rental equivalent for durable goods (Deaton and Zaidi, 2002).

A durable good is defined as a consumption good that can "deliver useful services to a consumer through repeated use over an extended period of time" (Diewert, 2009). These goods contribute to a household's welfare, but last longer than the time horizon over which consumption is typically measured. Examples of durable goods may include radios, videos, cameras, bicycles, dining table, chairs, etc. Even though some durables are included in the consumption aggregate, these are not likely to elevate otherwise poor households over the poverty line.

Countries like Cambodia, Lao, Mongolia, Myanmar and Vietnam are following Deaton and Zaidi recommendation by using user cost in calculating consumer durables which each country put its own restriction on what kind of durables included or excluded. Meanwhile, Indonesia and Philippines use cost values of durable goods.

In Thailand's SES questionnaire, the durables and estimated rental values are included but not separately presented, instead, they are listed under the non-food (expenditure on good and services) section.

Imputed Housing Rent

As shown in Figure 3, all households in the SES have expenditures in housing. This is because housing is imputed for households that do not directly report paying rent. Housing is one of the most problematic consumption aggregates component. The main principle is what is required to measure in monetary terms the flow services that the household receives from occupying its dwelling. Where rental markets function perfectly and all households rent their dwellings, then the rent paid is the clear choice to include in the consumption aggregates.

However, in many cases households own their dwelling and they reside and do not pay rent. In many surveys, non-renter households usually are asked how much it would cost them if they had to rent their dwelling in which they reside, and this implicit rental value can be used in place actual rent. Implicit rent is a hypothetical concept therefore they are not always credible or usable. The hardest cases arise when there are no data on actual not imputed rent.

As the housing cost is frequently missing when the household owns their home or receives free housing, imputed rental value of the dwelling property is often used in the construction of the aggregate. One example calculating the imputed rent is the 2011 Sierra Leone Integrated Household Survey, where a generalized linear model was used for the imputation. In the developing EAP region, many countries use hedonic housing rental regression models to estimate the imputed rents, which is included as part of housing consumption for non-renting households. In the Federated States of Micronesia 2013-14 survey, imputed rent is predicted on number of rooms, electricity, and roof and floor materials[11]. Timor also used imputed rents for household consumption in 2014 TLSLS[12].

In the SES, imputed rent is a large component of the consumption aggregate and is also included in the income aggregate. Fourteen percent of the sample responded with a rental payment; 86 percent of the sample are home owners vs 14 percent renters.

[11] 2013-14 Federated States of Micronesia HIES Poverty Profile
[12] Poverty in Timor-Leste 2014

3. Household Income

Most countries in developing EAP report their official poverty measures based on consumption while only Malaysia and the Philippines use income measurements.[13] In many countries, consumption measurements tend to be estimated more precisely than income in household surveys. This can be mainly attributed to the difficulties in defining and measuring income for the self-employed, especially in the case when they account for a relatively large share of the work force. Respondents are also more sensitive to revealing personal income.

In Thailand, both consumption and income-based Gini coefficients are published, but only consumption-based poverty rates are calculated. The official income aggregate for welfare measurement is household per capita current income. Income data is collected every 2 years, and currently on the odd years.

Table 7 lists the income categories that comprise household current income. In principle, the in-kind components of income are equivalent to the in-kind components of consumption. From the expenditure modules, consumption items can be purchased, received for free, or own-produced.

Table 7. SES variable mapping to income categories

Income categories	SES variables	Income Groups
1) Wages and Salaries	A18	
5) Income from work compensations or terminated payment	A26	Labor
2) Net profit from business	A20	Business
3) Net profit from farming	A22	Farm
4) Income from pensions/annuities, other assistances	A24	Pension
6) Income from money assistance from other people outside the household	A28	Remittances
7) Income from elderly & disability assistance from govt and other orgs	A30	Assistance
8) Income from rent of house / land and other properties (including license and copyright)	A32	
9) Income from saving interests, shares, bonds, and stocks	A34	
10) Income from interests of individual lending	A36	Financial
11) From rental estimated of free-occupied house (including own house)	A39	
12) From unpaid of goods and services	A40	
13) From unpaid of food and beverages	A41	In-Kind
Total monthly household current income per capita		

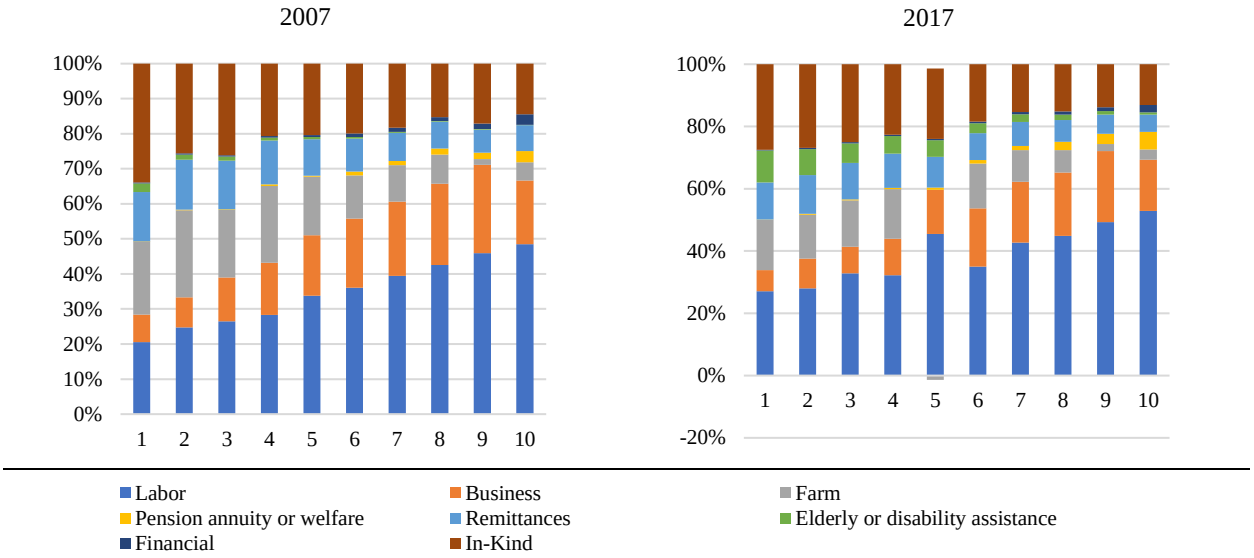
Notes: These income groups match categories used in Note #4 of the Thailand Poverty & Equity program Thematic Note Series

Income data is collected in two reference periods: “Last Month” and “Average per month”. Household current income is based on the data series reflecting “Average per month”. Wages are the total wage and salary income across all household members and their occupations. Earnings from wages and salaries are recorded when a household member worked as an employee, though it cannot be determined if the job is formal or informal. Income from ‘elderly and disability assistance’ likely includes all forms of social assistance. In the Thai version of the questionnaire, the wording of the questionnaire indicates all forms of social assistance. In-kind consumption items including food and housing are also added to the income aggregate.

[13] Flagship 2018, Riding the Wave p111 pp3

Mean household per capita income

Figure 4. Distribution of income components, by decile



Source: WB calculations using THA SES 2017
Notes: There is a hosuehold with very large negative farm income

Household Income incidence

The source of household income varies considerably by region and decile (Figure 5). Labor income is the most common among households in Bangkok, while farm income is most common among households in the Northeast. Households in Bangkok are most likely to have wage, business, and pension incomes. Households in the Northeast are also the most likely to receive remittances and public assistance incomes. Geography and poverty are correlated. Income sources among poor households are more likely to include farm, remittance, and public assistance.

Over time, the sources of income have also changed. First, the share of households receiving farm income has declined. Business and remittances declined but not as noticeably. The share of the population with public assistance income increased sharply in 2009 and then continued to steadily increase.

Figure 5. Incidence of income sources

Source: WB staff calculations using THA SES 2017
Notes: Incidence refers to non-zero values.

For details on trends in income, refer to Note #4 in the Thailand Poverty & Equity thematic note series. Note #4 discusses recent trends in income and sources of poverty reduction.

4. Technical Review of the SES

In FY2019, the World Bank Poverty & Equity team held discussions with the NSO on a RAS to improve the SES as well as broader statistics modernization. The development of a RAS is still in progress. This section summarizes possible areas of improvements to the SES that can be discussed with the NSO and used to further collaboration and discussions on a survey modernization RAS. Some comments have already been shared with the NSO including comments on the SES questionnaire by the LSMS team.

A. Questionnaire

In recent years, the NSO has expressed interest in an assessment and upgrade of the SES survey, including questionnaire design, data collection, and dissemination. The last update of the SES was conducted by TDRI in 2007. In 2018, the LSMS team provided a cursory review of the 2017 SES questionnaire (See Annex A for full comments). The review primarily consisted of suggestions to improve the wording of questions and inclusion of new variables to capture more specific information, and better inform the SDGs. A deep review of the household consumption aggregate was not included in the LSMS team review of the questionnaire.

Survey implementation is also instrumental for data quality. Supporting documents related to field work, organization, and sampling were not included in the initial review process. Data is collected on paper questionnaires, and is coordinated at the provincial level. Nationally, there are plans to digitize survey data collection[14]. The use of CAPI can reduce data entry errors and improve data quality.

The NSO showed interest in how well variables in the SES informed SDG targets. There are 169 SDG target indicators across 17 goals. Table 8 shows eleven targets can be informed or partially informed based on the current variables available. Of these eleven targets, some cannot be comprehensively informed, and revisions to the variable wording would need to occur to match SDG definitions.

Table 8. SES variables and SDG targets

SDG Goal	Target	Description	Information in the SES that informs the target, and suggestions for improvements
1	1.1	By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day	This information is based on the household consumption aggregate from the SES. It is the same as used by the NESDC for official poverty estimates. We had some questions on spatial deflation and how imputed rent was calculated. (Also note that the International poverty line is now $1.90/day 2011PPP not $1.25/day 2005PPP) -See word document for other comments on expenditures
4	4.1	By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes	- Consider asking additional questions for education: • Reason for not attending school • Time to school attending
4	4.3	By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	Q17. Consider asking additional expense items to capture comprehensive education expenses. • Tutoring/private lessons • Lodging (boarding) fees • School canteen fees

[14] The 2020 Census will be conducted using both electronic and paper formats. The 2030 Census will be conducted completely electronically. The SES may also be part of this digitization plan. Source: https://www.bangkokpost.com/tech/local-news/1570574/nso-setting-up-integrated-statistics

SDG Goal	Target	Description	Information in the SES that informs the target, and suggestions for improvements
			• School meals purchased outside school • Fees for transport organized by school • Fees for transport not organized by school • Fees for health services (paid to school) • Contributions to PTA, school management committee • Contributions to construction, maintenance or other school funds • In-kind contributions
6	6.1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all	- Consider asking additional questions related to water for monitoring some SDGs indicators (e.g. 6.1.1, 11.1.1): • Location of the water source • Distance to the water source • Availability of sufficient drinking water - Q13. Modify the question or add a question to identify the method of excreta disposal (e.g. to a sewer system, a septic tank, a pit latrine or an open drain). For septic tanks and pit latrines, ask how and by whom they were emptied. - Consider asking additional questions related to sanitation for monitoring some SDGs indicators (e.g. 6.2.1, 11.1.1): • Whether the toilet facility is shared by other households • Number of households sharing the facility • Location of the facility • Handwashing site with soap and water
7	7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	- Identifying the combination of fuel and technology (cook stove) used by households is important for the SDGs indicator 7.1.2. Consider asking questions related to stove used for cooking such as: • Type of stove • Location of stove/cooking • Presence of windows/chimneys/hoods/exhaust system • Injury with stove • Consider asking source of electricity, if on the public grid or generator - Consider asking questions related to lighting fuel (important also for measuring the SDGs indicator 7.1.2).
8	8.8	Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	The migrant population may be a hard to reach population in the SES. May be useful to add information about family members not at home into the household roster.
9	9.c	Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020	- Consider asking internet question separately, not as a follow-up question to home computer ownership.
10	10.1	By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average	SES3. Questionnaire of Household Income Part 3 Farm Operation - Land: Consider asking the following related to agricultural land: • Land ownership and documentation • Tenure security - It is recommended to use different reference periods depending on the frequency of purchases and productions to reduce cognitive burdens on the respondents. - Reference period for crop farming: It is recommended that the reference period used to collect data on crop farming covers one agricultural season. With the 12-month reference, the agricultural season that the respondents are referring to may be different when reporting the outputs and inputs. Depending on the timing of interviews, the inputs (expenditures) reported may be for the current agricultural season while the outputs (gross receiving) reported may

SDG Goal	Target	Description	Information in the SES that informs the target, and suggestions for improvements
			be from the previous agricultural season. - Q9. Consider asking the current total value of animals as well. Part 4 income from other sources Include more income sources related to social assistance and welfare such as the social welfare card, or other government transfers.
11	11.1	By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	- Consider asking the following questions related to the dwelling to calculate the SDGs indicator 11.1.1: • Documentation of the ownership • Proof of a tenure agreement • Compliance with local building codes • Location of the dwelling (geologically hazardous zones, garbage mountains, high-industrial pollution areas)
17	17.8	Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology	- Q16. Modify the question or add a question with a reference period of 3 months which is used to calculate the SDGs indicator 17.8.1.

Notes: Table only shows SDG targets where SES variables are available to inform the measure.

B. Price Deflators

In the case of Thailand, the welfare aggregated used for national and international poverty measurement is nominal. For the case of national poverty measurement, price adjustments are embedded in the national household-level poverty lines. While there are no implications of using a nominal welfare aggregate for national poverty measurement, there are implications for national inequality, international poverty and shared prosperity measurement.

Countries in East Asia and Pacific implement different practices to account for spatial cost of living differences (Table 9). Indonesia uses prices from 86 sub-regions and creates population weighted national poverty line as well as urban and rural lines to account for spatial cost of living differences. Mongolia uses the Paasche Index to account for differences in food prices. In Timor-Leste, Laspeyres price indices for urban and rural areas were constructed. In Philippines, fresh and processed food are priced differently in 80 provincial bundles with province-specific prices. For rural areas in Philippines, a 10% mark-down on prices of fresh food items and 10% mark-up on processed food items are introduced.

Table 9. Summary of spatial adjustments used by EAP countries

	Practices
Cambodia	Used current line based on 2009 survey and created poverty lines for 3 regions.
Indonesia	Used prices from 86 sub-regions and created national poverty line based on population-weighted provincial urban-rural lines, all based in March prices.
Lao PDR	Used village price survey to set regional prices. Used CPI to deflate the 12 months prices to an annual price. (In 2007/08 survey unit values is used for spatial price deflation.)
Malaysia	Used an Income Deflator Index.
Mongolia	Used Paasche Index.
Philippines	Created 80 provincial bundles with province-specific RENI and prices. Note that in Philippines fresh and processed foods are priced differently. Price variation for rural-urban areas within provinces was built in by introducing for rural areas a 10% mark-down on prices of fresh food items and 10% mark-up on processed food items. Used revealed-preference test to check if province's cost is lowest with own price vector.
Thailand	Welfare aggregate is nominal. Price adjustments are embedded in the household level poverty line.
Timor-Leste	Used a temporal and spatial price index.
Vietnam	Created base poverty line using 2010 data. Undertook market price surveys along with household survey and used the resulting SCOLI to account for price differences across the country. Used CPI index to temporally deflate all prices to January prices.

Source: Measuring Poverty in East Asia and Pacific, EAPTSD

Adjusting for differences in prices across regions and at different points in time is important for regional and international comparison projects. Reasons that justify these adjustments can be mainly attributed to the variation of the cost of basic needs across areas and overtime. Nominal expenditures or incomes need to be made comparable in spatial terms, by adjusting for different price levels in different parts of the country. The more diverse and vaster a country, the more important spatial adjustments will be. Adjustments are also sometimes needed overtime, sometimes within a given survey, if inflation is significant during the data collection period itself.

According to Deaton and Zaidi (2002), "When working with a single cross-sectional household survey, the price variation is less temporal than spatial; people who live in different parts of the country pay different prices for comparable goods." And in many developing countries, spatial price variation can be substantial, in both relative and absolute senses, and it is crucial to take them into account.

Because the welfare aggregate and poverty line calculation are indispensable to the poverty measurement process, poverty trends can be sensitive to decisions about price adjustments of nominal consumption measures or poverty lines adjustments. Besides, different assumptions about price inflation overtime impacts poverty trends, especially where large population shares exist around the poverty line. Therefore, collecting high-quality price data and aggregating them into a single index are of great significance in improving the accuracy of poverty monitoring over time and space.

Spatial Deflation

Spatial price indices were computed jointly with TDRI under the FY2016 Thailand Technical Assistance and Measurement program (P156297). Spatial price indices were computed for 2002 and 2011 following the multilateral EKS method (Table 10). In 2002, price data was from the Bureau of Trade and Economic Indices, in the Ministry of Commerce; and quantity information was from the 2002 SES. Price and quantity data for the 2011 price index are both sourced from the 2011 SES. Bangkok was used as the reference area.

Table 10. Spatial Price Indexes, 2002 and 2011

		Spatial Index (from TDRI)			Rebased to National Average	
Area	Region	2002	2011		2002	2011
Urban	Bangkok	100.0	100.0		1.011	1.012
	Central	99.1	99.4		1.002	1.006
	North	98.7	98.1		0.998	0.993
	Northeast	99.5	98.9		1.006	1.001
	South	99.6	99.7		1.007	1.009
Rural	Central	98.2	98.6		0.993	0.998
	North	97.9	97.3		0.990	0.985
	Northeast	98.4	98.2		0.995	0.994
	South	98.4	98.8		0.995	1.000

Source: Thailand Development Research Institute

Calculation of international poverty rates utilize one threshold at the national level. For international poverty measurement, it is necessary to account for price differences in the welfare aggregate. Welfare for international poverty measurement are in 2011 PPP units. A comparison of nominal and spatially adjusted welfare aggregates can be conducted. To create a spatial price adjusted welfare aggregate, the spatial price indices computed by TDI are first rebased to the national average. Poverty rates from these two welfare series (nominal and spatially adjusted) can be compared as a preliminary check on the impact of spatial price adjustment on poverty rates. As is expected, international poverty rates are lower when taking into account spatial price differences, though differences in poverty rates are small (Figure 6). Inequality is also slightly lower when using spatially adjusted welfare aggregates (Figure 7). However, the trend in poverty and inequality does not change.

Figure 6. Poverty rates, nominal and spatial price adjusted consumption aggregates

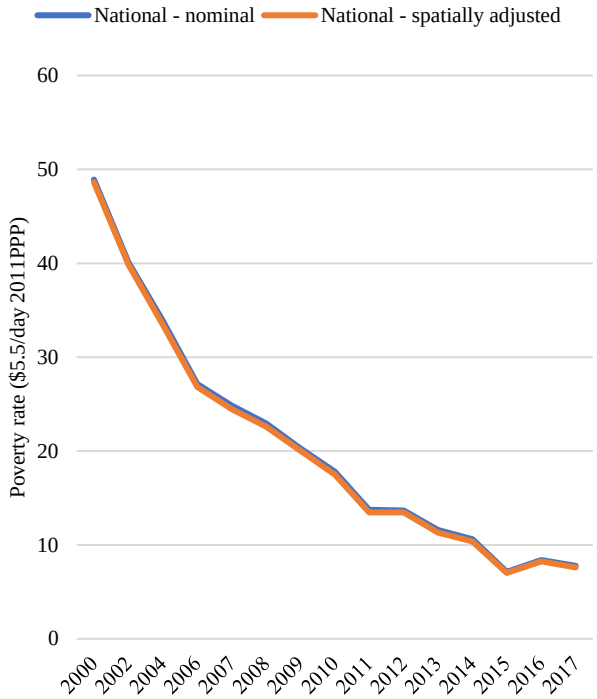
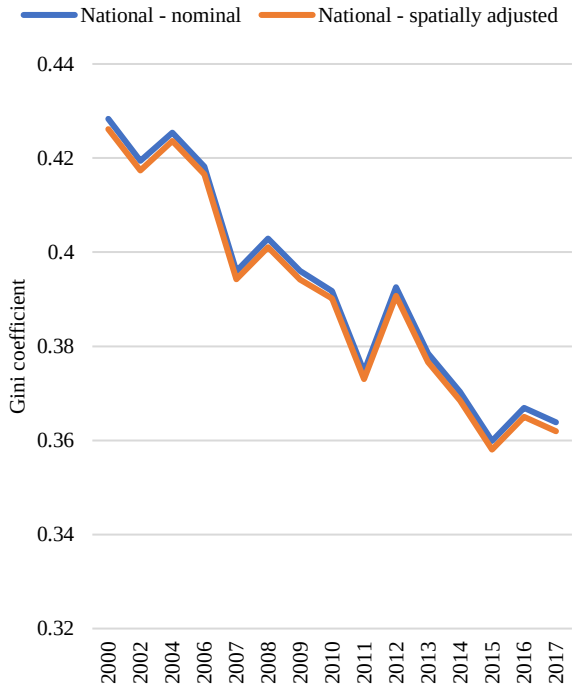


Figure 7. Gini coefficient, nominal and spatial price adjusted consumption aggregates



Source: WB staff calculations using SES, multiple years

Temporal Deflation

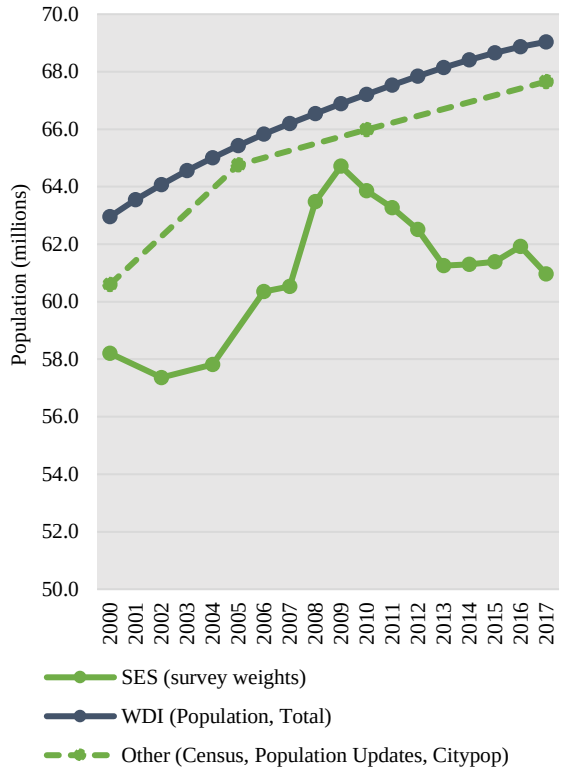
Within survey price adjustment are also important to consider. Fieldwork for the SES is conducted from January to December each year. In some years, droughts and seasonal changes can have potentially large impacts on food prices. If fieldwork is rotated across regions over the year, correct temporal deflation is crucial to accurately understand the true cost of living differences. Less analysis has been done on the existing procedure for temporal price adjustments. Based on documentation of the household level poverty lines, it is not clear if temporal price adjustments are being considered.

C. Survey Weights

Survey weights in the SES (variable a52) are not well aligned with population counts from the Census, or other third-party estimates of Thailand's population. In 2009, the population weights from the SES came the closest matching outside population counts. Figure 8 illustrates the divergence between the SES population estimates and other external estimates of poverty. In 2014, the SES sampling frame was updated to use the 2010 Census. The expectation would be that survey weights in 2014 would be much higher, but this is not the case. Population weights from the 2014 SES accumulate to 61.3 million, while 2010 national census population estimates are 66 million.

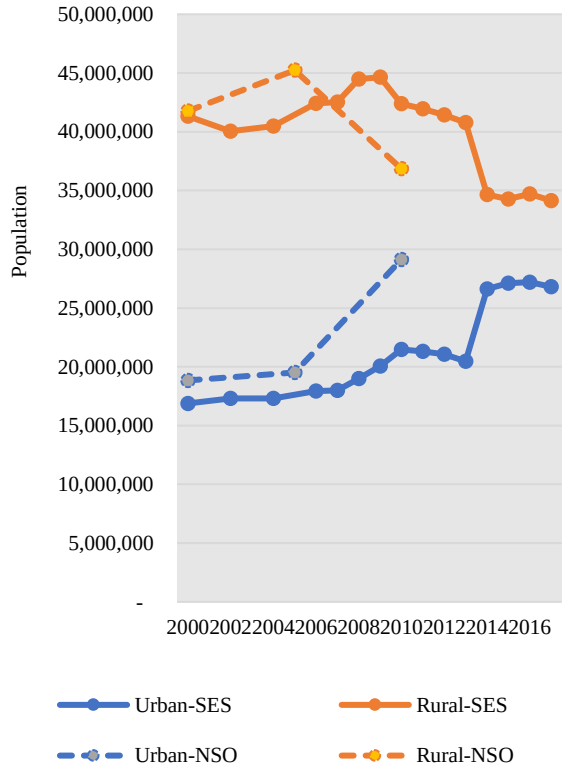
The change in sample frame from the 2000 to 2010 Census also have implications on comparability of the SES over time. Figure 9 shows that an important implication of the sample frame change in the 2014 survey is the urban and rural population shares. In 2013 and earlier, the 2000 Census was used as the sample frame. When the 2014 began using the 2010 Census, naturally, the population was more urbanized. However, rather than a smooth change in the urban and rural shares of population, there was a break.

Figure 8. Population estimates, SES and other sources



Source: WDI, SES, Census, City Pop

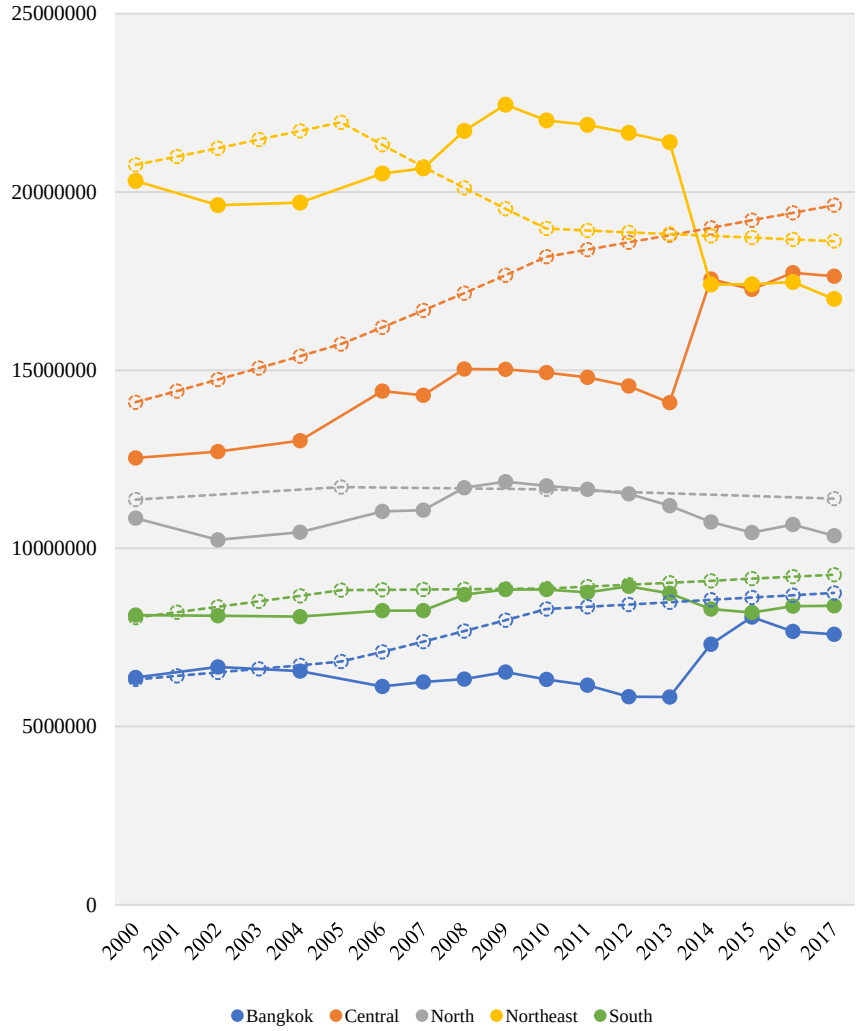
Figure 9. Urban and Rural population shares, SES and other sources



Source: SES, Census
Notes: NSO estimates for 2000 and 2010 are from the Census. The 2005 NSO population numbers are from the Population update survey.

By region, the largest change in survey population between 2013 and 2014 are seen in the Northeast and Central regions. The population size of the Northeast fell about 4 million from 2013 to 2014, while the popualtion in the Central region rose about 3 million. The shift from the 2000 to 2010 population census reflected large shifts to urban areas.

Figure 10. Population by region



Source: SES, NSO, Census, CityPop
Notes: Solid lines are regional population totals from the SES. Dashed lines are regional population counts from the Census, NSO, and CityPop. 2000, and 2010 regional estimates are from the Census. 2005 estimates are from the Population update survey conducted by the NSO. 2017 regional population estimates are from CityPop. Regional populations for intermediate years are interpolated.

Improvements to the calculation of the SES survey weight depends on the source of the discrepancy between survey and Census estimates. One potential issue is that national population projections or cluster sizes from the listing are not being updated year to year. If this was the case, then improvements to field work and the sampling weight formula should be implemented. However, the WB team does not have sufficient information on field work protocol to confirm these hypotheses. Another possibility is that

internal migrants or certain segments of the population are not being well captured. This possibility is discussed in the next section.

In terms of correcting the weights in the series to smooth the population trend across the 2013/14 break, calibration using raking, or maximum entropy methods can be used to adjust original survey weights to line-up with population totals from other sources. Maximum entropy weights are more efficient than raking methods since original weights are adjusted in a manner that minimizes overall changes, whereas raking rescales all weights to match a specified total amount. Lacking a characteristic variable to calibrate on, the raking method is applied.

The figures below show the UMIC poverty rates ($5.5.day 2011PPP) and Gini coefficient calculated using the original SES survey weights as well as with weights when adjusted to match regional populations counts from Figure 10. Results show that re-calibrating the weights at the regional level yields some changes. Poverty rates are lower, especially before 2013 when the 2000 Census was used as the sampling frame, because the urban share of the population was underestimated. Using the same logic, it makes sense that the Gini coefficient is higher after taking into account the population should have had a larger share from urban areas, or the presence of wider urban-rural disparities. After 2014, when the sample frame was updated, poverty and inequality estimates using original and adjusted survey weights are much more similar.

Figure 11. Poverty rates, original SES and adjusted weights

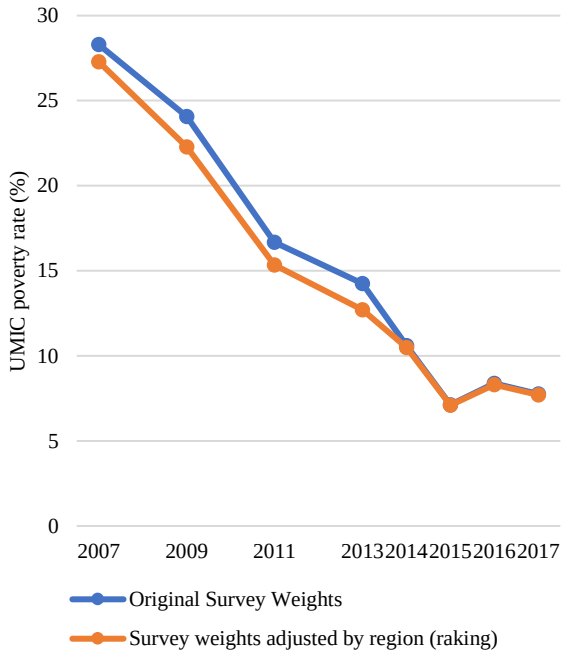
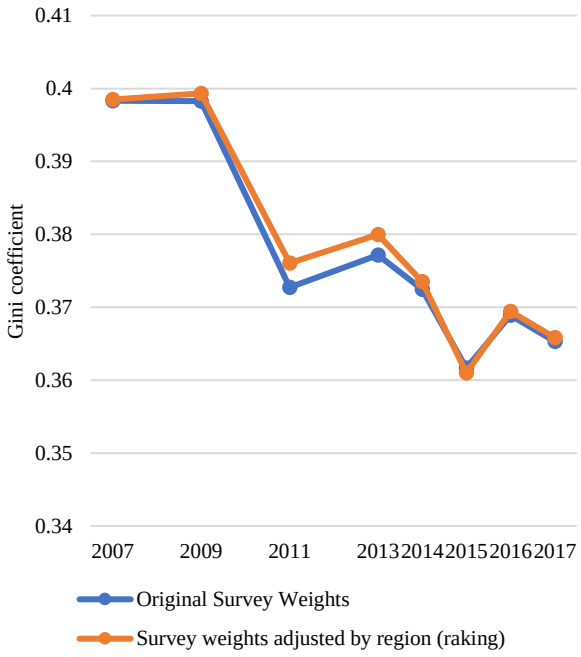


Figure 12. Gini coefficient, original SES and adjusted weights



Source: WB staff calculations using the SES

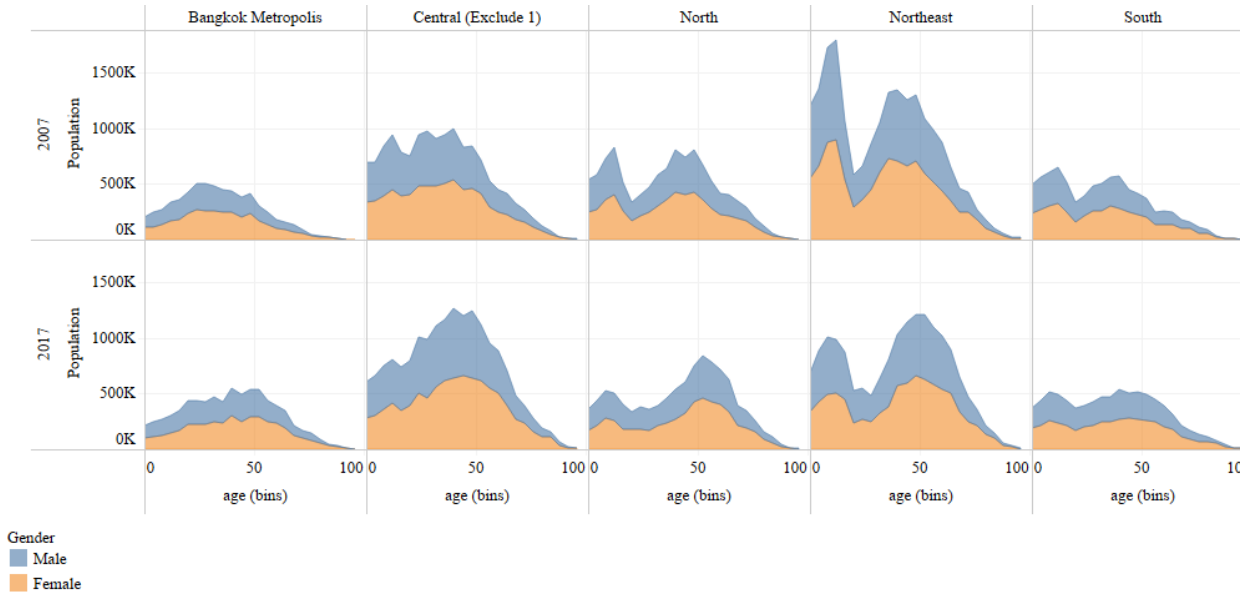
Ideally, survey weight calibration should be conducted at more disaggregated levels of geographic representativeness. However, public population estimates were only available at the regional level. The Ministry of Interior publishes population registry at the provincial level, but it does not reflect current residence, since individuals are registered by location of birth or family ties rather than current location.

D. Population Coverage

Groups that are floating or hard to reach can bias populations that are captured by surveys. In some countries, certain groups are more challenging to survey than others. For example, in Mongolia, the nomad population is hard to survey since population density is low, they live in remote areas, and are very mobile. In China, the floating migrant population is estimated to be in the hundreds of millions, and these rural-to-urban migrants are often difficult to categorize or track. Residents in slums, and those in gated communities are also not well estimated since their numbers are constantly shifting or they simply cannot be reached to be counted.

In Thailand, migrants and top income earners are two groups that potentially may be underrepresented. Figure 13 shows the population distribution by province and gender based on survey sampling weights. In the North, Northeast, and South provinces, there is a dip in the population of the younger working age segment of the population. While it is possible that these youths are not living in the provinces and working in Bangkok, they are also not showing up in Bangkok. If these youths are splitting their time between Bangkok and their homes in the provinces, it is not clear where they are being counted in the SES.

Figure 13. The distribution of the population based on SES survey weights



Source: WB staff calculations using the 2007 and 2017 SES.
Notes: The distribution of the population is shown by age and region.

Migrants

The SES provides information about living standards through consumption and income data, but mainly on the permanent residents. Relatively little information on the migration process has been included in the survey. As aforementioned, the working-age youth population that are internal migrants may be inaccurate. The 2018 Migration Survey estimates 568 thousand active migrants in Thailand. Migrants are mostly urban to rural and seasonal. The number of migrants cannot fully explain the gap between Census and SES survey

population estimates. Whether or not a household member is a migrant can be better captured by a having a roster of family members who are currently not residing in the household. Globally, this data challenge has been tackled in a number of surveys. A migrant survey was conducted in Kyrgyzstan, which is a country with high levels of internal migration as well as migration to Kazakhstan and Russia. As an example, Annex B shows the individual characteristic module of the Kyrgyzstan 2015 CALISS Migration module that was funded by a DEC RSB grant. The module was added to the regular household survey data collection that year.

In case of migrants from Tajikistan, Tajik construction workers often live in group accommodations in Russian construction sites. Migrant worker registries also facilitated the location of workers who are generally male and single, and live in group accommodations. A similar strategy of creating a listing of migrants from worker registries in urban areas was also used to survey migrants in the 2008 Longitudinal Survey on Rural Urban Migration in China (RUMiC).

Top Income Earners

Missing top income earners can lead to underestimates of inequality. A study in Uruguay linked households from household surveys and administrative tax databases to compare income reporting in these two sources (Higgins et al, 2018). The study found that the rich underreported labor income in the household surveys compared to reporting for income tax purposes. The underreporting was larger for richer households.

The causes of the missing rich issue can vary. Lustig (2018) identified three major causes of missing top incomes: (1) sampling design issues; (2) data collection issues; (3) data preparation issues. For Thailand, non-response to specific income questions and underreporting answers in the data collection process are the main concerns. According to the World Bank's Thailand Systematic Country Diagnostic report in 2016, the low response rate among top income households over time is "quite pertinent." It is unclear just how much of the top end of the distribution is missing from the SES. However anecdotally, it is expected that few rich households are captured given the difficulty to interview this group.

Analysis without top incomes provides a less accurate description of the incidence of inequality and a biased distribution mapping of the economic classes. From a policy perspective, the analysis with underreporting at the top "limits the assessment on how much can countries expand tax-based redistribution through, for example, personal income taxes" (Lustig, 2018). Income corrections are needed for the bias generated by issues with top incomes, yet it is hard to conclude an optimal methodology.

There are two general practices to take into account top income earners that are missing from household surveys. First, tax records are a good complementary data source to find distributional information on the top income earners (Atkinson et al., 2011). Second, parametric assumptions can be made about the shape of the top end of the distribution (Atkinson, 2007; Atkinson et al., 2011; Alvaredo, 2011). However, these two practices can only be useful to calculate adjusted inequality measures. These strategies do not allow for profiling of the rich or other types of analysis.

In addition to tax records, there are several alternative data options for Thailand to acquire information on the top incomes: (1) National Accounts Data: Some developing countries such as China or India are experiencing an increasing underreporting discrepancy among top incomes between household surveys and national accounts (Lakner and Milanovic, 2013). And from their experience, rescaling the top incomes from survey to match the national accounts can also address the underreporting issues of top incomes; (2) Housing Price Data: In many countries, when tax records are unavailable, using housing prices to estimate the top tail of the income distribution is also feasible (van der Weide et al., 2016); (3) Consumer Credit Data: The poverty team in Indonesia takes a consumer credit approach to mitigate the bias caused by missing top earners.

E. Urban and Rural Classification[15]

Urban and rural classifications in the SES are currently not associated with population density. Urban areas refer to the municipal city in the province, and the rest of the province is considered rural. There are 77 provinces in Thailand SES, including Bangkok. Bangkok is the only province that is exclusively urban. With increasing economic development, it may be inaccurate to assume that only one town in each province is "urban", and this classification should be updated.

In countries that have experienced substantial urban growth in the past century, the definition for urban and rural usually evolved over time to more accurately reflect the characteristics of settlement. For example, the definition of urban in United States has continued to adapt. In 2010, the U.S. Census Bureau used criteria including total population thresholds, density, land use, and distance[16] to distinguish the urban and rural areas.

The United Nations provided a series of broad principles to distinguish urban from rural areas for Population and Housing Census: density of settlement, the percentage of the economically active population employed in agriculture, and the ease of access to medical care, schools and recreation facilities, etc. Many countries follow the UN's broad principles.

Thailand may refer to but not necessarily use the definitions of its EAP neighbors. There is no uniform definition of urban and rural that is applicable for most countries, even within the same region. In the developing EAP region, Malaysia used combined criteria of size, density, and percentage of agricultural population for urban-rural distinctions[17]. Indonesia, in the 2000 and 2010 census, used "a technical scoring system with criteria of population density, percentage of household working in agriculture sector and urban facilities[18]" (Mulyana, 2014). In the case of China, there is an urban *hukou* system defining the urban population widely used for statistical data collection.

[15] UNESCAP has advised the NSO on this issue.

[16] Source: Ratcliffe et al. 2016. Defining Rural at the U.S. Census Bureau:
i) Total population: urbanized areas are areas with 50,000 or more people. Urban clusters are areas with at least 2,500 but fewer than 50,000 people; ii) Density: in order for a block to qualify as urban, it must have a density of 1,000 people per square mile (ppsm), once the initial identification process is concluded, a second automated pass is initiated with a lower density threshold, 500 ppsm; iii) Land use: a block containing nonresidential urban land uses can be included if it has a high amount of impervious surface and is within a quarter mile of the urban area; iv) Distance: hop and jump criteria are applied - the hop criteria allows for areas up to half a mile along a road corridor (with multiple hops) to be included, and the jump criteria allows for the inclusion of areas up to 2.5 miles, but only one jump along a road.

[17] Specific development areas that can be identified and are separated from any gazetted or built – up area by more than 5 km and has a population of at least 10,000 persons, with 60% (aged 15 years and above) engaged in non- agricultural activities

[18] Adopted from the Draft National Report on Habitat 2014, Urban Demography: In Indonesia 2000 and 2010 Population Census, village classified as urban area if fulfill these following criteria: i) in areas that have a population density of 5,000 persons per square kilometer; ii) area in which 25 percent or less of the households work in the agricultural sector; and iii) areas in which there are eight or more specific kinds of urban facilities, including primary school or equivalent; junior high schools or equivalent; senior high schools or equivalent; cinemas; hospitals; maternity hospitals/mother-child hospitals; primary health care centre; roads that can accommodate three and four wheeled motorized vehicles; telephones; post offices; markets with buildings; shopping centres; banks; factories; restaurants; public electricity and equipment rental services.

5. Literature

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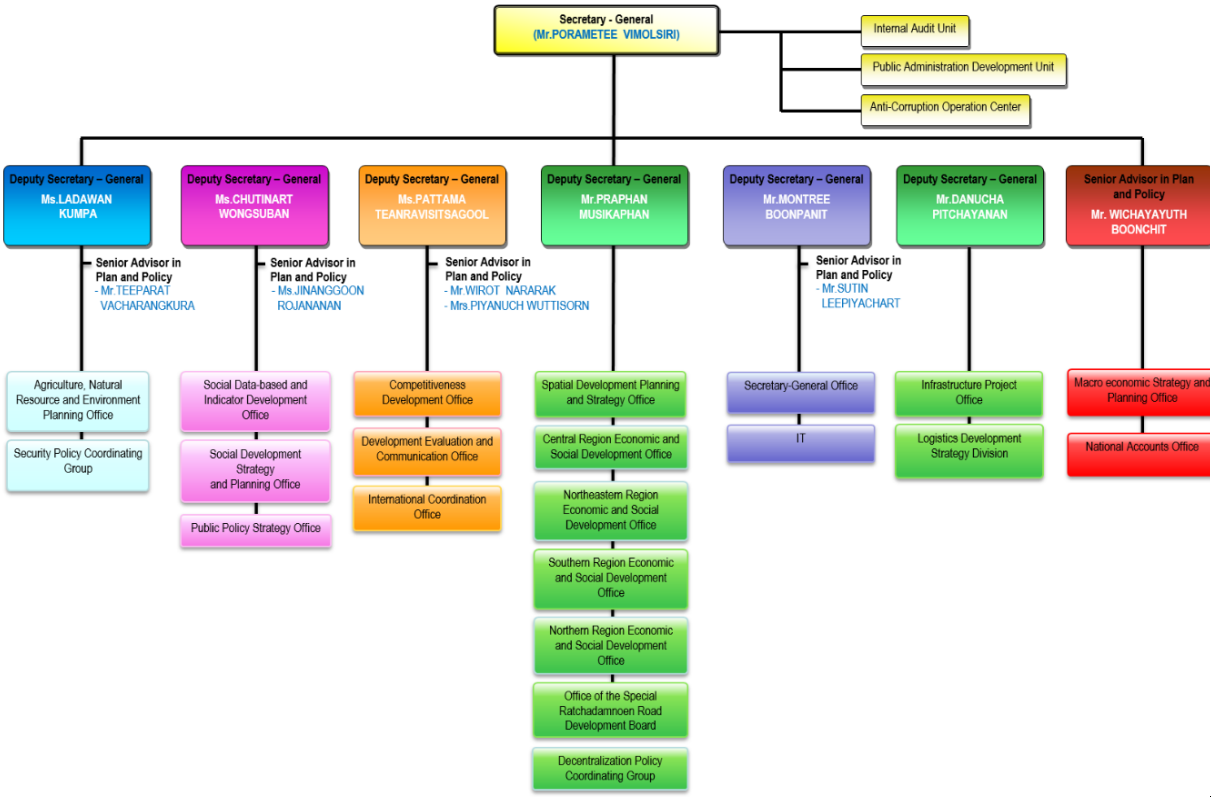
6. Figures

Figure 14. Ministry of Digital Economy and Society

NSO

Source: http://www.mdes.go.th/view/10/About%20Us

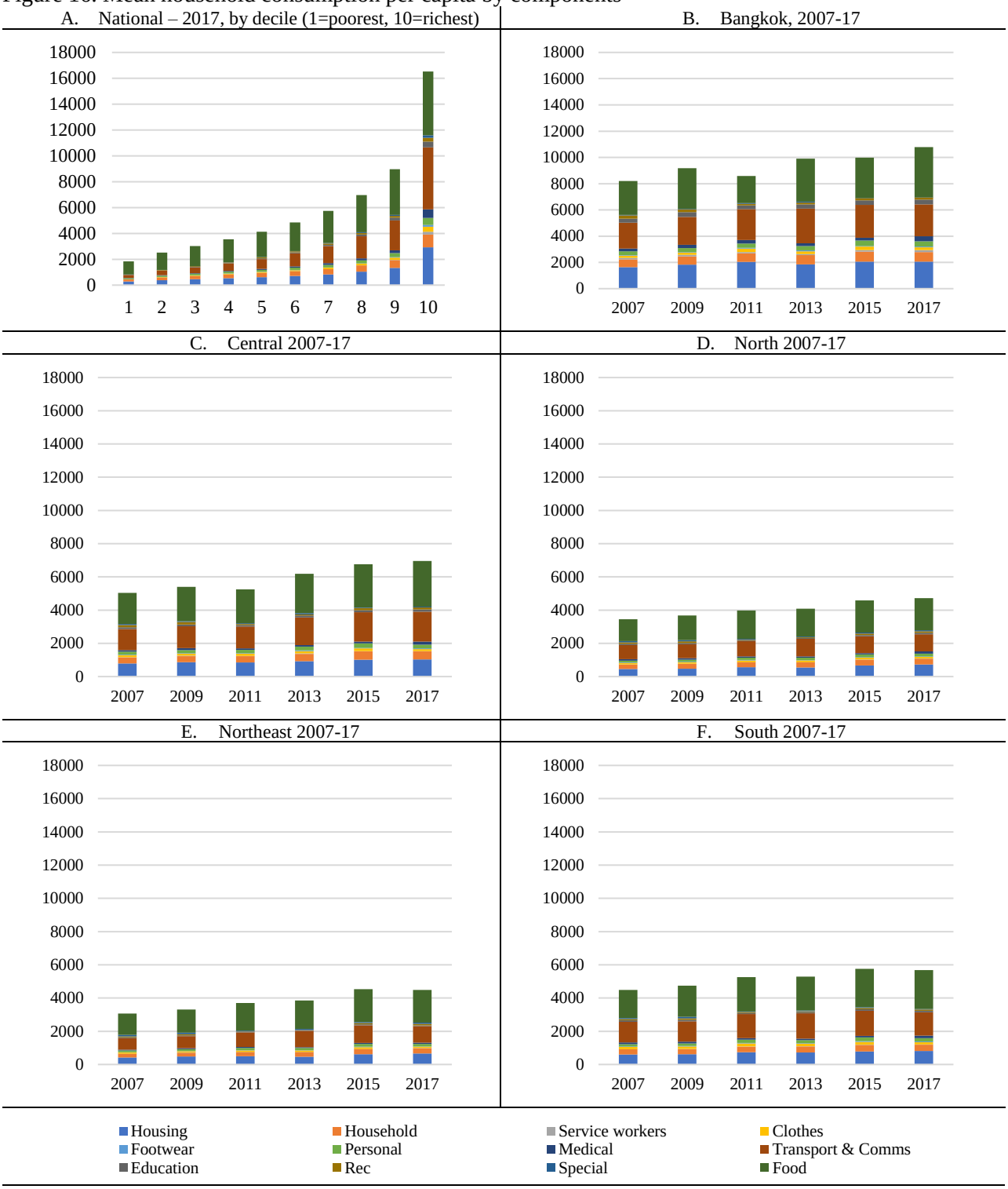
Figure 15. NESDC Full Organization Chart



Source: Retrieved April 10, 2019, https://www.nesdb.go.th/nesdb_en/ewt_news.php?nid=4256

Mean household consumption

Figure 16. Mean household consumption per capita by components

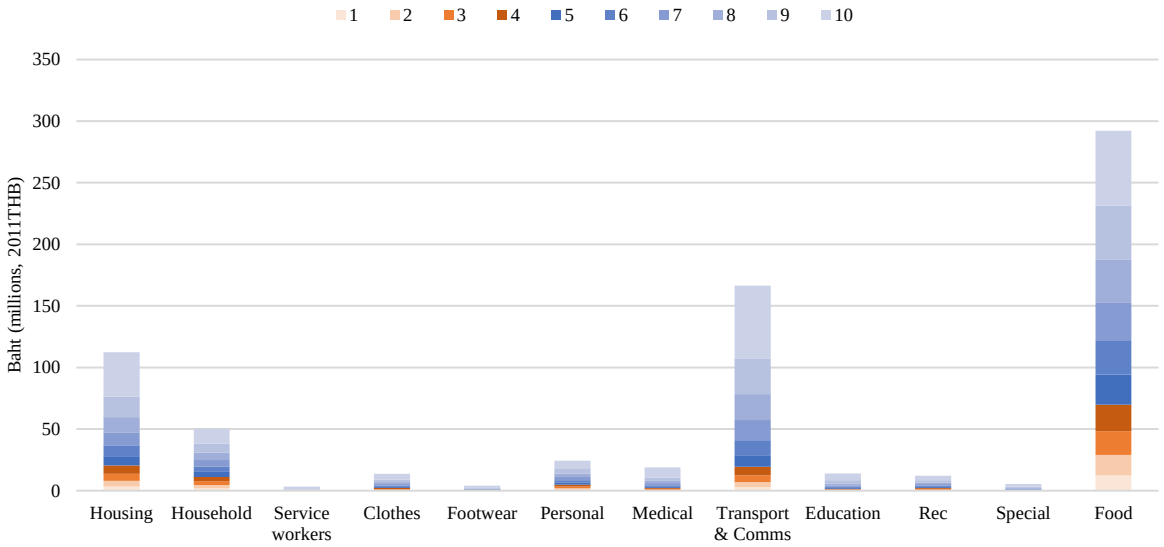


Source: WB staff calculations using THA SES 2017

Cumulative household expenditures

Figure 17 illustrates the total aggregate household consumption of each category, and colored by decile. The bottom 40, the lowest four deciles are colored in orange. In terms of total household expenditure across the whole country, the aggregate amount is largest in food, and then followed by transportation and housing (Figure 17). In aggregate, the richest are consuming the most.

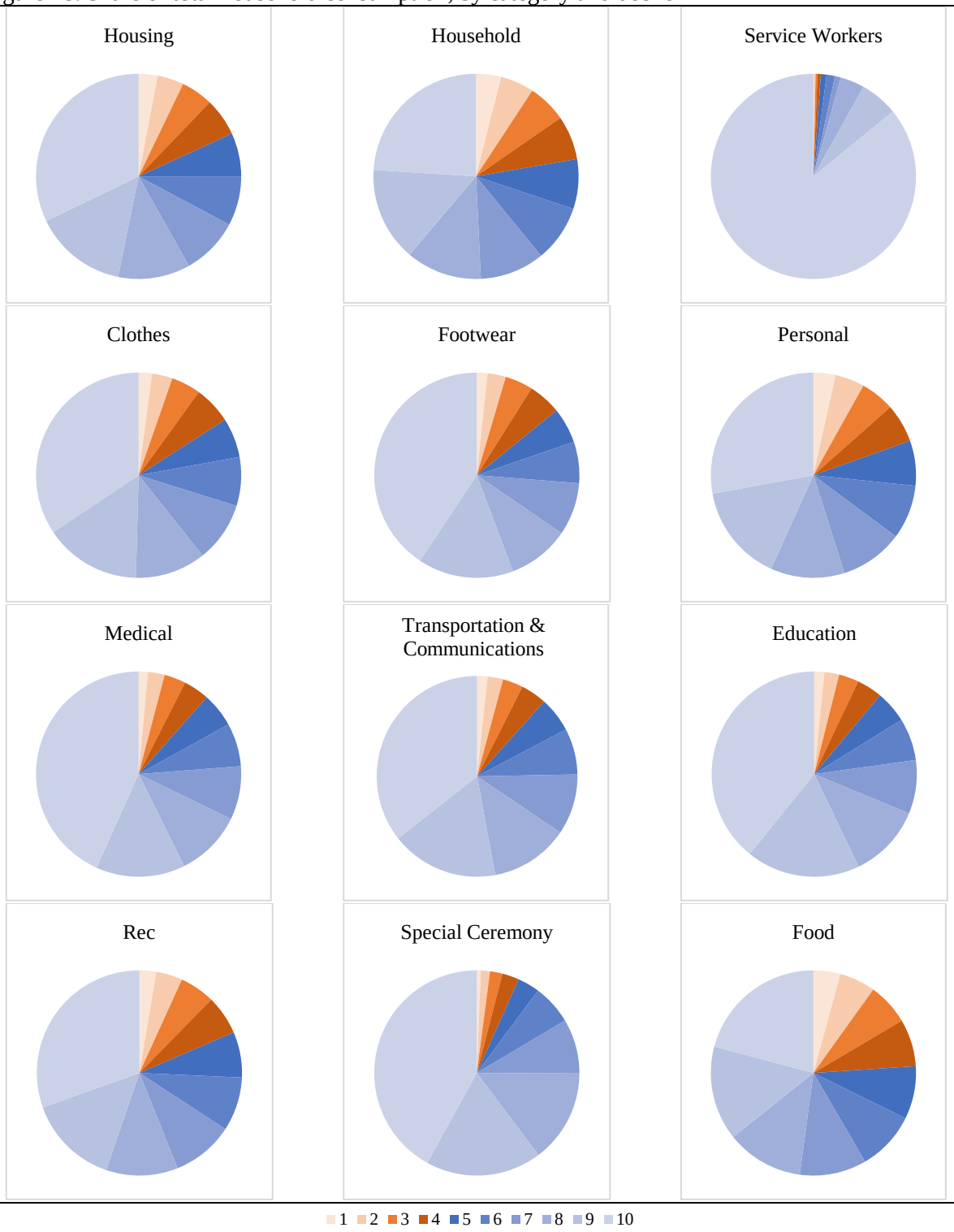
Figure 17. Total monthly consumption, by category and decile in 2017



Source: WB staff calculations using THA SES 2017
Notes: decile 1= poorest, and decile 10 = richest

Figure 18 shows further break downs by consumption category. The category where the rich are the primary consumers is Service workers, with primarily only households in the top decile stating this consumption expenditure.

Figure 18. Share of total household consumption, by category and decile



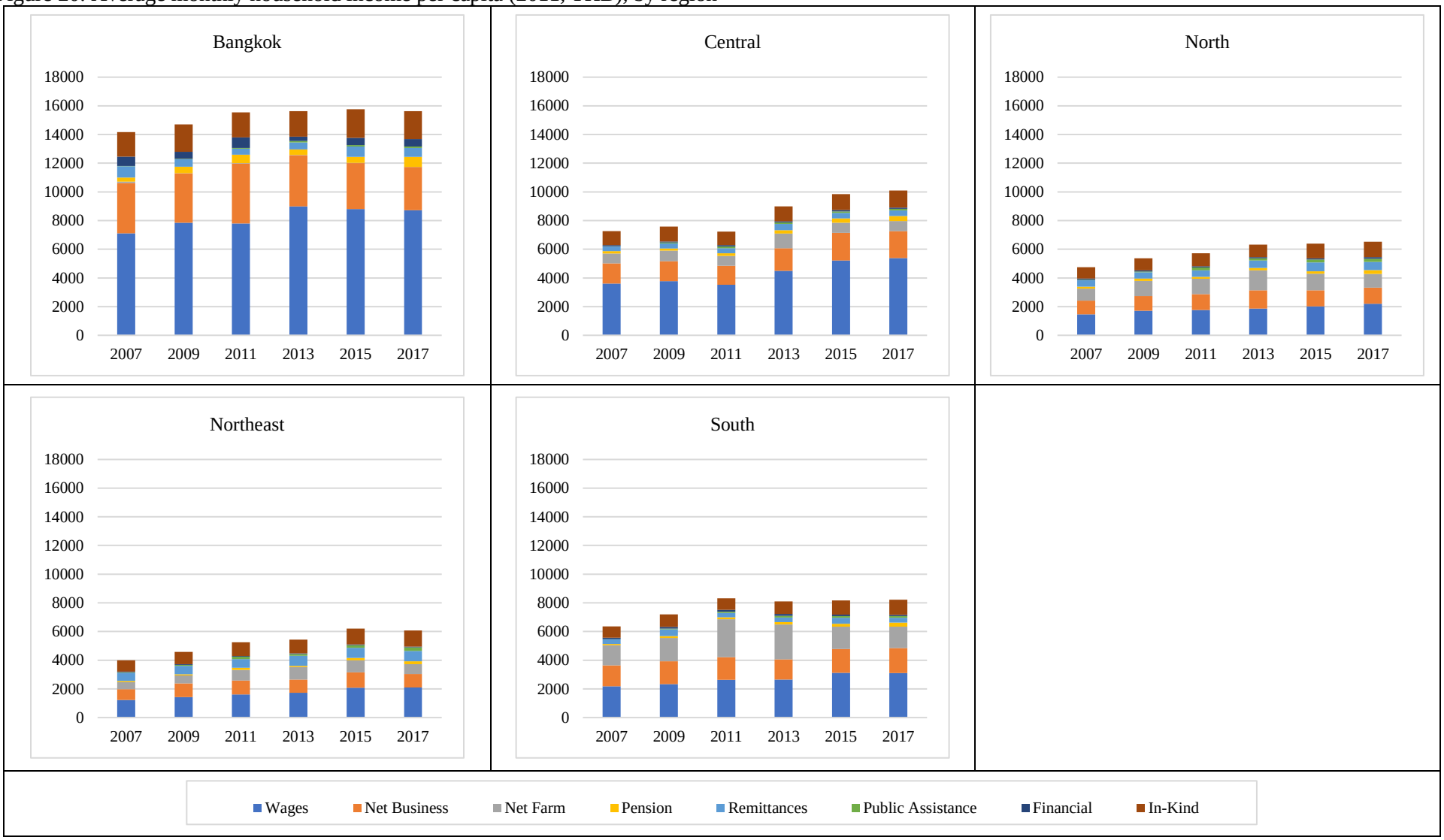
Source: WB staff calculations using THA SES 2017
Notes: decile 1= poorest, and decile 10 = richest

Changes in household consumption over time

Figure 19. % Change in **mean** household consumption, **2007-17**, by region and by decile

Source: WB staff calculations using THA SES 2017

Figure 20. Average monthly household income per capita (2011, THB), by region

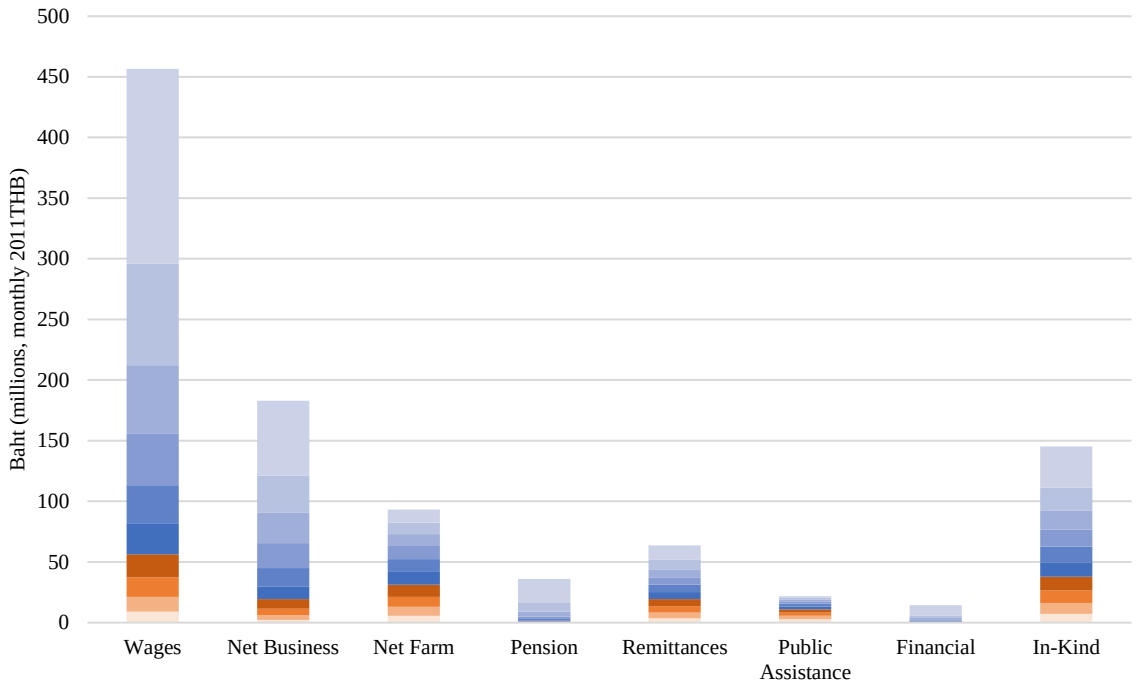


Source: SES

Cumulative household income

The figure below illustrates the aggregate household income from the 2017 SES by source. Each income source is also colored by decile to illustrate how much of each income source is attributed to a particular decile. For example, about one-third of the cumulative wage income from all households is attributed to the top decile.

Figure 21. Total monthly household income, by category and decile in 2017



Source: WB staff calculations using THA SES 2017

Annex A. Comments on Thailand Socio-economic Survey Questionnaire[19]

SES.2. Questionnaire of Household Member and Expenditure

Part 1 Household member

- Consider asking the date of birth.
- Q3. Consider adding/modifying the answer category to identify the following:
    - Biological son or daughter
    - Adopted son or daughter
    - Foster son or daughter
    - Parents in law
- Q5. It is recommended to ask 'months' for children less than 5 years of age while 'years' for all others.
- Q8. It is recommended to use the Washington Group short set of questions on disability to collect disability data.
- Q11. Is 'Consensual union' not observed in Thailand? Consider adding it to the answer category.
- Q17. Consider asking additional expense items to capture comprehensive education expenses.
    - Tutoring/private lessons
    - Lodging (boarding) fees
    - School canteen fees
    - School meals purchased outside school
    - Fees for transport organized by school
    - Fees for transport not organized by school
    - Fees for health services (paid to school)
    - Contributions to PTA, school management committee
    - Contributions to construction, maintenance or other school funds
    - In-kind contributions
- Consider asking additional questions for education:
    - Reason for not attending school
    - Time to school attending
- Q22. What is the reference period for this question? 19th ICLS recommends that the work status will be asked with 7-day reference period. It is also recommended that this question be modified to capture more comprehensive data on work and employment. This question seems to be heavily dependent on respondents to categorize themselves. Consider asking the following:
    - Ask if the person worked for a wage, salary, commission or for any payment in kind in the last 7 days
    - Ask if the person did any kind of business or other activity to generate income in the last 7 days
    - Ask if the person helped with a paid job or business of a household or family member in the last 7 days
    - Ask if the person worked on household agricultural activities in the last 7 days
    - Ask if the person worked as a paid apprentice, trainee or intern in the last 7 days

[19] Prepared by LSMS & EEAPV team.

    - Ask if the person worked as an unpaid apprentice, trainee or intern in the last 7 days
    - Ask if the person did volunteer work in the last 7 days
    - For those who worked on household agricultural activities, it is important to ask for the intended destination of output (whether they are only for sale/barter, mainly for sale/barer but some for own/family use, mainly for own/family use but some for sale/barter, or only for own/family use) to identify their employment status.
    - For those who did any kind of business or other activity to generate income in the last 7 days, ask if they were own-account workers, employers or members of producers' cooperatives.
    - If the person did not do any activity in the last 7 days, ask if the person has a job, business, or other economic or farming activity to return to. If yes, ask a reason for not working in the last 7 days, a total duration of absence and an intention to return to the same job in 3 months or less. Also, ask for a receipt of income during absence and tasks and duties performed during absence for seasonal jobs.
    - For those who did not do any activity in the last 7 days and do not have any job to return to, ask if they looked for a job in the last 4 weeks. If no, ask a reason for not looking for a job. Also, ask if the person is available to start a new job in next 2 weeks.
- Consider asking additional questions related to work and employment:
    - Types of employer
    - Hours of work
    - Type of contracts
    - Duration of contracts
    - Benefits (e.g. paid holidays, paid sick/maternity/paternity leave)
- Consider asking additional questions such as:
    - Illness and injury in the last 30 days
    - Health care utilization and expenditure in the last 30 days
- Are internal migrants included in the household roster? Consider asking for location of internal migrants

Part 2 Housing characteristics

- Q2. Consider separating the question into three questions to ask: material of external walls, material of floor, and material of roof.
- Consider asking the following questions related to the dwelling to calculate the SDGs indicator 11.1.1:
    - Documentation of the ownership
    - Proof of a tenure agreement
    - Compliance with local building codes
    - Location of the dwelling (geologically hazardous zones, garbage mountains, high-industrial pollution areas)
- Q7. Make sure that the number of rooms is the number of rooms that the household occupies.
- Consider adding more questions on electricity such as:
    - Main source
    - Number of hours electricity is available each day
    - Number of hours electricity is available from 6:00pm to 10:00pm

    - Number of blackouts/outages in last 7 days
    - Capacity and voltage fluctuations
- Q8. Consider adding more options to the answer category such as: Biogas, Animal waste/dung, Crop residue/plant biomass, Garbage/plastic, Coal, Ethanol, Coal briquette, Biomass briquette, Processed biomass/woodchips. Consider separating Gas to LGP and natural gas.
- Identifying the combination of fuel and technology (cook stove) used by households is important for the SDGs indicator 7.1.2. Consider asking questions related to stove used for cooking such as:
    - Type of stove
    - Location of stove/cooking
    - Presence of windows/chimneys/hoods/exhaust system
    - Injury with stove
    - Consider asking source of electricity, if on the public grid or generator
- Consider asking questions related to lighting fuel (important also for measuring the SDGs indicator 7.1.2).
- Consider asking additional questions related to water for monitoring some SDGs indicators (e.g. 6.1.1, 11.1.1):
    - Location of the water source
    - Distance to the water source
    - Availability of sufficient drinking water
- Q13. Modify the question or add a question to identify the method of excreta disposal (e.g. to a sewer system, a septic tank, a pit latrine or an open drain). For septic tanks and pit latrines, ask how and by whom they were emptied.
- Consider asking additional questions related to sanitation for monitoring some SDGs indicators (e.g. 6.2.1, 11.1.1):
    - Whether the toilet facility is shared by other households
    - Number of households sharing the facility
    - Location of the facility
    - Handwashing site with soap and water
- Q14 & Q15. For the items owned by the households, consider asking the following to obtain the consumption (use) value:
    - Number of items owned
    - Age of the (newest) item
    - Current value of the item
- Consider asking internet question separately, not as a follow-up question to home computer ownership.
- Q16. Modify the question or add a question with a reference period of 3 months which is used to calculate the SDGs indicator 17.8.1.

Part 3 Expenditure on goods and services

What are the recall periods used to collect expenditure data? It is recommended that various recall periods (7 days, 30 days, 3 months, 6 months and/or 12 months) are used depending on the frequency of purchase. For example, short recall periods (e.g. 30 days) should be used for frequently purchased items such as items under fuel, lighting and water supply. Long recall period (e.g. 12 months) should be used for major equipment (furniture, appliances, etc.).

The recommended recall period for food consumption is 7 days. It is recommended that, instead of broad food groups (such as meat, fish, and vegetables), the most common items for each basic food group are listed (such as chicken, beef, and tomatoes). The processed food such as bread, tomato paste, and canned fish.

What is the formulation of imputed housing?

SES3. Questionnaire of Household Income

Part 3 Farm Operation

- Land: Consider asking the following related to agricultural land:
    - Land ownership and documentation
    - Tenure security
- It is recommended to use different reference periods depending on the frequency of purchases and productions to reduce cognitive burdens on the respondents.
- Reference period for crop farming: It is recommended that the reference period used to collect data on crop farming covers one agricultural season. With the 12-month reference, the agricultural season that the respondents are referring to may be different when reporting the outputs and inputs. Depending on the timing of interviews, the inputs (expenditures) reported may be for the current agricultural season while the outputs (gross receiving) reported may be from the previous agricultural season.
- Q9. Consider asking the current total value of animals as well.

Part 4 income from other sources

Include more income sources related to social assistance and welfare such as the social welfare card, or other government transfers.

Annex B. Kyrgyzstan 2015 CALISS Migration Module

MODULE A: MIGRANTS

(1)	(2)		(3)	(4)		(5)		(6)		(7)			(8)	
Please list all household members who worked or are working abroad since January 2014?	What is [NAME'S] relationship to the household head?		How old is [NAME]?	Gender		What is the highest level of education that [Name] attended?		In what month and year did [NAME] leave the household to work abroad for the first time?		What was [NAME] doing when he or she left the household			What was the main occupation of [NAME] at the time of leaving the household?	
	HEAD	1												
	SPOUSE/PARTNER	2												
	SON/DAUGHTER	3												
	SON/DAUGHTER-IN-LAW	4												
	FATHER/MOTHER	5								WORKING	1			
	FATHER/MOTHER-IN-LAW	6				PRIMARY (Grades 1-4)	1			UNEMPLOYED	2	>>9		
	SISTER/BROTHER	7				BASIC (Grades 1-8(9))	2			STUDENT/PUPIL	3	>>9		
	GRANDCHILD	8				SECONDARY GENERAL (Grades 9-10(11))	3			HOUSEWIFE	4	>>9		
(Note this should be a list of current migrants including seasonal migrants, as well as return migrants)	GRANDPARENT	9				SECONDARY SPECIAL	4			RETIRED	5	>>9		
	NIECE/NEPHEW	10				SECONDARY TECHNICAL	5			HANDICAPPED	6	>>9		
	OTHER RELATIVE	11				HIGHER EDUCATION	6			MILITARY	7	>>9		
	NOT RELATED	12				GRADUATE SCHOOL/ASPIRANTURA	7			OTHER	8	>>9		
				MALE	1	DON'T KNOW	8						FORM 4 LFS OCCUPATION CODES	
				FEMALE	2									
PID		CODE	YEARS		CODE	LEVEL	GRADE	YEAR	MONTH		CODE		OCCUPATION	CODE

(9)		(10)		(11)		(12)	(13)	(14)		(15)		(16)
What was the main reason [NAME] migrated for work abroad during the latest episode?		What was the main source of funding of the latest migration episode?		Did [NAME] take any work related training course in order to improve her/his chances to find a job abroad?		Was this job pre-arranged before leaving?	Does/did [NAME] have legal residence status in the country?	What country does [NAME] currently live or lived in?		What is the current or last main occupation of [NAME]?		In the last 12 months how many months was [NAME] away from Kyrgyzstan?
		SALE OF HOME	1									
Household needed more money	1	SALE OF LAND	2	YES	1			RUSSIA	1			
		SALE OF OTHER ASSETS	3	NO	2			KAZAKHSTAN	2			
No job opportunities in the local economy	2	SAVINGS	4					OTHER CIS	3			
Obtain skills or professional experience	3	ASSISTANCE FROM FAMILY MEMBERS ABROAD	5	If yes was that training:				WEST EUROPE	4			
								EAST EUROPE	5			
To quickly accumulate money for family big event (wedding, celebration etc.) or to repay debt	4	ASSISTANCE FROM FAMILY MEMBERS IN KYRGYZSTAN		Technical (equipment, machinery, auto)	1			TURKEY	6	CODE TO BE FILLED IN BY SUPERVISOR		
			6	Language	2		YES 1	USA	7			
		LOAN FROM RELATIVE	7	Manual	3	YES 1	NO 2	OTHER	8			
To quickly accumulate money to open a business or purchase productive asset (land, machinery etc)	5	LOAN FROM FRIEND	8			NO 2	DK -9	DON'T KNOW	9			
		LOAN FROM OTHER	9			DK -9	REFUSAL -8					
		HELP FROM AGENT	10	Yes/No	Training	REFUSAL -8						
Other	6	OTHER (specify)	11									
	CODE		CODE	CODE	CODE		CODE	COUNTRY CODE		OCCUPATION	CODE	NUMBER of MONTHS