Description of Survey Waves and Sample Design

Executive Summary

This document contains a description of the TVSEP panel from 2007 to date. It includes a brief history of panel, a description of the sample design and a wave-by-wave record of the main features of the panel.

Panel History

The panel was implemented in 2007 as a research project funded by the German Research Foundation (DFG) with the aim to measure vulnerability to poverty in rural areas of emerging market economies, namely Thailand and Vietnam (see Klasen & Waibel, 2013). Therefore, the target population consisted of rural households whose per capita income was likely to be near (above or below) the poverty line and who lived in vulnerable environments, both in terms of the natural environment and their socio-economic conditions.

The TVSEP dataset comprises some 22,000 individuals, in 4,400 households, in 440 villages, in six provinces of Thailand and Vietnam. In Thailand, the provinces are Nakhon Phanom, Ubon Ratchathani and Buriram, all located in the North-eastern region. In Vietnam, these provinces are: Ha Tinh and Thua Thien Hue in the North Central Coast and Dak Lak in the southern part of the Central Highlands. One common feature of the provinces is that they border the neighbouring countries of Laos and/or Cambodia. The first survey was carried out in 2007, the most recent one in 2022.
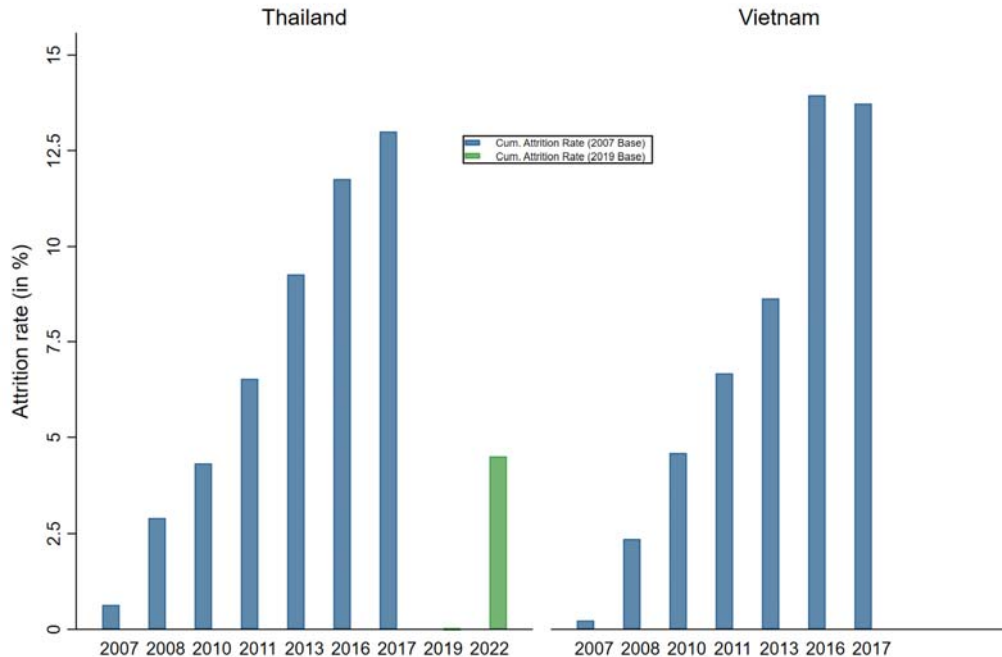
The survey instrument for the household questionnaire includes all components needed to measure household living standards. Detailed information is collected on all sources of income including agriculture, livestock, fishing, natural resource extraction, wage employment and self-employment. Modules on shocks and risks, borrowing and lending, behavioural traits of development and others complement the household survey. A village head questionnaire focused on village infrastructure has been implemented, albeit being conducted less frequently.

In addition to the rural households, their migrant members have been interviewed in the context of two migrant tracking surveys in 2010 and 2018 as well as in the context of a special Covid-19 survey in Thailand in 2021.

Summary

Among the 4,400 households that were sampled in 2007, 2,186 (99.36%) were interviewed in the first wave. As is to be expected, due to the longitudinal nature of the panels, response rates, i.e., the number of interviews conducted divided by the number of households still in the panel in the respective survey wave declined as the panel progressed. However, TVSEP's performance in terms of attrition is good. The average attrition rate between rounds was 3.73% in Thailand and 2.75% in Vietnam. The average annual attrition rate was 1.99% in Thailand and 1.14% in Vietnam, which is comparable to other longitudinal household surveys such as the German Socio-Economic Panel (Kroh et al., 2017), the British Household Panel Survey (Lynn & Borkowska, 2018) and panels based in the United States (Williams & Brick, 2018). Further, the wave-to-wave response rates of TVSEP are mostly above 95%, which is higher than in other comparable household surveys (Schoeni et al., 2013).

By 2017, the cumulative panel attrition rate had exceeded 10% of households in both countries, i.e., 13.0% in Thailand and 13.7% in Vietnam. Therefore, in 2019, a replenishment of the sample households was carried out. However, this could only be carried out in Thailand, whereas administrative constraints prevented this in Vietnam (see respective wave description below). In Thailand, attrition during the first survey after replenishing the sample in 2022 was around 5% (see Figure 1.). This rate exceeded that of earlier waves, however, is comparable to more recent survey waves that took place from 2016 onwards - both in TVSEP and other household panels, such as the World Banks' Integrated Household Panel Survey in Malawi (Moylan & Kilic, 2017) and National Panel Survey in Tanzania (World Bank, 2022a) or the Indonesian Family Life Survey (Strauss & Witoelar, 2022). Overall, the attrition rate in TVSEP can be characterised as low in comparison to other comparable surveys, which is not a trivial accomplishment considering the fifteen-year span of the panel and the challenges of data collection in rural populations of developing countries.

Figure 1: Overview – Cumulative attrition in TVSEP

Source: Authors' calculations.

1. Sample Design

The sample, consisting of provinces, sub-districts (Thailand), communes (Vietnam), villages and households, follows a three-stage sampling design. In the first stage, provinces were chosen purposively based on official statistics, that met the following criteria:

- Low average per capita income,
- high dependence on agriculture,
- existence of special risk factors such as remoteness and peripheral location along the country's border,
- poor infrastructure,
- risky conditions for crop production (drought, flood, storms).

In Thailand, three provinces in the north-eastern part of the country, namely Buriram, Ubon Ratchathani and Nakhon Phanom, were selected. In Vietnam, the three provinces are in the Central Region, ranging from the north central coast, i.e., Ha Tinh, and Thua Thien Hue to the southern part of the central highlands, i.e., Dak Lak (see Figure 2). These six provinces have in common that they are peripheral to the border with Laos

and/or Cambodia. They differ, to various degrees, with regards to their agro-ecological and agro-economic conditions, infrastructure, and their stage of development. Comparing the provinces allows drawing conclusions for regional development. The provinces can be taken as replicates to facilitate comparisons between the two countries.

Figure 2: Map of selected study provinces

Source: Hardeweg et al. (2013).

The sampling procedure consists of a 3-stage cluster sampling design. The initial total sample size was 4,400 households in both countries. These were drawn from 440 villages and 220 sub-districts or communes.

In Thailand, the primary sampling unit (1st stage) are the sub-districts (Tambons), whereby urban sub-districts or towns were excluded. The Tambons were stratified in more densely populated, i.e., peri-urban, and less densely populated, i.e., rural sub-districts. In order to ensure proportional coverage of the rural population, systematic random sampling based on a list ordered by population density/size (PPS) was applied.

In the 2nd stage, two villages per sub district were sampled with a probability proportional to size of population from each of the sampled sub-districts. The selection probability (p) for village v in sub-district s and stratum r is given by equation (1):

$$p_{rsv} = \frac{a_r \cdot b \cdot m_{rsv}}{\sum_s m_{rs}}$$ (1)

whereby: a_r is the size of the primary sampling unit in stratum *r*, b is the number of villages sampled in each sub-district, *mrs* and *mrsv* is the population size of sub-district and village, respectively.

At the third stage, a fixed size sample "c" of 10 households has been selected systematically from a list of households ordered by household size with equal probability of selection (EPS). The selection probability for households as shown by equation (2) leads to a constant probability of selection for all households if *ar* is determined proportionally to stratum size.

$$p_{rvh} = \frac{c}{m'_{rsv}} \cdot p_{rsv} = \frac{a_r \cdot b \cdot c}{\sum_s m_{rs}} \cdot \frac{m_{rsv}}{m'_{rsv}}$$ (2)

where *m'rsv* is the number of households from the household listing frame.

An overview of the sample design is given in Table 1.

Table 1: Overview of sample design in Thailand

Stage	Sampling unit	Selection criterion	Sampling probability
Target population	Province	Purposive selection: Border provinces in North-Eastern Thailand, low income, significant dependence on agricultural income and assumed risky environment.	-
1st	Sub-district	Provinces are constituted strata with approximately proportional sample size ar, PPS systematic random sample with implicit stratification by population density	$\dfrac{a_r \cdot m_{rs}}{\sum_s m_{rs}}$
2nd	Village	Simple random PPS sample of 2 villages from each sampled sub-district	$\dfrac{b \cdot m_{rsv}}{\sum_v m_{rsv}}$, b=2
3rd	Household	Equal probability of selection' (EPS) systematic random sample with implicit stratification by household size	$\dfrac{c}{m'_{rsv}}$, c=10

Sampling frames were obtained from two databases maintained by the Department of Community Development. First, a village-level database (NRC2D), which provided the measure of size at the sub-district and village levels as of 2005 and second a household database (BMN) of 2006 which was used as a listing frame for rural households. Secondary data for sampling in Thailand were available at the village level, and population density and agro-ecological conditions were assumed to be sufficiently homogeneous within the province. Therefore, the sample is self-weighting by design. Furthermore, the sampling ratios for the three provinces are well above the socioeconomic surveys of the Thai National Statistical Office (NSO 2008). The NSO cross-section survey for income, is carried out for rural and urban households, in all

Thai provinces, including Bangkok. The NSO survey includes some 52,000 households, both rural and urban (IHSN, 2022). This equates to an average of about 675 households per province for both urban and rural households. Since the overall ratio of urban to rural households is about 1.08, the TVSEP sample size is more than double that of the NSO survey. In the three TVSEP provinces, the sample size for rural households ranges from 400 in Nakhon Phanom to 960 in Ubon Ratchathani.

The average sample size per province of 733 households, both rural and urban, is less than one half of the average provincial sample size of TVSEP when comparing rural households between TVSEP and the NSO. The same is true for the Thai Townsend project (Binford et al., 2004) which reports a sample of 48 villages per province (TTTP, 2022). The project spans four provinces, one of them is the TVSEP province Buriram, where TVSEP has 84 villages in the sample.

In contrast to the sample from Thailand, the three Vietnamese provinces in the panel are quite diverse in terms of natural conditions. The most central province is Thua Thien Hue, with its capital Hue City. It was at the time of panel implementation the most developed among the three provinces. It shares a 128 km coastline with the South China Sea to the east and is bordering Laos in the west. The same is true for Ha Tinh, the most northern of the three TVSEP provinces whose coastline with the South China Sea spans 137 km. Ha Tinh has a long mountain range border with Laos and in 2007, it was the least developed among the three TVSEP provinces. The third province, Dak Lak, is the most southern of the TVSEP provinces, some 300 km north of Ho Chi Minh City. It is landlocked and located in the Central Highlands, and is distinct due to its high population of ethnic minorities, especially the Ede group, an Austronesian ethnicity. Dak Lak is known for its coffee plantations, dating back to the French colonial time.

To capture the heterogeneity in the sample design, strata were defined according to geographic and ecological conditions. In the two provinces of the northern part of the Central Highlands these were coastline, lowlands and uplands, while in Dak Lak only the two latter zones applied. In order to accommodate the low population density in the upland areas of these provinces, an absolute minimum sample size was fixed at 160 households per strata. For the first stage sampling units, i.e., the commune level (equivalent to sub-district in Thailand), no measure of size was available at the time of

sampling. Instead, the population share of the respective district was used for the weighting of commune selection. The selection probability of a commune is thus defined by the first fraction on the right side of equation (3)[1].

$$p_{rdsvh} = \frac{a_r \cdot m_{rd}^*}{N_{rd} \sum_d m_{rd}^*} \cdot \frac{2 \cdot m_{rdsv}^*}{\sum_v m_{rdsv}^*} \cdot \frac{10}{m_{rdsv}} \qquad (3)$$

At the second stage, villages were sampled with probability proportional to size based on population m*rdsv (see equation (3)). The third stage was again a systematic random sample drawn with equal probability from the village household lists ordered by household size. This is the recommended strategy for the last stage in clustered sampling in order to capture a maximum of variation within the cluster. Data for the local administrative units and household sample frames were taken from the Agricultural and Rural Census from 2006, which covered all rural households and was conducted by the Vietnam General Statistical Office.

The stratification applied in Vietnam included the specification of agro-ecological zones as analytical domains. Setting a lower bound to the absolute stratum sample size for the sparsely inhabited strata leads, to varying ranges of the selection probabilities of a household ranging from 0.147% to 5.85% (Table 2). As a consequence, analysis of the survey data that aim at generating information about the provincial situation, e.g., provincial vulnerability profiles, require a weighting procedure. The sampling ratios for the provinces are almost twice those obtained in the Vietnam Household Living Standard Survey (VHLSS). The VHLSS usually does not implement all of its modules in the survey instrument with the entire sample. For example, the most recent survey collected expenditure data from 30,000 rural and urban households in 61 provinces, i.e., around 490 per province (World Bank Microdata Library, 2022b). For other modules, 45,000 households were considered, i.e., on average around 740 households per province. As TVSEP is focused on rural households, its sample size is roughly twice that of the VHLSS in the three TVSEP provinces (World Bank Microdata Library, 2022c).

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[1] For explanation of symbols see equation 2

Table 2: Basic data of the target population and TVSEP household sample in Vietnam, 2005

Province/Strata	Rural Population	Population density (Pop./km²)	Pop. share (%) total	province	Sample allocation absolute	(%)	Selection probability range (%)
Dak Lak	**1,335,193**	**102**	**41**		**760**	**35**	
Rice plain	*452,982*	*64*		*34*	*260*	*34*	0.165 - 0.603
Mountainous area	*882,211*	*145*		*66*	*500*	*66*	0.164 - 1.766
Thua Thien – Hue	**788,763**	**156**	**24**		**720**	**33**	
Coastal area	*376,693*	*322*		*48*	*240*	*33*	0.224 - 1.074
Rice Plain	*357,612*	*179*		*45*	*240*	*33*	0.175 - 0.575
Mountainous area	*54,458*	*29*		*7*	*240*	*33*	0.624 - 5.85
Ha Tinh	**1,147,693**	**191**	**35**		**720**	**33**	
Coastal area	*567,609*	*246*		*49*	*360*	*50*	0.196 - 0.783
Rice Plain	*338,781*	*489*		*30*	*200*	*28*	0.171 - 0.536
Mountainous area	*241,304*	*80*		*21*	*160*	*22*	0.147 - 0.724
Total:	**3,271,649**				**2200**		

Source: Provincial Statistical Year Books 2005, General Statistics Office, Hanoi; own calculations.

2. Description of Survey Waves

2.1 Household Survey 2007

The first household survey was carried out from the end of April to the beginning of June in Thailand and from early June to early August in Vietnam. Table 3 below, summarizes the main features of the survey in 2007. The sequential scheduling of the survey implementation between the two countries was due to the intensive involvement of Leibniz University Hannover (LUH) headquarter staff in training and survey supervision. A four-day training started in Thailand for 36 interviewers prior to the Thai New Year (Songkran) holiday. In Vietnam, the training of 29 interviewers took place during the holidays in Thailand, so that the survey in principle could start about the same time. However, some administrative processes in Vietnam took more time so that the survey could only start in June. In the province of Dak Lak the survey lasted until August. Survey organisation also differed. In Thailand, provincial teams were formed with 20 interviewers, four sub team leaders and two data entry persons under the supervision of a provincial team leader. In Vietnam, six mobile teams with five interviewers each, supervised by a field leader and supported by a data entry person, were formed. Interviews were carried out using a paper and pencil interview (PAPI) approach and normally took between two to four hours. Provincial team leaders and sub-team leaders checked the questionnaires for completeness and logical errors prior to data entry.

The survey instruments included a comprehensive household questionnaire containing all livelihood measurements, i.e., assets, consumption and income. Further modules included household and household member characteristics, risks and shocks, borrowing and lending, government and insurance payments as well as some selected behavioural traits of development. In addition, a short village head questionnaire was administered. In the latter, questions about physical and social village infrastructure were asked.

The reference period for both countries for reporting information was 1 May 2006 to 30 April 2007. The reason for the choice of this reference period in the TVSEP project, is that it marks the agricultural year in the two countries, where rice planting starts around May with the onset of the rainy season. All information regarding income and consumption was related to this one-year reference period. In addition to the household

questionnaire, a 3-page village head questionnaire mainly referring to physical and social village infrastructure was administered.

Survey implementation was undertaken by means of a PAPI questionnaire and data were entered by specially trained data entry personnel in the field. Prior to data entry, questionnaires were checked by field supervisors in order to minimise errors. Attrition was low during the 1st survey wave, which is due the fact that, in addition to the ten households per village, a maximum of four possible replacements were allowed, should households on the list not be available for the interview. Thus, the planned sample fell short of fourteen households in Thailand and only five in Vietnam, i.e., response rates of 99.4% and 98.8% respectively. In both countries, over 10,000 individuals were captured in the data base.

Table 3: Basic Parameters of the 2007 Survey wave

Parameter	Thailand		Vietnam	
	Unit	Quantity	Unit	Quantity
Sample Size				
	Households	2,186	Households	2,195
	Individuals	10,627	Individuals	10,631
	Villages	220	Villages	220
Reference Period	Month/year	05/06 – 04/07	Month/year	05/06 – 04/07
Survey Period	Week/ month	04/04 - 01/06	Week/ month	02/06 – 02/08
Survey Mode	PAPI		PAPI	
No. of Interviewers	Persons	36	Persons	29
Local Partner	KU		IPSARD/CAP	
Response Rate	%	99.4	%	99.8

Note: KU = Kasetsart University; IPSARD = Institute for Policy and Strategy for Agriculture and Rural Development; CAP = Center of Agricultural Policy

Source: Own calculations.

2.2 Household Survey 2008

The survey in 2008 basically followed the same management approach as applied in 2007. Interviewer training was first conducted in Thailand prior to the Thai New Year holidays. The training took place at Kasetsart University (KU), TVSEP's collaborator in Thailand. The total duration of the training was five days, one day more than in 2007. In Vietnam, the training was carried out in Hanoi, in collaboration with the Institute of Policy and Social Studies for Agricultural Development (IPSARD), at the Centre of Agricultural Policy (CAP). The training was conducted between the 14th and 17th of April (see Table 5).

The survey in Thailand started at the end of April and was completed by early June. The survey in Vietnam took place from early June to early August with some differences among the three provinces due to administrative procedures.

The survey instrument was largely identical with 2007, with the exception that some questions on behavioural aspects of development, namely a survey risk item using an 11-point scale, were included. Also, no village head survey was administered.

Survey implementation followed the system applied in 2007, i.e., PAPI for data collection and data entry using laptops in the field. Prior to data entry, routine checking by field supervisors and random checks during the frequent field visits of LUH headquarter staff together with national coordinators were carried out.

Attrition was still low with 2.29 % in Thailand and 2.14 % in Vietnam, i.e., round about 50 households less in both countries. Hence, as shown in Table 4, 2,136 households and 11,049 individuals were sampled in Thailand and 2,143 in Vietnam as well as 10,744 individuals. The wave-to-wave response rate was 97.71% in Thailand and 97.86% in Vietnam.

It must be noted that the 2008 survey fell into the period of the global food price crisis. World food prices had already increased in late 2007, i.e., after the reference period of 2007 and therefore were not captured in the 2007 wave. However, dramatic increases in agricultural commodity prices occurred during the first quarter of 2008, which therefore were measured in the 2008 survey. To some extent, the price spikes affected data quality as the plausibility ranges specified in the data entry program were often no longer valid.

Table 4: Basic Parameters of the 2008 Survey wave

Parameter	Thailand		Vietnam	
	Unit	Quantity	Unit	Quantity
Sample Size				
	Households	2,136	Households	2,143
	Individuals	11,049	Individuals	10,744
Reference Period	Month/year	05/07 – 04/08	Month/year	05/07 – 04/08
Survey Period	Week/month	04/04 – 01/06	Week/month	04/06 – 01/08
Survey Mode	PAPI		PAPI	
No. of Interviewers	persons	51	persons	37
Local Partner	KU		IPSARD/CAP	
Response Rate	%	97.71	%	97.86

Note: KU= Kasetsart University; IPSARD = Institute of Policies and Strategies for Agriculture and Rural Development; CAP = Centre of Agricultural Policies

Source: Own calculations.

2.3 Household, Village and Migrant Survey 2010

The 3rd survey wave in 2010 differed substantially from the two previous waves. Firstly, new modules were added in the household questionnaire, i.e., an investment module, more details in the asset section, causal relationships between shocks, and a hypothetical risky investment question.

Secondly, a migrant tracking survey, using a separate questionnaire, was linked to the household survey. Hereby, TVSEP households in the villages were asked for address and phone number of their migrants and a representative of the rural household was asked to call his/her migrant(s). This information was relayed to a survey team in Bangkok and Ho Chi Minh City respectively, who undertook the migrant interviews. The migrant questionnaire contained questions regarding migration history, housing and living conditions in the city, wage and self-employment of the migrant, remittances sent or received, public transfers and insurance payments among others (please see survey instrument files).

Thirdly, in two provinces, namely Ubon Ratchathani in Thailand and Dak Lak in Vietnam, incentivized risk experiments were conducted immediately after the

household interviews, conditional on agreement by the respondents to participate. The data of the risk experiments are not TVSEP public goods but are the property of the researchers who designed and financed the experiments. However, papers that have emerged from this data set are included in TVSEP's list of publications.

In addition, a three-page village head questionnaire was implemented, basically following the items of the 2007 survey.

As regards the household survey implementation, the procedure largely followed those of previous waves. In Thailand, interviewer training for both, rural households and migrants, took place in Bangkok prior to Thai New Year. The rural household survey started by the end of April. The migrant survey started a few days later. The rural household survey largely went according plan and was completed in early June. Attrition was small with still 2,105 households and 11,569 individuals remaining in the panel. The migrant tracking survey turned out to be very challenging. From over 1,500 migrants in the household list in Thailand, only 659 could be interviewed. Logistical difficulties and time constraints of migrants, were major problems. Hence, the migrant survey took more time than planned and was completed by July.

In Vietnam, the training took place during the 2nd week of April in Hue City and the survey started thereafter with some variance in time among the provinces, due to differing administrative requirements. There 2,099 households with 11,108 individuals were interviewed. In the migrant survey, among the 1,200 migrants in the household list, 95 % were in HCMC and its four satellite provinces. However, only 299 respondents could be interviewed.

The village survey covered all 220 villages per country (see Table 6). As regards the organisation of the survey there are marked difference between the two countries. While in Thailand, the Kasetsart University remained the sole partner for both the rural household and migrant surveys, in Vietnam TVSEP had to engage with several partners. First, the Institute for Policy and Strategy for Rural Development (IPSARD) in Hanoi. They were in charge for the provinces of Ha Tinh and Dak Lak. Second, the Centre for Rural Development (CRD) at Hue University for the rural household survey in Hue province and third the Southern Center of Agricultural Policy (S-CAP) in Ho Chi Minh City for the migrant survey. Notably, the concept of provincial teams, as

practiced in Thailand since 2007, was adopted and the prior mobile team model was abolished.

Table 5: Basic parameters of the 2010 survey wave

Parameter	Thailand		Vietnam	
	Unit	Quantity	Unit	Quantity
Sample Size				
	Households	2,105	Households	2,099
	Individuals	11,569	Individuals	11,108
	Villages	220	Villages	220
	Migrants	659	Migrants	299
Reference Period	Month/year	05/09 – 04/10	Month/year	05/09 – 04/10
Survey Period	Week/month	04/04 – 01/07	Week/month	04/04 – 01/08
Survey Mode	PAPI		PAPI	
No. of Interviewers	Persons	50	Persons	45
Response Rate (rural)	%	98.55	%	97.72
Response Rate (migrant)	%	43.93	%	24.9
Local Partner	KU		CRD Hue/IPSARD/S-CAP HCMC	

Notes: KU = Kasetsart University; CRD = Center for Rural Development in Central Vietnam in Hue; IPSARD = Institute for Policy and Strategy for Rural Development in Hanoi; S-CAP= Southern Center of Agricultural Policy in HCMC

Source: Own calculations.

2.4   Household and Village Survey 2011

In 2011, the 4th survey wave was undertaken. However, it was only a partial survey carried out in two provinces, namely Ubon Ratchathani in Thailand and Thua Thien Hue in Vietnam.

In Thailand, the training took place from April 18 – 24 at Ubon Ratchathani University who became the new partner organisation for TVSEP. The survey was started after Thai New Year, as usual, and was completed during the last week of May. In Vietnam,

the survey started during the first week of May and was completed at the same time as in Thailand, due to fewer households being in the sample in the province of Hue.

In addition, a six-page Village Head Questionnaire (VHQ) with additional modules on economic and environmental conditions based on a rating scale was administered.

The survey was implemented without any major problems. The response rate of ~98% was similar to prior wave in spite of the shorter one-year interval between the previous survey in 2010.

Table 6: Basic Parameters of the 2011 Survey wave

Parameter	Thailand		Vietnam	
	Unit	Quantity	Unit	Quantity
Sample Size				
	Households	916	Households	672
	Individuals	5,211	Individuals	3,829
	Village	96	Village	74
Reference Period	month/year	05/2010 – 04/2011	month/year	05/2010 – 04/2011
Survey Period	Week/month	04/04 – 04/05	Week/month	01/05 – 04/05
Survey Mode	PAPI		PAPI	
No. of Interviewers	persons	20	persons	15
Response Rate	%	98.07	%	98.39
Local Partner	UBU		CRD Hue	

Notes: UBU = Ubon Ratchathani University; CRD = Center of Rural Development in Central Vietnam

Source: Own calculations.

2.5   Household and Village Survey 2013

The survey in 2013 was a regular household panel survey and hence the 5th wave was carried out in all six provinces in the two countries. The survey was carried out earlier than in previous waves because an add-on risk experiment study was planned immediately after the household survey. However, the project was later postponed to July 2013 due to technical and administrative constraints. Nevertheless, the reference period remained the same (see Table 7).

For the household survey, two additional modules were added to the household questionnaire, namely social networks and taxation. Furthermore, in the risk section questions on respondents' perception of climate change were added and in the crop section, labour hours were asked for the first time since the commencement of the panel. Finally, financial literacy questions, including calculus exercises to be performed by the respondents, were added to the questionnaire.

The village head questionnaire was the one used in 2011, but a module on taxation was added. The 2013 questionnaire was increased to 84 pages, as a result of the participation of the World Bank Office in Southeast Asia and the DFG Research Training Group (RTG) from Göttingen and Hannover, who requested specific additions to the questionnaire. Furthermore, the survey organisation and management had to be modified by bringing in more local collaborators. In Thailand, TVSEP cooperated with universities in the survey provinces, who provided students as interviewers. In Vietnam, an international research company covered the provinces of Ha Tinh and Dak Lak while the existing partner, CRD, facilitated survey permissions of Thua Thien Hue. The complexity of the collaborative arrangements made survey implementation more challenging with possible effects on data quality. Nevertheless, wave-to-wave response rates remained high and were around 95% (see Table 7).

Table 7: Basic Parameters of the 2013 Survey wave

Parameter	Thailand		Vietnam	
	Unit	Quantity	Unit	Quantity
Sample Size				
	Households	1,996	Households	2,010
	Individuals	11,710	Individuals	11,295
	Villages	220		220
Reference Period	Month/year	05/2012 – 04/2013	Month/year	05/2012 – 04/2013
Survey Period	Week/month	03/05 – 03/06	Week/month	04/03 – 01/05
Survey Mode	PAPI		PAPI	
No. of Interviewers	Persons	50	Persons	45
Response Rate	%	94.82	%	95.76
Local Cooperation Partners	UBU; NPU, BRU		CRD,IRC	

Notes: UBU = Ubon Ratchathani University, Nakhon Phanom University, BRU = Buri Ram Ratchapat University; CRD = Center for Rural Development in Vietnam; IRC = Indochina Research Company, Hanoi

Source: Own calculations.

2.6   Household Survey 2016

The 2016 household survey had two significant changes compared to previous waves. First, the survey period was shifted to July because of an effort towards an ASEAN-wide semester break period for universities. Secondly, the survey mode was changed to computer-assisted personal interviews (CAPI) (see Table 8). As a result, the training of interviewers and field leaders was increased to nine days in total with a three day team leader training and six day interviewer training.

In Vietnam, the training and survey started one week after Thailand in order to achieve a high supervision intensity by TVSEP headquarters.

In terms of contents of the survey instrument, the new sections added in 2013 were maintained. However, some questions were removed or modified and hence the questionnaire was reduced to 74 pages (print version). For example, no financial literacy questions or cognitive tests were implemented.

The village head questionnaire was the same as in 2013, except for the taxation module, which was omitted.

Overall survey performance was moderate which is perhaps due to the switch to the CAPI mode and the delayed survey period with possible effects on the memory bias.

For the first time since the panel started, the number of households interviewed dropped below 2,000 per country. The response rate was lower than before, especially in Vietnam. The increase in attrition (reduction in response rate) is perhaps attributable to the three- year gap to the 5th wave in 2013 and the change of the cooperation arrangement with the project partners, especially in Vietnam.

Table 8: Basic Parameters of the 2016 Survey wave

Parameter	Thailand		Vietnam	
	Unit	Quantity	Unit	Quantity
Sample Size				
	Households	1,941	Households	1,893
	Individuals	11,780	Individuals	11,091
Reference Period	Month/year	05/2015 - 04/2016	Month/year	05/2015 – 04/2016
Survey Period	Week/month	01/07 – 02/08	Week/month	02/07 – 03/08
Survey Mode	CAPI		CAPI	
No. of Interviewers	Persons	50	Persons	45
Response Rate	%	97.24	%	94.18
Local Partner	UBU		CRD/HUAF	

Notes: HUAF= Hue University of Agriculture and Forestry

Source: Own calculations.

2.7 Household Survey 2017

The 7th panel wave of the household panel followed the time frame of the previous year. Thus, there is an added value of the 2017 wave, as there are consistent data from two consecutive years. This opens up options for more research topics such as the analysis of carry-over effects, for example in agriculture (soil fertility, pest & disease effects, etc.), and shock effects whose impact lasts more than one year. The questionnaire, in principle, followed the design of the 2016 survey. However, a module on character traits was included, based on the popular "Big Five" model by Costa and McCrae (1997). The original English questions were translated and field tested in Thailand and Vietnam.

Survey performance in terms of households and individuals in the panel are shown in Table 9. The number of households remained rather constant or even increased as in the case of Vietnam, where some households that had dropped out of the panel in the previous year, were able to be interviewed. Therefore, the wave-to-wave response rate was high, even greater than 100 % in Vietnam. However, there was a large decline in household member information which dropped below 10,000 individuals in both

countries. In Thailand, 9,282 individuals were included and in Vietnam only 8,510 (Table 9). The decrease in average number of household members, i.e., 1.27 in Thailand and 1.38 in Vietnam indicates that nonresponse regarding household members had increased during the 2017 survey.

Another special feature of the 2017 wave was the implementation of an add-on research project on data quality measurements (Brooks et al., 2020). The project was run parallel to the household survey. Some questions were added to the household questionnaire which reached 84 pages again (as in 2013) and thus may have impacted, to some extent, non-sampling errors and data quality.

Table 9: Basic Parameters of the 2017 Survey wave

Parameter	Thailand		Vietnam	
	Unit	Quantity	Unit	Quantity
Sample Size				
	Households	1,914	Households	1,898
	Individuals	9,282	Individuals	8,510
Reference Period	month/year	05/2016 – 04/2017	month/year	05/2016 – 04/2017
Survey Period	week/month	04/06 – 01/08	week/month	01/07- 02/08
Survey Mode		CAPI		CAPI
No. of Interviewers		50		45
Response Rate	%	98,61	%	100.26[2]
Local Partner	UBU		HUAF	

Source: Own calculations.

2.8 Migrant Survey 2018

Experience from the 2010 combined household and migrant survey led to the decision to implement a separate migrant survey. Migrants in Thailand were mainly interviewed in the Greater Bangkok Area, while in Vietnam it was Ho Chi Minh City and its satellites as well as Da Nang City. Only a few migrants were in Hanoi. Migrants were

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[2] In each wave, TVSEP attempted to re-interview households that had previously been unable to participate in order to ensure continuity. Therefore, the response rate was > 100% in 2017.

interviewed by trained interviewers at their home or work place using a tablet-based questionnaire.

Again the overall response rate was disappointing. In Thailand, only 388 successful interviews could be carried out of a list of 998 migrants equivalent to a response rate of close to 40%. In Vietnam, 372 out of a total 692 migrants as identified from the household survey of 2017 were interviewed, which is equivalent to a response rate of almost 54%. In both countries, it is possible that there was underreporting of migrant household members when compared to the 2010 survey. The migrant questionnaire focused on migration history, job history, housing conditions, shocks, remittances, expenditures, and wealth. It also included questions on personality traits (the Big Five) and ICT knowledge and use.

The survey again showed that tracking rural migrants is increasingly becoming challenging in big cities due to the difficulties in locating them and arranging an interview. This might be due to their high opportunity costs of time, but also due to the lack of a hierarchical structure, as is the case in rural villages with a village head helping to organize the interviews.

Table 10: Basic Parameters of the 2018 Migrant survey

Parameter	Thailand		Vietnam	
	Unit	Quantity	Unit	Quantity
Sample Size				
	Migrants	388	Migrants	372
Reference Period	month/year	04/2015-03/2018	month/year	04/2015-03/2018
Survey Period	month/year	07/2018-09/2018		07/2018-09/2018
Survey Mode		CAPI		CAPI
No. of Interviewers		7		5
Local Partner	UBU		S-CAP HCMC	
Response Rate	%	38.8%		53.8%

Notes: S-CAP = Southern Center of Agricultural Policy; Ho Chi Minh City

Source: Own calculations.

2.9 Household Survey 2019

As attrition in the panel had exceeded 10% in both countries when the 2017 survey wave was completed, i.e., 13% in Thailand and 13.7 % in Vietnam, re-sampling and replenishment of the panel was undertaken to the initial 2,200 households for the 8th panel wave. This could only be done in Thailand because, in Vietnam, the survey could not be implemented in 2019. For undisclosed reasons, government permission for the survey was withdrawn prior to the start of the survey. Therefore, no replenishment of the panel was possible.

For panel resampling in Thailand, we compared the age structure of the remaining panel households with those of the respective total village populations and found no significant difference. Hence, we replenished the sample to the original ten households per village and kept all those households that were still in the panel since the beginning. In this way, longitudinal comparisons of individual households are possible, a feature that only few panels can offer.

In Thailand, the survey took place from end of June until early August 2019. All but one of the 2,200 households in the replenished panel, could be interviewed, i.e., equivalent to a response rate of 99.95 % (Table 11). Also, the number of individuals in the 2019 survey, had increased again, to an average household size of 4.85, higher than in 2017.

As in 2017, the survey period was July and August, i.e., two months after the end of the reference period with possible implications for memory bias. Other than that, survey implementation was without any major problems due to the effective work of the long-standing cooperation partner, UBU.

Table 11: Basic Parameters of the 2019 household survey

Parameter	Thailand	
	Unit	Quantity
Sample Size		
	Households	2,199
	Individuals	10,667
Reference Period	month/year	05/2018 – 04/2019
Survey Period	week/month	04/06 – 01/08
Survey Mode	CAPI	
No. of Interviewers	person	50
Response Rate	%	99.95
Local Partner	UBU	

Source: Own calculations.

2.10 Special Covid-19 Survey 2020

Rural Households

The original survey plan had been to implement the 9th household panel wave in 2020, in order to capture the carry-over effects between two consecutive waves, following the procedure of the 2016 and 2017 waves. However, due to the onset of Covid-19 in early 2020, health restrictions prevented the implementation of the survey in both countries. In Thailand, however, it became possible to undertake a special Covid-19 survey among all TVSEP households in the panel, during November and December 2020, after mobility restrictions had been lifted. The conduct of the survey was challenging, because the TVSEP team from LUH was unable to go to Thailand for the supervision of the survey due to international travel restrictions. All training and supervision had to be done via online formats.

The survey instrument was focussed on estimating the short-term impact of Covid-19 and the Government's related support schemes on the welfare of rural households in Northeast Thailand. Data were collected from 2,141 households and 220 village heads. As a reference period, the end of wave 8, i.e., May 2019 until October 2020 was

defined. The training and survey period lasted from the 2nd week of November until the 3rd week of December. Survey organisation differed from the regular household survey. Since the questionnaire was short, i.e., one interview took about 45 minutes, three-person interviewer teams were formed. Each team completed one village per day, hence up to 70 interviews were completed per day. The response rate of 97 % is in the order of those of the early waves of the panel (see Table 12a).

Table 12a: Basic Parameters of the 2020 COVID-19 household survey

Country/Parameters	Thailand	
	Unit	Quantity
Sample Size		
	Households	2,141
	Individuals	10,357
	Villages	220
Reference Period	month/year	05/19 - 10/20
	week/month	02/11- 04/12
Survey Mode	CAPI	
No. of Interviewers	persons	21
Response Rate	%	97.32
Local Partner	UBU	

Source: Own calculations.

Migrants

The migrant questionnaire is complementary to the special Covid-19 household survey and covers the reference period starting with 05/2019 until the date of the interview, i.e., mid July 2021. The migrant survey was conducted using phone interviews. Migrants were identified through the member section of the 2019 household survey. The total number was 2,149. Then households were called to confirm the status of the migrant and obtain the migrant's phone number. A total of 2,149 migrants were identified out of which 634 completed interviews were carried out, an overall "success rate" of 30.5 % (see Table 12b). The main reason for this low rate was that the migrants' telephone number could not be obtained. When the migrant number was available, the response rate was as high as 81 %, i.e., the willingness to cooperate in the interview by the respondents was high.

Table 12b: Basic Parameters of the 2021 COVID-19 migrant telephone survey

Country/Parameters	Thailand	
	Unit	Quantity
Sample Size		
	Migrants	634
Reference Period	Month/year	05/19 – 07/21
Survey Period	Week/month	01/04 – 02/07
No. of interviewers	Persons	3
Response Rate	%	30.5 (81)
Local Partner	UBU	

Source: Own calculations.

2.11 Household Survey 2022

The 9th household panel wave of the Thailand Vietnam Socio Economic Panel (TVSEP) was the first post-Covid-19 survey. Hence, in combination with the 2019 panel wave and the 2020 special survey, it provides an excellent basis for conducting impact assessment of Covid-19 in Thailand. It was also the first panel wave, since 2013, where the survey period was moved back to the original one, to correspond with the end of the reference period of the previous wave. This is assumed to reduce the memory bias. The survey instrument included new features, which were challenging for the interviewers. First, a GPS-based tool for actual plot measurements that allows, for the first time since the start of the database, the establishment of a plot panel. Also, with actual plot measurements, instead of respondents' subjective assessments. Thereby, accuracy in productivity measures can be improved. The second addition was a comprehensive Covid-19 module intended to facilitate in-depth impact assessment. Therefore, thorough training was given for the different levels of survey staff and the survey was conducted in close supervision by TVSEP headquarter staff.

The wave-to-wave response rate was high with 96%, which is remarkable given the occasional Covid-19 outbreaks and ongoing vaccination activities that were still taking place in the villages during the survey period.

Table 13: Basic Parameters of the 2022 household survey

Country/Parameters	Thailand	
	Unit	Quantity
Sample Size		
	Households	2,101
	Individuals	10,191
	Villages	220
Reference Period	Month/year	05/2021 – 04/2022
Survey Period	Week /month	01/05-01/06
interviewers	person	50
Survey Mode	CAPI	
No. of Interviewers	Persons	45
Response Rate	%	95.55
Local Partner	UBU	

Source: Own calculations.

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