



Interfacing Technology and Adolescent Women Nutrition: Occupational Determinants and Local Solutions

Thai Nguyen, January 22, 2022

Background

- Adolescence is an especially vulnerable time during the life cycle because:
 - They experience rapid physical and psychosocial development
 - They have the highest nutrient requirements
 - They are starting to solidify their food preferences and define their dietary patterns, which often carry through adulthood.
- Diet is closely related to the growing burden of non-communicable diseases (NCDs) and its consequences
- Adolescents are an ideal target group to improve diets before NCDs are a problem and create healthier diets to last a lifetime.



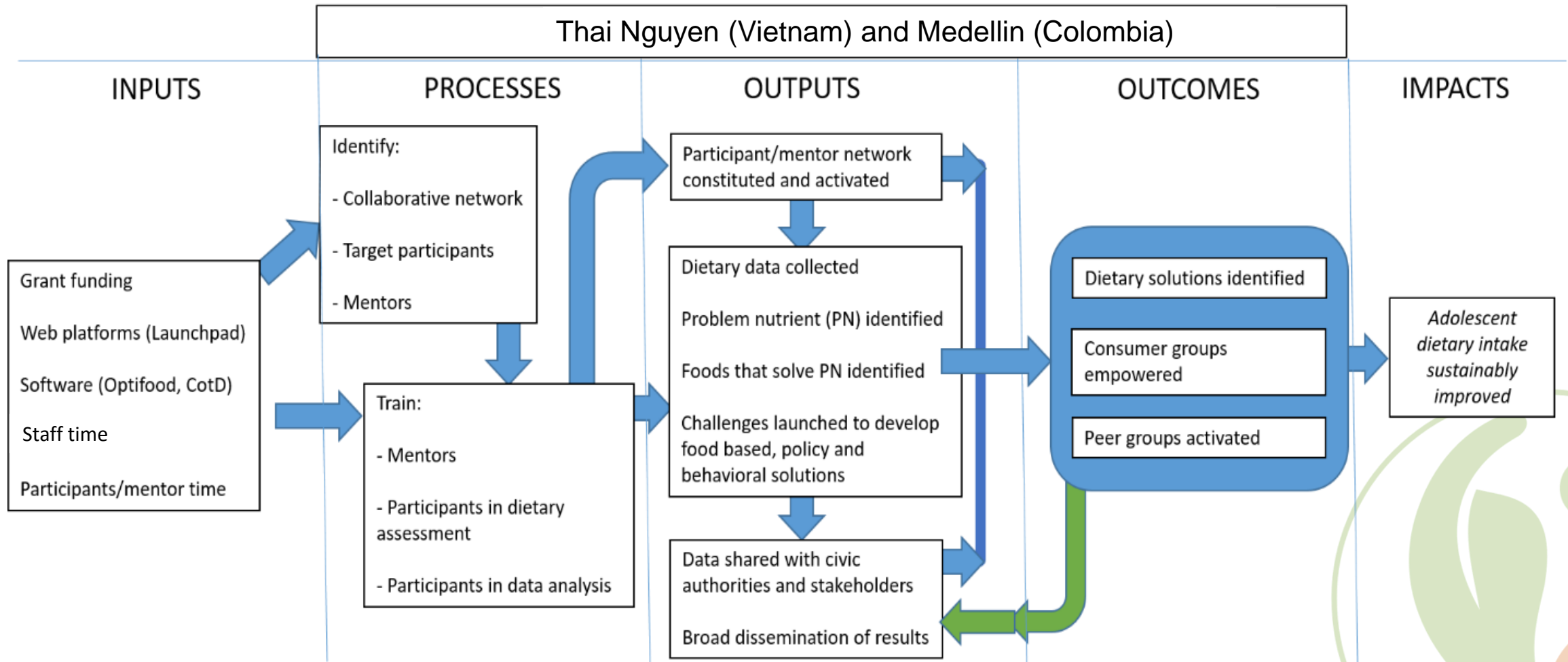
Objectives

- To identify nutritional deficiencies at the critical adolescent stage
- To gather data on the nutritional and occupational status of adolescent women, providing a starting point for deeper studies on the correlation between these factors
- To build networks of adolescent girls who are better informed about their nutritional status and dietary options, as well as empowered to influence change in the unbalanced diets of those around them
- To share relevant data and evidence that emerge from the nutrition models with relevant government officials to inform policy, practice, and data-driven decision-making
- To interface technology and data analytics with adolescent nutrition in an innovative, transformative, and exciting manner



Program theory and impact pathway

PROGRAM THEORY AND IMPACT PATHWAY



Main activities

Program design and planning

- Engage with local partners to tailor the program and engage adolescents
- Design the dietary and demographic questionnaires
- To test the app platforms

Data collection and constituent engagement

- Recruit 1000 adolescents from various backgrounds
- Collect diet data using web-based platform (INDDEX24)
- Collect data on demographic and healthy eating knowledge

- *Where can adolescents be reached?*
- *What are the typical dietary patterns?*
- *How does occupational/ educational status affect dietary quality and knowledge of healthy diets?*

Innovations and solutions

- Analyze data on three nutrition modeling tools
- Design an Innovation Challenge
- Engage adolescents in identifying innovative food solutions

- *What an ideal diet looks like?*
- *What nutrients are inadequate or excessive?*
- *What is the cost of a healthy diet?*
- *How much of the population can afford a healthy diet?*
- *What affordable, locally available foods can help fill the nutrient gaps?*

Setting- Thai Nguyen city, Vietnam

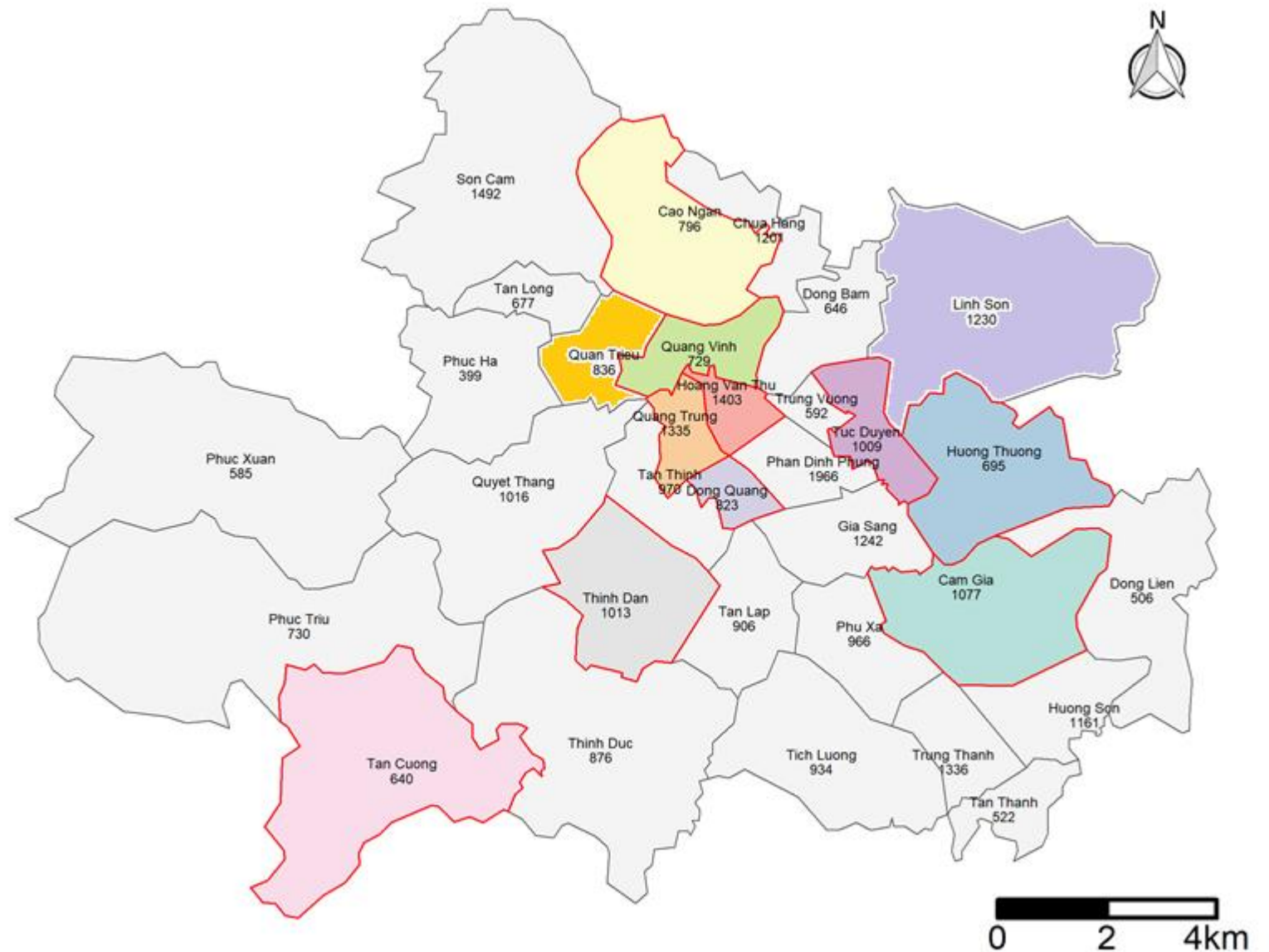
- Thai Nguyen province is in the northeast of Vietnam
- Total population as of 2019 was ~1.3 million; 420,000 live in Thai Nguyen City
- Female population aged 10-24: 30,309
- Population density varies greatly:
 - 72 inhabitants/km² in mountainous regions
 - 1,260 inhabitants/ km² in Thai Nguyen city
- Thai Nguyen is home to various ethnic groups. The largest ethnic groups are Vietnamese (70%), followed by Tày, Nùng, Sán Dìu and Sán Chay

Thai Nguyen



Distribution of females 10-24 years in Thai Nguyen city

- Thai Nguyen city has 32 communes
 - 21 urban communes
 - 11 peri-urban communes
- Each commune is divided by several wards
- Most girls <18 years are in school
- No existing data on occupation
- We selected 8 urban and 4 peri urban communes
- We visited all households in 12 communes to list adolescent girls 16-22 years and their occupation

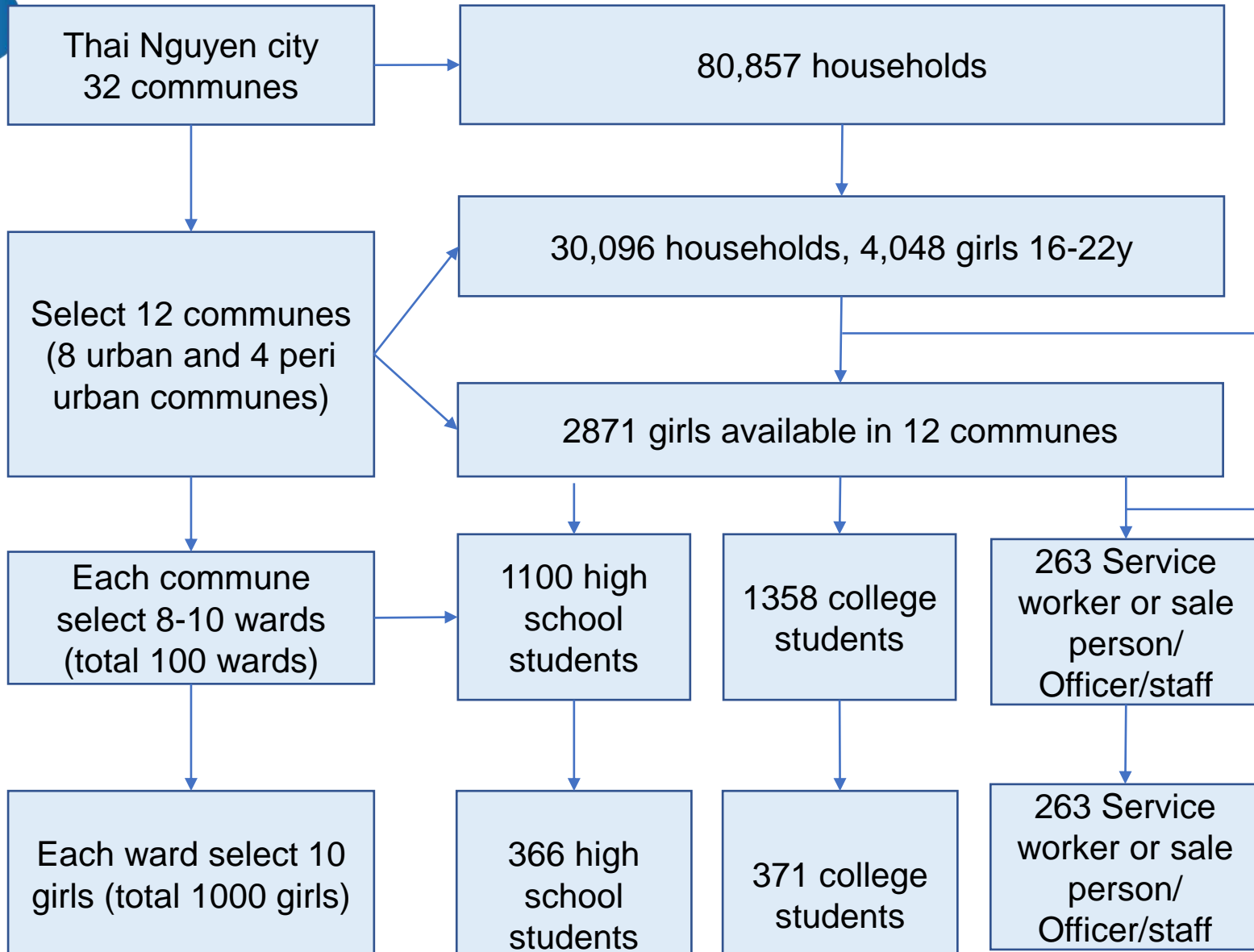


Formative research and sampling list

- Collaborate with Census Department of the City Department of Health
- Conduct household listing in 12 communes to collect information occupation for all girls 16-22y
- Create database for adolescent girls, stratifying by 3 types of occupation
- Selected 100 wards to collect maximum number of workers
- Selected 1000 participants based on the occupation
- Selected all workers in the wards
- Randomly selected high school and college students in each ward, balance sample between these two categories
- Create of sampling list for survey



Sampling plan



Selection criteria:

- Girls aged 16-22 years
- Not married
- Not pregnant
- Not yet have children

Excluded

- 263 cases married, have children
- 25 cases aged <16 or age >22 y
- 579 cases not currently live in the area
- 310 cases will not available between Nov 2021 – Jan 2022

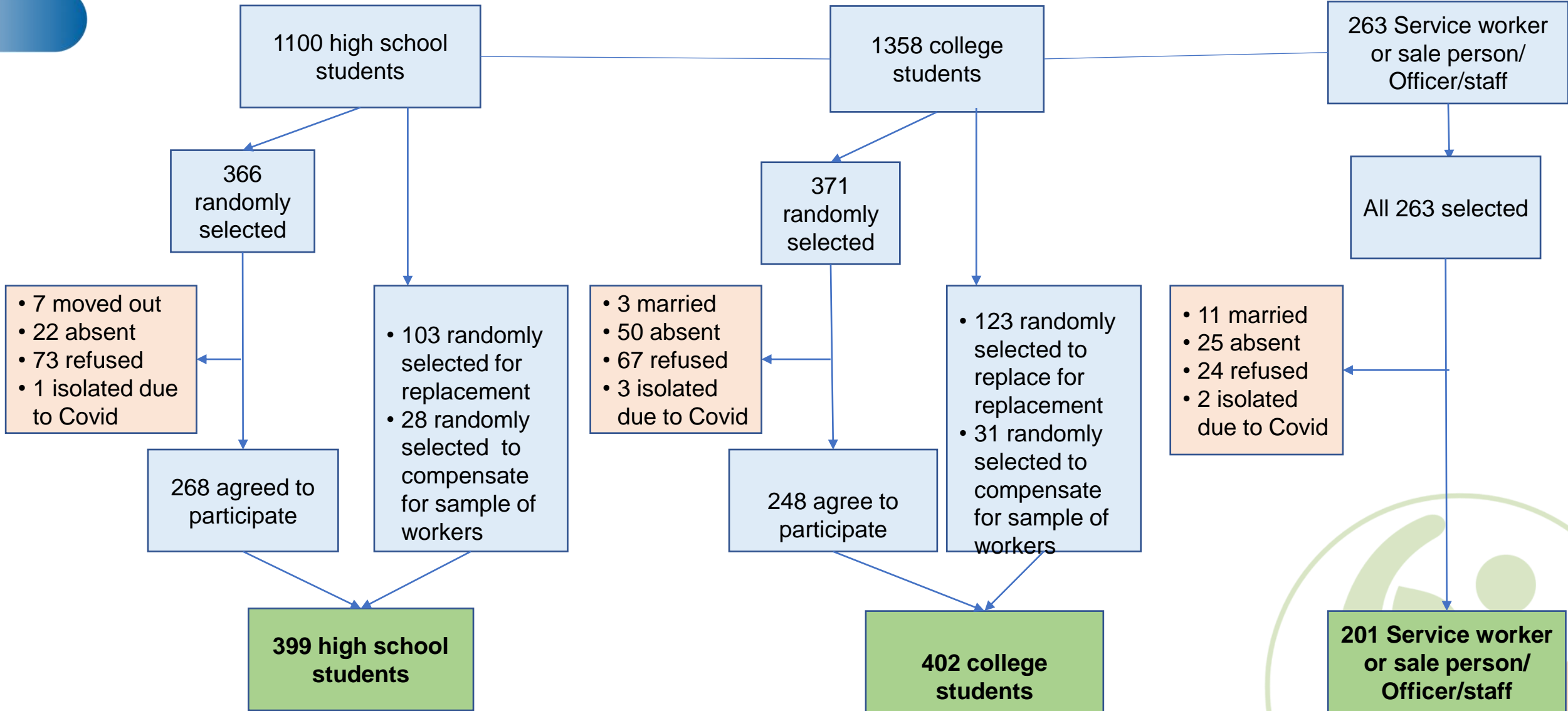
Excluded

150 farmers, housewives, maid, unemployed

Select all communes that has service workers, sale person, office staff

**Select all workers
Systematic random sampling
high school or college
students**

Actual sample achieved

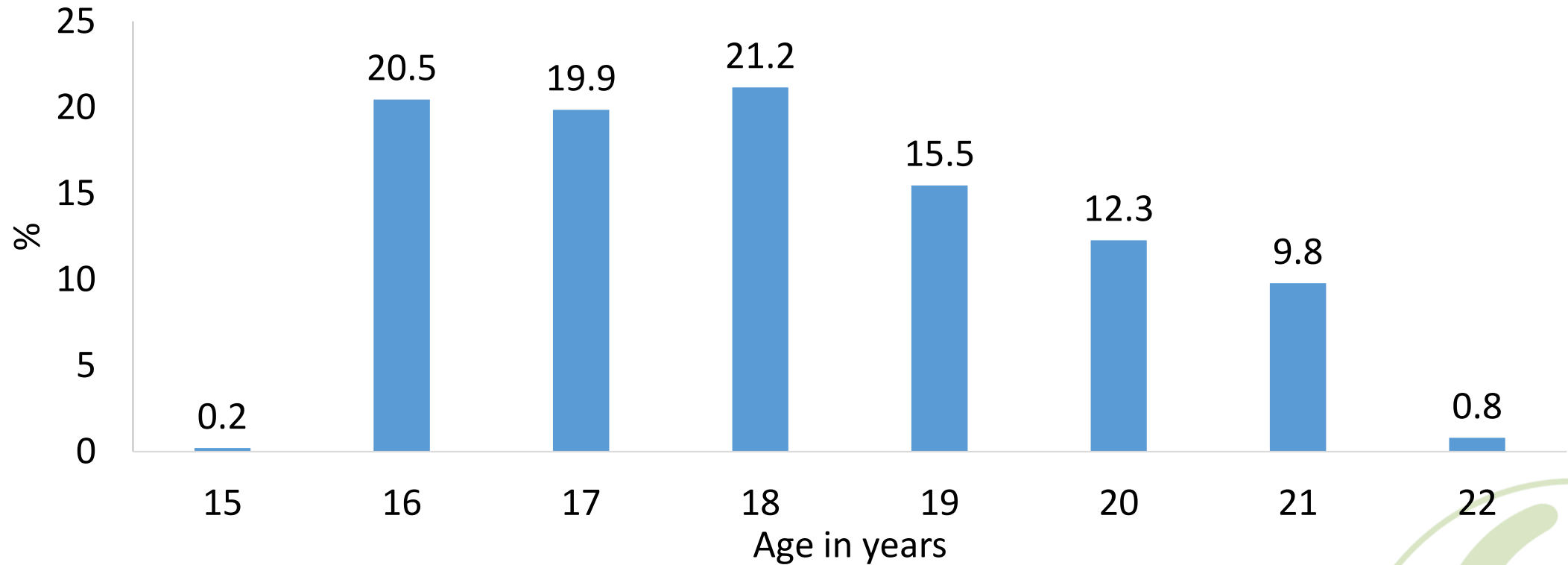


Total sample = 1,002. Overall replacement rate: 28.4%

Distribution of sample size by commune

Commune/ward	High school student	College student	Service worker or sale person/ Officer/staff	Total sample	Repeated 24-hour recall (10%)
Cam Gia	23	31	25	79	8
Cao Ngan	36	30	22	88	9
Dong Quang	37	35	1	73	7
Hoang Van Thu	41	39	5	85	8
Huong Thuong	30	29	22	81	8
Linh Son	37	19	42	98	9
Quan Trieu	29	49	4	82	8
Tuc Duyen	31	29	21	81	8
Thinh Dan	36	28	14	78	8
Tan Cuong	31	33	31	95	9
Quang Vinh	31	49	3	83	9
Quang Trung	37	31	11	79	8
Total	399	402	201	1,002	99

Respondents' age distribution



Sample (n)	2	205	199	212	155	123	98	8
------------	---	-----	-----	-----	-----	-----	----	---

Recalled day

Recalled day	Total		1st time		Repeat	
	n	%	n	%	n	%
Mon	153	13.9	129	12.87	24	24.24
Tue	113	10.3	105	10.48	8	8.08
Wed	121	10.99	102	10.18	19	19.19
Thu	105	9.54	88	8.78	17	17.17
Fri	218	19.8	204	20.36	14	14.14
Sat	296	26.88	285	28.44	11	11.11
Sun	95	8.63	89	8.88	6	6.06
Total	1101	100	1,002	100	99	100