

# The Survey on Assessing Climate Change Impacts and Support Needed in Schools

Fiscal Year 2025

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and Support Needed in Schools  
Fiscal Year 2025

Submitted to  
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Conducted by  
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National Institute of Development Administration

## Executive Summary

The Survey on Assessing Climate Change Impacts and Support Needed in Schools was undertaken to assess how schools across Thailand are affected by climate change and extreme weather, the support they have received, their readiness and capacity, and the assistance they still require.

The survey applied a quantitative methodology, with data collected through questionnaires sent by email and through field interviews with teachers in schools affected by climate change and extreme weather. Data collection took place in July–August 2025. A total of 329 schools were surveyed, comprising 315 public schools and 14 schools for disabilities group under the Office of the Basic Education Commission (OBEC). The survey covered schools in 14 provinces across four regions of Thailand, most of which had been among the provinces most affected by extreme weather events in the past three years:

- Northern region: Chiang Rai, Chiang Mai, Mae Hong Son, Tak, Lampang
- Northeastern region: Kalasin, Nakhon Ratchasima, Uttaradit
- Southern region: Phatthalung, Yala, Chumphon, Songkhla, Narathiwat
- Central/Eastern region: Prachuap Khiri Khan

Results show that all schools experienced at least one extreme weather event in the past three years, with heavy rainfall, storms and flooding (57.75%) being the most severe. The main impacts included restricted access to utilities and essential services (74.77%), adverse health effects on students such as illnesses from heat-related, vector-borne, and water-borne diseases (54.71%), and damage to school facilities (46.20%). Nearly half of the schools (49.85%) reported never receiving any assistance, while among those that received, the assistance received was mainly early warnings (41.21%), disaster preparedness trainings for teachers and students (35.15%), or emergency relief (33.94%).

Moreover, most schools expected heavy rainfall and flooding (65.96%) and heatwaves (53.80%) to become the more frequent and severe extreme weather events of concern in the future, with health risks to students (including illness, injury, and death) as the top concern (69%).

The survey results on School Readiness and capacity to cope with extreme climate events indicate more than half of the schools (52.58%) rated their current preparedness as “moderate.” The most urgent needs identified include training and learning activities for students (69%), teacher training on climate change and adaptation (62.92%), and the need for timely, reliable early warning information (60.18%). These needs varied across provinces. While 95% of schools have integrated climate change topics into teaching, over 80% of teachers have never received formal training on climate change and how to prepare for extreme weather events, relying mostly on self-learning. Students’ knowledge and understanding level remains low to moderate (85%). Schools for disabilities group showed higher support needs,

particularly for teacher training, modern learning materials and adequate teaching equipment, and budgetary support for environmental/climate change education (92.86%).

The survey confirms that extreme weather incidents have already caused widespread impacts on schools and students, particularly in terms of access to essential services, students' health and lives, and damage to school infrastructure. Alarming, nearly half of schools had never received any assistance. Priority needs identified include training or learning activities for students and teacher training, modern teaching and learning materials, and reliable and early warning information.

Although most schools had integrated climate change education, teachers lacked formal training and resources remained insufficient. There is therefore a clear need for relevant agencies to deliver targeted support for schools that are in need or at-risk.

## Foreword

This survey aims to collect information from teachers on schools' experiences with extreme weather incidents, the resulting impacts, assistance previously received from various agencies, items lacking and essential assistance needed in the future, as well as schools' readiness and capacity to cope with global warming and extreme weather incidents, particularly their effects on the health and lives of students. The data obtained will be used to inform the development of programs and projects to support students in schools across Thailand in adapting to and coping with global warming, extreme weather conditions incidents, and their impacts, both in the short and long term.

This survey employed a quantitative methodology, using field surveys and online questionnaires distributed via e-mail links (URLs) or by scanning QR codes. Respondents were invited to select options and provide information through the questionnaire. The survey was conducted between July and August 2025 and covered a total of 329 schools.

This survey was funded by UNICEF Thailand. The project greatly benefited from the participation of teachers in the surveyed schools, who generously shared their time, information, and perspectives. NIDA Poll expresses its sincere gratitude to all parties for their contributions.

NIDA Poll  
National Institute of Development Administration

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# The Survey on Assessing Climate Change Impacts and Support Needed in Schools Fiscal Year 2025

## 1. Rationale

Human activities worldwide—such as the use of energy and electricity, travel and transportation, food consumption, consumption of goods and waste disposal—require production processes and fossil fuel combustion, cultivation with fertilizer application, livestock raising, industrial production of raw materials and goods, and waste management. These processes release carbon dioxide and methane, among other greenhouse gases, into the atmosphere. Greenhouse gases allow sunlight to pass through to the Earth’s surface while trapping heat, thereby causing the average surface temperature to rise—this phenomenon is known as global warming.

Rising temperatures are significantly altering the five components of the Earth’s climate system—hydrosphere, cryosphere (e.g., glaciers, ice sheets, snow cover), geosphere, atmosphere, and biosphere. Examples include polar ice melting and rising ocean levels. Compared to the past 30–100 years, the climate is changing substantially, leading to more frequent and extreme weather incidents worldwide, such as:

1. Heatwaves or prolonged extreme heat;
2. Prolonged extreme cold conditions;
3. Severe drought conditions, with no rainfall and ongoing water scarcity;
4. Heavy rainfall and storms leading to floods or landslides.

Such extreme weather incidents cause diverse impacts, including acute shortages of drinking water and food, health and livelihood risks for humans, and extensive damage to property and natural resources.

Children in schools across Thailand represent the nation’s future. They are a highly vulnerable group, unprepared to cope with global warming, extreme weather, and their impacts—which are projected to intensify and become more frequent. At the same time, children are a key group for reducing greenhouse gas emissions.

UNICEF (2021), in its report “Over the Tipping Point,” projected that over 93.9% of Thai children will face risks associated with climate change: 5,900,000 children are at risk from heatwaves; 2,860,000 children are at risk from floods; 1,140,000 children are at risk from coastal flooding; and 13.57 million children face risks from air pollution (PM2.5). In addition, UNICEF Thailand’s October 2022 report “Impact Assessment of Climate Change and Environmental Degradation on Children in Thailand,” conducted by the Thailand Development Research Institute (TDRI), assessed climate change impacts on children in Thailand using historical data and projections. It forecasts that from 2016 to 2035 children in the Northeastern and Southern regions of Thailand are at high risk from drought, heatwaves,

and floods. Climate change also affects essential child-related services, including schools, hospitals, and others.

To better understand the real impacts of climate change on schools, teachers, and students - and to identify the support schools have received and still need - UNICEF Thailand and NIDA developed this survey and questionnaire. The objectives are to gather teachers' perspectives from a wide range of schools across the country on:

**Past experiences** with extreme weather incidents, including the resulting impacts and any assistance previously received from various agencies;

**Future risks and needs**, such as extreme weather events expected to become more frequent or severe, the shortages schools anticipate, and the assistance required to strengthen their preparedness; and

**Schools' readiness and capacity in education** to help students adapt to and cope with extreme weather - particularly in relation to impacts on students' health, safety, and well-being.

The findings will enable UNICEF Thailand, a United Nations agency mandated to protect the rights of children in Thailand, to inform policies and programme planning that promote the education sector's adaptation to and management of global warming, extreme weather incidents, and their impacts in both the short and long term.

In this connection, the "NIDA Poll" developed and applied the above-mentioned questionnaire to collect data and opinions from schools throughout Thailand, and the present report consolidates and presents the survey findings.

## 2. Objectives

2.1 To survey the extreme weather incidents associated with climate change that schools have experienced over the past three years, including the impacts and damages incurred and any assistance received from relevant agencies.

2.2 To survey the extreme weather incidents that schools expect will occur more frequently and more severely, along with the shortages and assistance needs in the future, as well as schools' current state of readiness to cope with such events going forward.

2.3 To survey schools' readiness and capacity in education to support students to adapt to and cope with global warming and extreme weather incidents, particularly regarding impacts on students' health and lives.

2.4 The information will inform guidelines and policies at school, area, and national levels to prevent and mitigate potential impacts on students and schools (e.g., impacts on student health and on teaching and learning). It will also support policy and programme development to promote adaptation to global warming, extreme weather incidents, and related impacts in the education sector over the short and long term.

### 3. Scope of Work

Survey on the Impacts of Climate Change Experienced by Schools and the Assistance Required to Cope with Extreme Weather Incidents, Fiscal Year 2025 encompasses the following scope:

#### 3.1 Population scope

The survey targets schools under the Office of the Basic Education Commission (OBEC). Data were collected from 1–3 teachers per school, specifically those who teach Science/Social Studies/Health Education, or teachers responsible for environmental education or who play a role in organizing environmental learning. Schools are divided into two categories:

- 1) Public schools under OBEC at both primary and secondary levels;
- 2.) Schools for disabilities group under the Office of Special Education (under OBEC), covering four types of disability: intellectual, hearing, visual, and physical impairments.

#### 3.2 Content scope

1) Extreme weather incidents associated with climate change experienced by schools over the past three years, including the impacts and damages incurred and assistance previously received from various agencies.

2) Extreme weather incidents that schools expect to occur more frequently and more severely, including lack of utilities, essential goods, and services and assistance needed in the future, as well as schools' current readiness to cope.

3) Schools' readiness and capacity in education to support students to adapt to and cope with global warming and extreme weather incidents, especially regarding impacts on students' health and lives.

#### 3.3 Geographic scope

The survey was conducted 14 provinces in four regions of Thailand, and these provinces and specific districts were among the most affected by extreme weather in the past 2-3 years based on Department of Disaster Prevention and Mitigation (DDPM) and The Meteorological Department. The provinces are as follows: Kalasin (17 districts), Chiang Mai (22 districts), Narathiwat (13 districts), Chiang Rai (14 districts), Yala (8 districts), Lampang (13 districts), Chumphon (8 districts), Uttaradit (9 districts), Nakhon Ratchasima (7 districts), Mae Hong Son (1 district), Tak (1 district), Prachuap Khiri Khan (8 districts), Songkhla (16 districts), and Phatthalung (11 districts). The criteria for selecting the 14 provinces were as follows:

- 1) Provinces with the highest annual maximum temperatures in Thailand and with sustained high temperatures for many days from March to May over the past 2–3 years (including provinces with the historically highest recorded temperatures), based on Thai Meteorological Department data for 2022–2024;

2) Provinces with the top five cumulative numbers of people affected by drought over the past 2–3 years, based on DDPM data for 2023–2024;

3) Provinces with the highest cumulative number of people affected by cold spells over the past 2–3 years (based on reported provinces), as per DDPM data for 2023–2024; and

4) Provinces with the top seven cumulative numbers of people affected by heavy rainfall and flooding over the past 2–3 years, based on DDPM data for 2023–2024.

In addition, Seven out of fourteen provinces include Mae Hong Son, Tak, Kalasin, Nakhon Ratchasima, Songkhla, Yala and Narathiwat also overlapped with those identified by UNICEF’s Multiple Indicator Cluster Survey 2022 Report of 12 Selected Provinces (MICs 2022) from an equity perspective, either among the poorest provinces or those with limited access to quality social welfare and healthcare.

### 3.4 Timeframe

The survey was conducted during July–August 2025, and the final survey report is to be submitted within 90 days following the date of signing the contract.

## 4. Survey Methodology

### 4.1 Sample Size

UNICEF Thailand stipulated a minimum total sample size of 264 schools, divided into two groups:

1) Public schools Under OBEC (primary and secondary) from the 14 designated provinces and specific districts—not fewer than 250 schools in total;

2) Schools for disabilities group covering four disability types—hearing, visual, physical, and intellectual—from the schools for disabilities group located within the 14 surveyed provinces

### 4.2 Sampling

#### Group 1: Teachers in Public schools under OBEC

A multi-stage random sampling approach was used:

**Step 1** – Province selection: Purposive sampling. UNICEF Thailand determined the 14 provinces according to the criteria outlined in Section 3.3.

**Step 2** – Number of schools per province: Quota sampling. The research team proposed to allocate the percentage share of schools to be surveyed in each province in proportion to the number of schools located in districts that experienced extreme weather incidents, relative to the total number of such schools across all 14 provinces (Section 3.3), targeting 250 schools overall.

**Step 3** – Number of teachers per school: UNICEF Thailand proposed to interview 1–3 teachers per school in Science/Social Studies/Health Education, or those responsible for environmental education or with roles in environmental learning (see Table 1).

**Table 1** Number of Samples and Number of Schools to Be Surveyed According to Quotas, Disaggregated by Province

Province	Number of Schools Located in Areas Affected by Extreme Weather Incidents	Percentage	Number of Schools Surveyed
Kalasin	300	12.16	30
Chiang Mai	203	8.23	21
Narathiwat	323	13.09	33
Chiang Rai	196	7.94	20
Yala	217	8.79	22
Lampang	144	5.83	15
Chumphon	123	4.98	12
Uttaradit	88	3.57	9
Nakhon Ratchasima	57	2.31	6
Mae Hong Son	18	0.73	2
Tak	32	1.30	3
Prachuap Khiri Khan	96	3.89	10
Songkhla	458	18.56	46
Phatthalung	213	8.63	21
<b>Total</b>	<b>2,468</b>	<b>100.00</b>	<b>250</b>

### Group 2: Teachers in School for Disabilities Group

Purposive sampling was used. UNICEF Thailand selected schools for disabilities group across four disability types (hearing, visual, physical, intellectual). According to the Office of Special Education (under OBEC), there are currently 53 schools for disabilities group. Among these, 14 schools in 9 provinces fall within the survey provinces identified under the criteria in Section 3.3. For each participating school, 1–3 teachers were interviewed — those teaching Science/Social Studies/Health Education or those engaged in environmental education/learning (see Table 2).

**Table 2** Number of Samples and Schools to be Surveyed, Disaggregated by Type of Disability

Disability Type	Province	Name of School
Visual impairment 1 schools	Chiang Mai	Northern School for the Blind under Royal Patronage, Chiang Mai Province
Hearing impairment 4 schools*	Chiang Mai	Anusarnsunthorn School for the Deaf, Chiang Mai Province
	Tak	Tak School for the Deaf
	Prachuap Khiri Khan	Theparat School for the Deaf
	Songkhla	Songkhla School for the Deaf

**Table 2 (cont.)** Number of Samples and Schools to be Surveyed, Disaggregated by Type of Disability

Disability Type	Province	Name of School
Physical disabilities 2 schools	Chiang Mai	Srisangwan School, Chiang Mai Province
	Yala	Special Education School in the Southern Border Provinces Administrative Centre Area
Intellectual disabilities 7 schools	Chiang Mai	Kawila Anukool School, Chiang Mai Province
	Chiang Rai	Chiang Rai Panyanukul School, Chiang Rai Province
	Kalasin	Kalasin Panyanukul School
	Chumphon	Chumphon Panyanukul School
	Tak	Tak Special Education School
	Nakhon Ratchasima	Nakhon Ratchasima Panyanukul School
Songkhla	Songkhla Patthana Panya School	

**Remark:** Four schools for students with hearing impairments also have students with other types of disabilities enrolled.

## 5. Instruments and Instrument Quality Assurance

### 5.1 Instrument

The instrument used was a questionnaire, addressing teachers' views on the impacts of climate change on schools and students in Thailand, in line with the content scope. The questionnaire comprised:

- 1) A checklist to collect general information and teachers' views on climate change impacts on schools and students in Thailand (with predefined response options);
- 2) Open-ended items enabling respondents to express views freely beyond predefined options (e.g., to identify agencies providing assistance before, during, or after extreme weather incidents).

The questionnaire used in the survey is presented in the Annex.

### 5.2 Instrument Quality Assurance

Content validity was assessed by experts who evaluated the alignment of each item with the objectives. Scores from each expert were combined to calculate the Index of Item-Objective Congruence (IOC). An IOC value of 0.50 or higher is acceptable (Laddawan Phetrot and Atchara Chamniprasat, 2004). Under this criterion, the questionnaire is considered of sufficient quality for data collection. Experts scored each item on a three-point scale:

- +1 = Consistent/confident the item measures the objective
- 0 = Uncertain whether the item measures the objective
- -1 = Inconsistent/confident the item does not measure the objective

Formula for calculation:

$$\text{IOC} = \frac{\sum R}{N}$$

- IOC = Index of Congruence between Items and Objectives (IOC)  
 $\sum R$  = Sum of experts' scores  
N = Number of experts

Accordingly, the researcher submitted the questionnaire to three experts for review to verify the accuracy, content validity, and adequacy of the items, and revised ensure its quality before actual use.

## 6. Data Collection

Data was collected through field surveys (face-to-face interviews), telephone interviews, postal questionnaires for self-completion, and online questionnaires distributed via URL or QR code, as appropriate, prioritizing accessibility to respondents and internationally reliable academic standards.

Using these methods, the research team collected data from public schools and schools for disabilities group under OBEC in the 14 provinces, achieving a total of 329 schools, exceeding the quota target of 264 schools set in Section 5.1. Comparing the percentage distribution by province between the quota and the actual number of schools surveyed across the 14 provinces, the variance was within  $\pm 5\%$ , which is acceptable. Details are shown in Table 3.

**Table 3** Comparison of schools in the 14 provinces: quota vs actual surveyed

Province	Number of schools based on the quota		Number of schools actually surveyed		Difference (%)
	Number	Percent	Number	Percent	
Mae Hong Son	2	0.76	4	1.22	0.46
Chiang Rai	21	7.95	34	10.33	2.38
Chiang Mai	25	9.47	28	8.51	-0.96
Tak	5	1.89	8	2.43	0.54
Lampang	15	5.68	24	7.29	1.61
Uttaradit	9	3.41	17	5.17	1.76
Kalasin	31	11.74	32	9.73	-2.02
Nakhon Ratchasima	7	2.65	8	2.43	-0.22
Prachuap Khiri Khan	11	4.17	14	4.26	0.09
Chumphon	13	4.92	18	5.47	0.55
Songkhla	48	18.18	49	14.89	-3.29
Phatthalung	21	7.95	32	9.73	1.77
Narathiwat	33	12.50	37	11.25	-1.25
Yala	23	8.71	24	7.29	-1.42
<b>Total</b>	<b>264</b>	<b>100.00</b>	<b>329</b>	<b>100.00</b>	

**Note:** The survey covered 329 schools across 14 provinces, with a total of 661 participating teachers — including 627 teachers from public schools under OBEC and 34 teachers from schools for disabilities group. UNICEF Thailand and the researchers jointly established rules to aggregate teacher responses into one school-level response for analysis. Depending on the item, aggregation may use: the highest numerical option, the average, the qualitative option selected by the majority of teachers in that school, the median, or all selected options (for multiple-response items). The choice of rule depends on the appropriateness for each question.

## 7. Quality Control

The NIDA Poll at the National Institute of Development Administration places strong emphasis on quality at each stage:

### Step 1 Data Collection

1) Enumerator selection: All enumerators have at least two years of data collection experience and have completed no less than six months of probationary fieldwork with NIDA Poll.

2) Team and enumerator training: Upon approval of the data collection instrument, NIDA Poll conducts training to clarify the objectives, sample characteristics, and questionnaire details.

3) Monitoring and management: A central team oversees the data collection timeline and conducts on-site verification.

4) Quality control: After collection, a quality control officer checks the data for accuracy and completeness before handing it to the analysis team, which performs a secondary validation using statistical software prior to processing.

### **Step 2 Data Verification and Processing**

- 1) Completeness and consistency checks are conducted for every questionnaire.
- 2) Coding and data entry are verified, and statistical software is used for processing.
- 3) Statistical techniques are selected based on the survey objectives and data suitability.

**Note:** Where more than one teacher per school responded, UNICEF Thailand and the researchers jointly established rules to aggregate teacher responses into one school-level response for analysis. Depending on the item, aggregation may use: the highest numerical option, the average, the qualitative option selected by the majority of teachers in that school, the median, or all selected options (for multiple-response items). The choice of rule depends on the appropriateness for each question.

### **Step 3 Data Analysis and Report Writing**

- 1) Statistical methods are selected according to the survey objectives and data suitability.
- 2) Analysis and report writing are undertaken by NIDA Poll statisticians, who verify the accuracy and completeness of the analysis and narrative.
- 3) Proofreading of the final report and the executive summary is conducted to ensure compliance with Royal Institute standards for Thai language usage.

## **8. Data Analysis**

Data were analyzed using statistical software, employing descriptive statistics including frequency distributions and percentages, and other relevant statistics as appropriate to the data.

## **9. Study Limitations**

Teachers may have had different experiences with extreme climate events, as teachers in the same school may have relocated at different times, and schools may have faced varying hazards over different periods. These differing experiences may have influenced the variation in responses.

## **10. Survey Results**

The Survey on the Impacts of Climate Change Experienced by Schools and the Assistance Required to Cope with Extreme Weather Incidents, Fiscal Year 2025 collected data from a total of 329 schools affected by climate change. This comprised 315 public schools under the Office of the Basic Education Commission (OBEC) and 14 schools for disabilities group, covering the following provinces:

**Table 4** Number and Percentage of Schools Surveyed in Each Province, Disaggregated by Type of School

Province	Type of School				Subtotal	
	Public schools under OBEC		Schools for Disabilities Group			
	Number	Percent	Number	Percent	Number	Percent
1) Songkhla	47	14.92	2	14.29	49	14.89
2) Narathiwat	37	11.75	0	0.00	37	11.25
3) Chiang Rai	33	10.48	1	7.14	34	10.33
4) Kalasin	31	9.84	1	7.14	32	9.73
5) Phatthalung	32	10.16	0	0.00	32	9.73
6) Chiang Mai	24	7.62	4	28.57	28	8.51
7) Lampang	24	7.62	0	0.00	24	7.29
8) Yala	23	7.30	1	7.14	24	7.29
9) Chumphon	17	5.40	1	7.14	18	5.47
10)Uttaradit	17	5.40	0	0.00	17	5.17
11)Prachuap Khiri Khan	13	4.13	1	7.14	14	4.26
12)Tak	6	1.90	2	14.29	8	2.43
13)Nakhon Ratchasima	7	2.22	1	7.14	8	2.43
14)Mae Hong Son	4	1.27	0	0.00	4	1.22
<b>Total</b>	<b>315</b>	<b>100.00</b>	<b>14</b>	<b>100.00</b>	<b>329</b>	<b>100.00</b>

Accordingly, the researchers have presented the survey findings in four parts, as follows:

10.1 General Information on Respondents and Schools.

10.2 Experience of Extreme Weather Incidents by Schools over the Past Three Years and Assistance Received in the Past

10.3 Schools' Anticipated Experience with Extreme Weather Incidents in the Future and Essential Support Needed to Cope with Future Extreme Weather Incidents

10.4 Schools' Readiness and Educational Capacity to Cope with Extreme Weather Incidents

10.5 Results of the Comparative Analysis of Schools in Each Province (Considering Only Schools in Districts that Have Experienced Disasters According to the Criteria Stated in Section 3.3) Based on Comparisons of 14 Provinces

10.6 Results of the Overall Analysis (Focusing on Schools' Readiness and Educational Capacity to Cope with Extreme Weather Incidents): Comparisons between Public Schools and Schools for Disabilities Group under OBEC

## 10.1 General Information on Respondents and Schools

### 1) Overall Information based on Teachers' Own Data

From this survey, the majority of teachers providing information were female (61.40%), followed by male (36.75%), with a small proportion identifying as LGBTQI+ (1.52%). Teachers were most commonly aged 31–40 years (38.60%), followed by 41–50 years (27.66%), 21–30 years (17.63%), and 51–60 years (16.11%). More than half of the teachers had been teaching at their current school for 1–10 years (58.36%).

Regarding the learning areas taught, most teachers were responsible for Science and Technology (41.03%), followed by Social Studies, Religion, and Culture (27.36%), and Health and Physical Education (25.84%). They were teaching at both the primary level (56.84%) and the secondary level (53.50%).

**Table 5** General Information of Teachers in the Survey in Numbers and Percentages, Disaggregated by Type of School

Information about Teachers	Type of School				Subtotal	
	Public schools under OBEC		Schools for Disabilities Group			
	Number	Percent	Number	Percent	Number	Percent
<b>Gender</b>						
Female	193	61.27	9	64.29	202	61.40
Male	116	36.83	5	35.71	121	36.78
LGBTQI+	5	1.59	0	0.00	5	1.52
Not specified	1	0.32	0	0.00	1	0.30
<b>Grand Total</b>	<b>315</b>	<b>100.00</b>	<b>14</b>	<b>100.00</b>	<b>329</b>	<b>100.00</b>
<b>Age</b>						
21-30 years	56	17.78	2	14.29	58	17.63
31-40 years	120	38.10	7	50.00	127	38.60
41-50 years	86	27.30	5	35.71	91	27.66
51-60 years	53	16.83	0	0.00	53	16.11
<b>Grand Total</b>	<b>315</b>	<b>100.00</b>	<b>14</b>	<b>100.00</b>	<b>329</b>	<b>100.00</b>
<b>Years of teaching experience in the school</b>						
1-5 years	91	28.89	5	35.71	96	29.18
6-10 years	94	29.84	2	14.29	96	29.18
11-15 years	48	15.24	2	14.29	50	15.20
16-20 years	40	12.70	3	21.43	43	13.07
21 years and above	42	13.33	2	14.29	44	13.37
<b>Grand Total</b>	<b>315</b>	<b>100.00</b>	<b>14</b>	<b>100.00</b>	<b>329</b>	<b>100.00</b>

**Table 5 (cont.)** General Information about Teachers in the Survey in Numbers and Percentages, Disaggregated by Type of School

Information about Teachers	Type of School				Subtotal	
	Public schools under OBEC		Schools for Disabilities Group			
	Number	Percent	Number	Percent	Number	Percent
<b>Subject area taught by teachers</b>						
Science and Technology	132	41.90	3	21.43	135	41.03
Social Studies, Religion, and Culture	84	26.67	6	42.86	90	27.36
Health and Physical Education	81	25.71	4	28.57	85	25.84
Thai Language	9	2.86	0	0.00	9	2.74
Mathematics	5	1.59	0	0.00	5	1.52
Foreign Languages	2	0.63	0	0.00	2	0.61
Occupational Work	1	0.32	0	0.00	1	0.30
Arts	1	0.32	0	0.00	1	0.30
Special Education	0	0.00	1	7.14	1	0.30
<b>Grand Total</b>	<b>315</b>	<b>100.00</b>	<b>14</b>	<b>100.00</b>	<b>329</b>	<b>100.00</b>
<b>Grade level taught by teachers (multiple responses possible)</b>						
Primary school	183	58.10	4	28.57	<b>187</b>	<b>56.84</b>
High school	164	52.06	12	85.71	<b>176</b>	<b>53.50</b>

## 2) General Information on Schools

Of the total 329 schools surveyed, the majority were non-boarding schools (89.36%), with only 0.164% being boarding schools. All surveyed schools offered instruction from pre-primary through upper secondary levels, with primary education being the most commonly offered level (72.95%). Most schools were of medium size (120–719 students), accounting for 58.05%.

The majority of surveyed schools were not located in remote or difficult-to-access areas (88.15%), with only 11.85% situated in such areas.

Of all 329 schools surveyed, only 20.67% had no students with disabilities, while 75.08% had students with disabilities. The highest proportion were students with learning disabilities (95.55%), followed by intellectual disabilities (47.37%) and behavioural or emotional disabilities (38.46%).

**Table 6** Number and Percentage of Schools by School Type

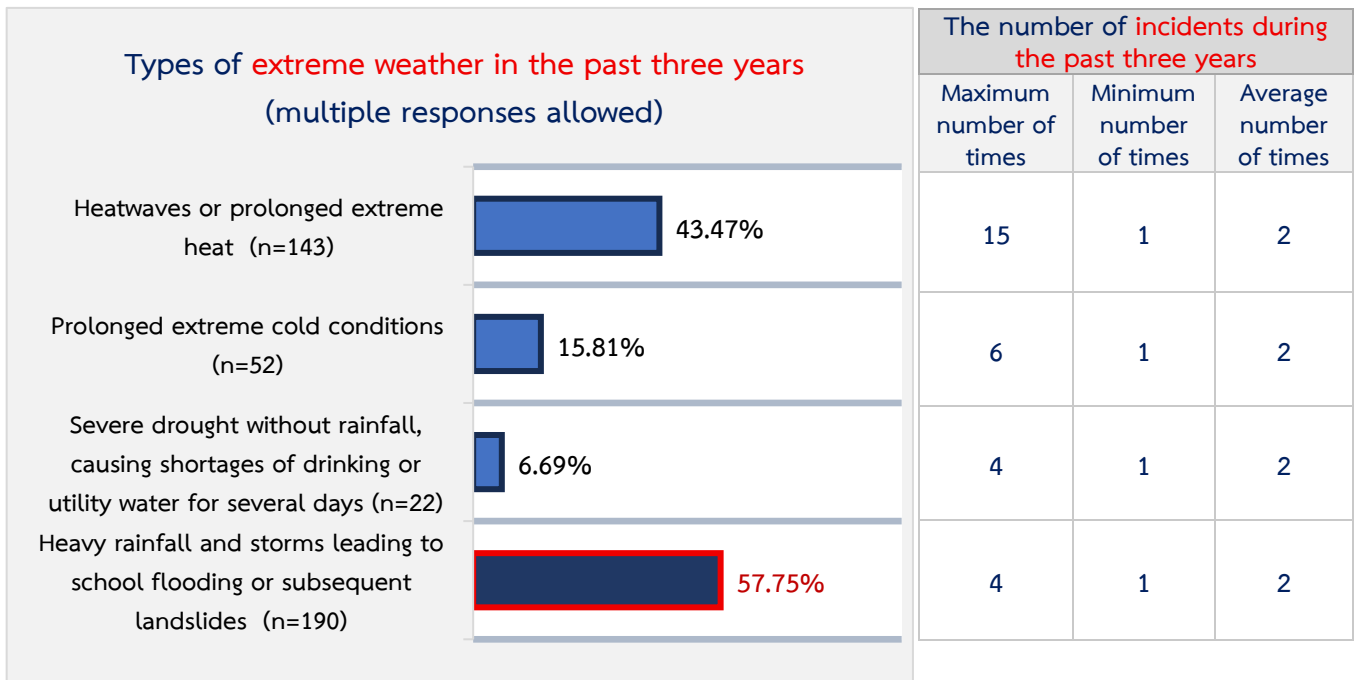
School Information	School Type				Subtotal	
	Public schools under OBEC		Schools for Disabilities Group			
	Number	Percent	Number	Percent	Number	Percent
<b>Is the school a boarding school?</b>						
Not a boarding school	294	93.33	0	0.00	294	89.36
Boarding school	21	6.67	14	100.00	35	10.64
<b>Grand Total</b>	<b>315</b>	<b>100.00</b>	<b>14</b>	<b>100.00</b>	<b>329</b>	<b>100.00</b>
<b>Grades offered (multiple responses possible):</b>						
Pre-school	218	69.21	11	78.57	229	69.60
Primary school	226	71.75	14	100.00	240	72.95
Middle school	202	64.13	14	100.00	216	65.65
High school	109	34.60	14	100.00	123	37.39
<b>School size (determined by total student enrollment):</b>						
Small ( <i>fewer than 119 students</i> )	48	15.24	3	21.43	51	15.50
Medium ( <i>between 120 and 719 students</i> )	180	57.14	11	78.57	191	58.05
Large ( <i>between 720 to 1,679 students</i> )	60	19.05	0	0.00	60	18.24
Extra large ( <i>more than 1,680 students</i> )	27	8.57	0	0.00	27	8.21
<b>Grand Total</b>	<b>315</b>	<b>100.00</b>	<b>14</b>	<b>100.00</b>	<b>329</b>	<b>100.00</b>
<b>Is the school considered remote and hard-to-reach according to OBEC criteria?</b>						
No	276	87.62	14	100.00	290	88.15
Yes	39	12.38	0	0.00	39	11.85
<b>Grand Total</b>	<b>315</b>	<b>100.00</b>	<b>14</b>	<b>100.00</b>	<b>329</b>	<b>100.00</b>
<b>Types of learners with disabilities enrolled</b>						
No students with educational impairments	68	21.59	0	0.00	68	21.59
Students with educational impairments (multiple responses allowed)	247	78.41	14	100.00	247	78.41
<i>Learning disabilities</i>	227	91.90	9	64.29	236	95.55
<i>Intellectual impairment</i>	105	42.51	12	85.71	117	47.37
<i>Behavioral/emotional impairment</i>	90	36.44	5	35.71	95	38.46
<i>Physical/mobility/health impairment</i>	85	34.41	6	42.86	91	36.84
<i>Autism</i>	49	19.84	10	71.43	59	23.89
<i>Speech/language impairment</i>	35	14.17	5	35.71	40	16.19
<i>Visual impairment</i>	23	9.31	3	21.43	26	10.53
<i>Multiple disabilities</i>	16	6.48	6	42.86	22	8.91
<i>Hearing impairment</i>	13	5.26	6	42.86	19	7.69
<b>Grand Total</b>	<b>315</b>	<b>100.00</b>	<b>14</b>	<b>100.00</b>	<b>329</b>	<b>100.00</b>

## 10.2 Experience of Extreme Weather Incidents by Schools over the Past Three Years and Assistance Received in the Past

### 1) Types of Extreme Weather Incidents Experienced by Schools over the Past Three Years

From the survey of schools in provinces affected by extreme weather incidents that caused damage or impacts on students’ health and lives, school buildings and facilities, or on students’ education over the past three years, it was found that all schools had experienced some form of extreme weather incident.

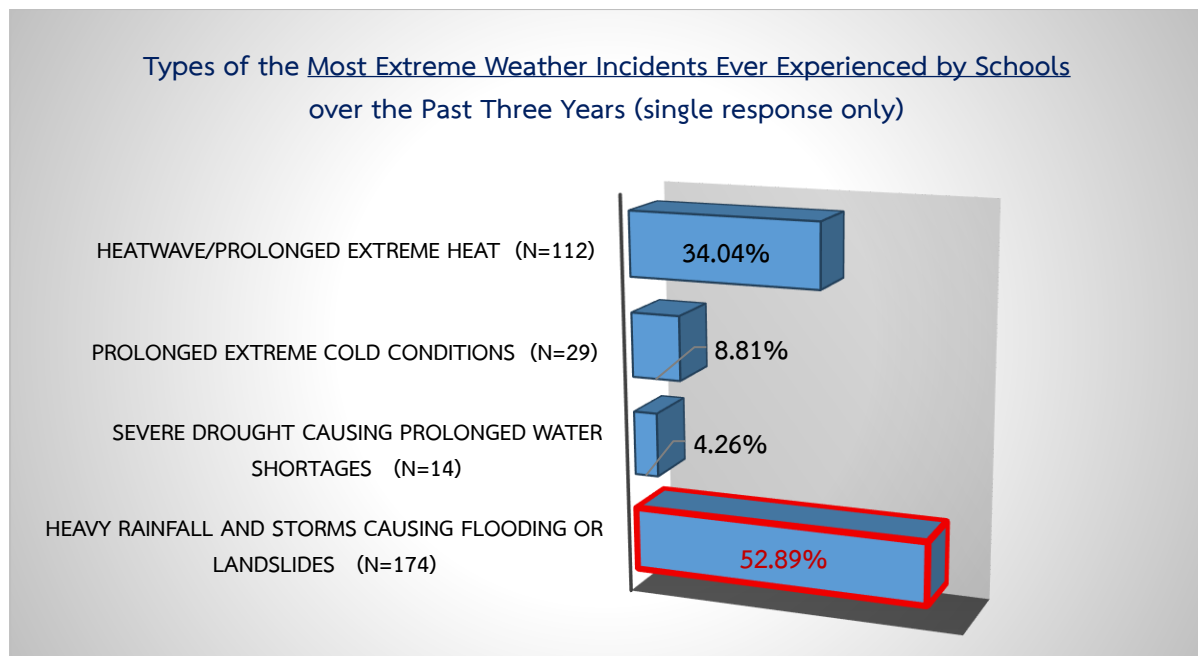
More than half had experienced heavy rainfall and storms causing flooding or landslides — a total of 190 schools, representing 57.75%. Among these, the highest frequency of heavy rainfall and flooding incidents reported during the past three years was four times, and the lowest frequency was once.



**Figure 1** Types of extreme weather incidents experienced by schools over the past three years (multiple responses allowed)

## 2) Types of the Most Extreme Weather Incidents Ever Experienced by Schools over the Past Three Years

More than half of the schools (174 schools, 52.89%) identified heavy rainfall and storms causing flooding or landslides as the most severe extreme weather incident they had experienced, occurring mainly in November and December. The next most common incident was heatwaves or prolonged extreme heat, reported by 112 schools (34.04%) and occurring mainly in March and April. Prolonged extreme cold was reported by 29 schools (8.81%), occurring mainly in December and January. Severe drought without rainfall leading to prolonged shortages of drinking or utility water was reported by only 14 schools (4.26%), occurring mainly in April.

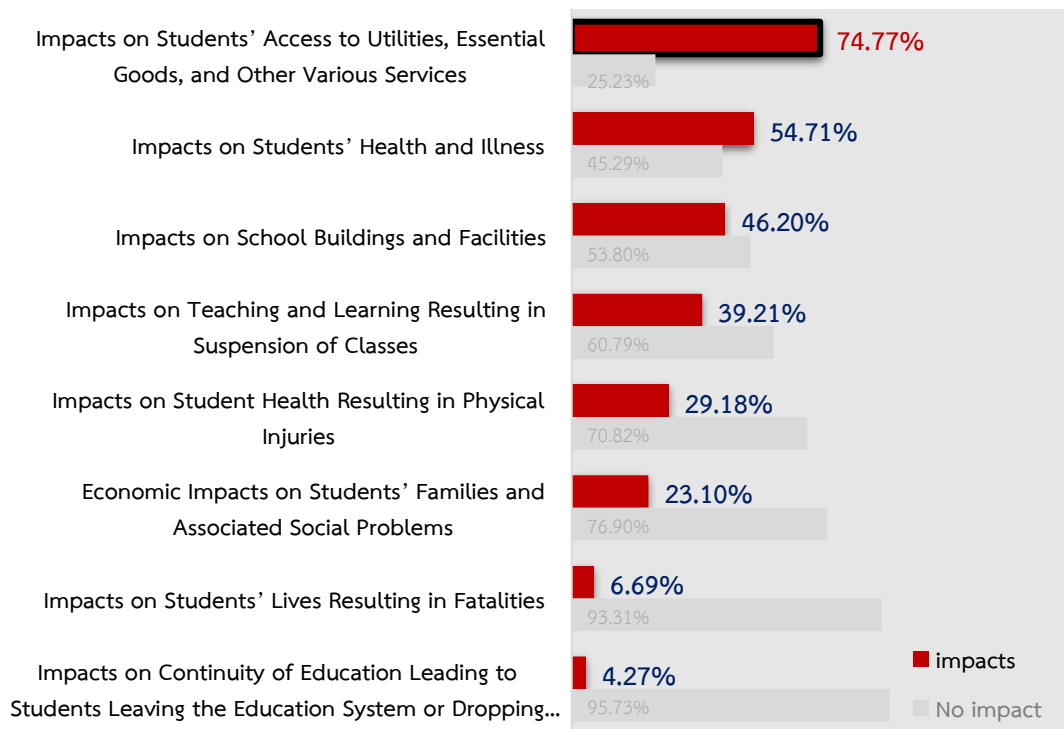


**Figure 2** Type of the most severe extreme weather incident experienced by schools over the past three years (single response only)

**3) Types of Impacts and Damage Sustained by Schools and Students from the Most Extreme Weather Incident Experienced over the Past Three Years (as identified in topic 2)**

From the most extreme weather incident experienced by schools during the past three years—which caused damage or impacts to students’ access to utilities and essential goods, health and lives, school buildings and facilities, and to students’ learning.

**Types of impacts and damage from extreme weather incidents over the past three years**



**Figure 3** Types of impacts and damage experienced by schools and students from the most extreme weather incident over the past three years

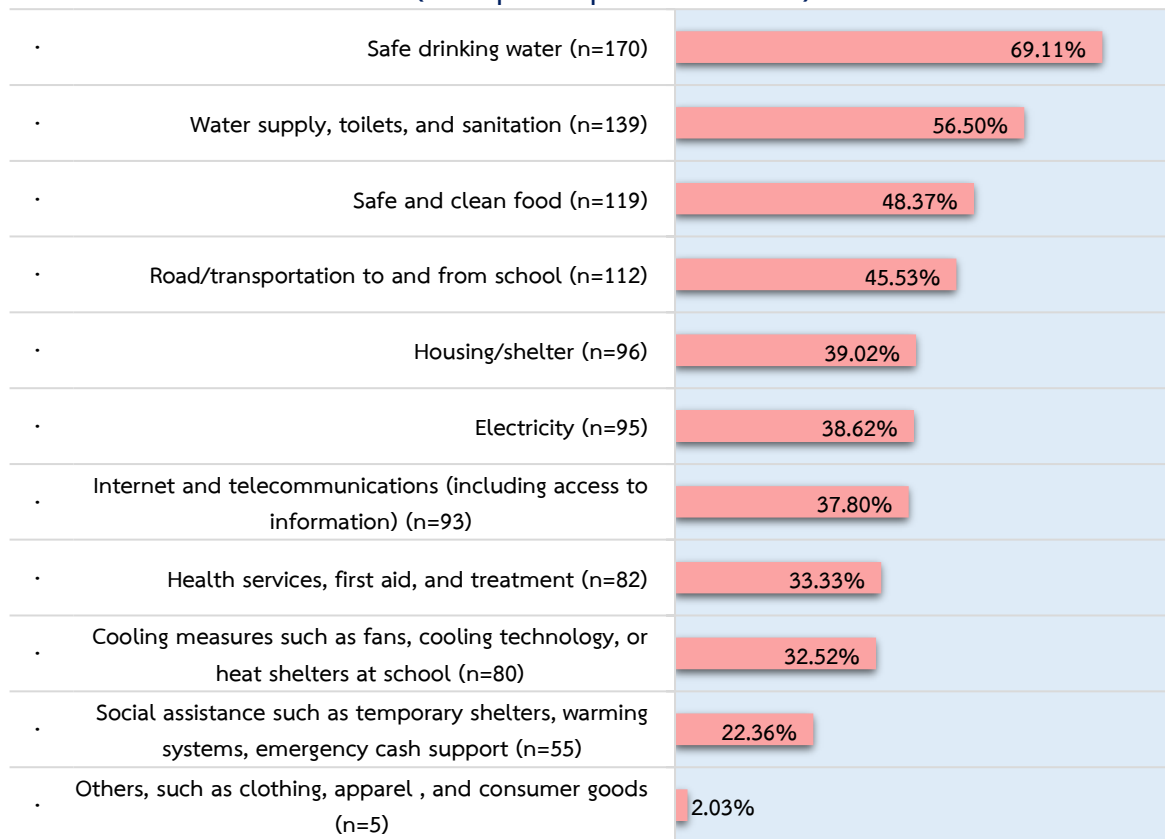
For the impacts and damage sustained by schools and students from the most extreme weather incident experienced during the past three years—ranked by the highest percentages—the details for each type of impact are as follows:

### 3.1) Impacts on Students’ Access to Utilities, Essential Goods, and Other Various Services

From the survey of schools that reported impacts on students’ access to utilities, essential goods and services, the top five areas of impact were:

1. Access to safe drinking water (69.11%).
2. Access to water for use, toilets, and sanitation systems (56.50%).
3. Access to safe and clean food (48.37%).
4. Roads and transport to and from school (45.53%).
5. Housing and accommodation (39.02%).

**Impacts on students' access to utilities, essential goods, and services  
(multiple responses allowed)**



**Figure 4** Impacts on Students’ Access to Utilities, Essential Goods, and Services

### 3.2) Impacts on Students' Health and Illness

From the survey of schools that reported impacts on student health resulting in illness from heat or high temperatures, vector-borne diseases (such as dengue fever), food- and water-borne diseases (such as diarrhea), respiratory diseases, malnutrition, or mental health conditions, it was found that 95 schools (52.78%) reported having fewer than 10 students falling ill. Most of these cases occurred in medium-sized schools (120–719 students) — 67 schools, representing 60.36%.

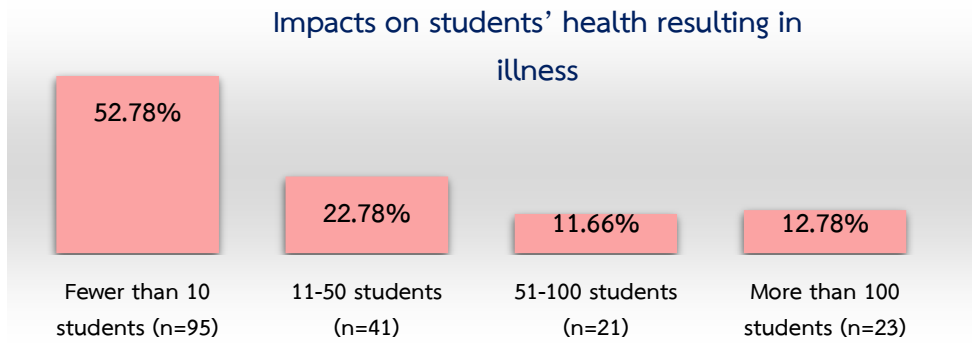


Figure 5 Impacts on Students' Health Resulting in Illness

### 3.3) Impacts on School Buildings and Facilities

From the survey of schools that reported impacts on school buildings and facilities, it was found that the majority of schools (58.55%) experienced partial or minor damage to classrooms or school buildings, which remained usable but required repair and rehabilitation. The next most common impact was damage limited to teaching and learning equipment (38.82%). Only a small proportion of schools (2.63%) reported severe or total destruction of school buildings, rendering them unusable and requiring major repairs or reconstruction.

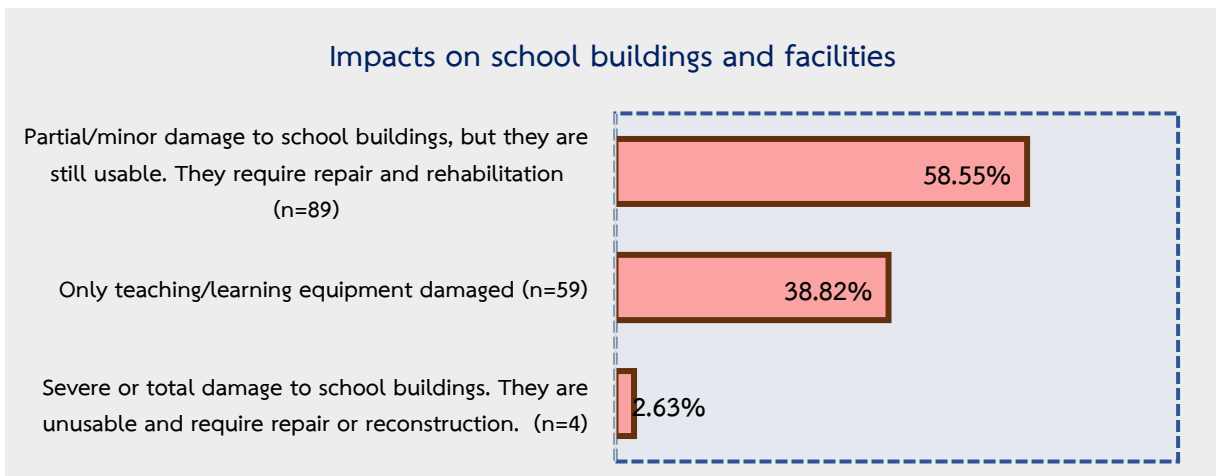


Figure 6 Impacts on School Buildings and Facilities

### 3.4) Impacts on Teaching and Learning Resulting in Suspension of Classes

From the survey of schools that reported impacts on teaching and learning resulting in suspension of classes, it was found that the majority of schools (62.22%) had to suspend classes for 1–3 days. During the suspension period, 48.60% provided compensatory teaching on alternative days, and 38.32% implemented distance learning. However, 13.08% of schools did not provide any teaching or learning activities at all during the suspension period.

#### Impacts leading to suspension of classes

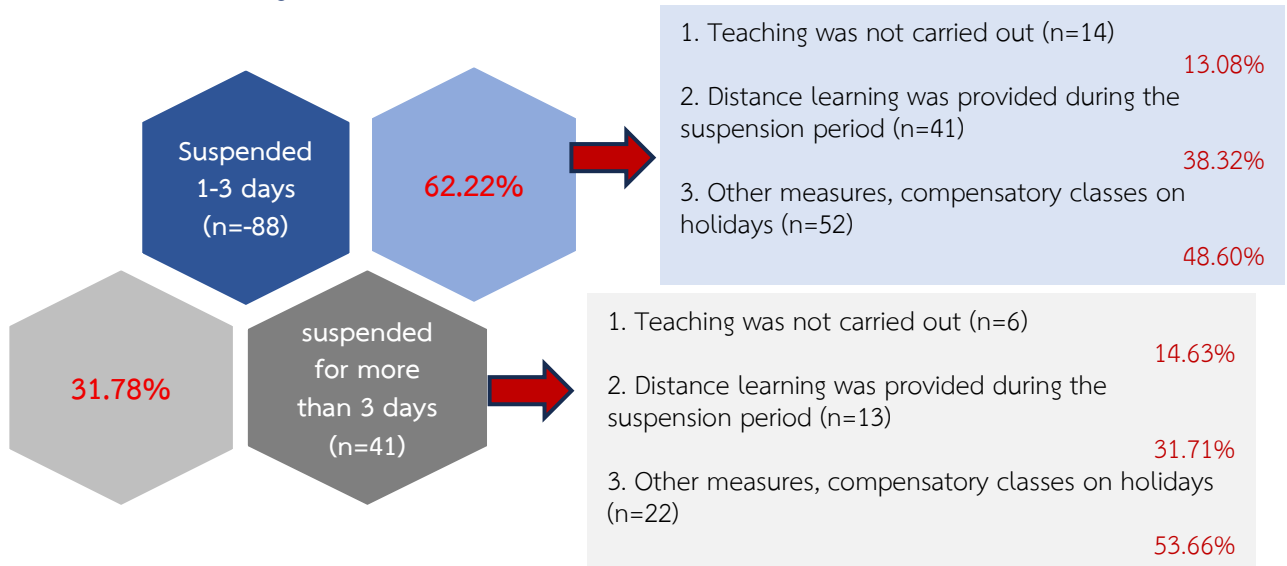
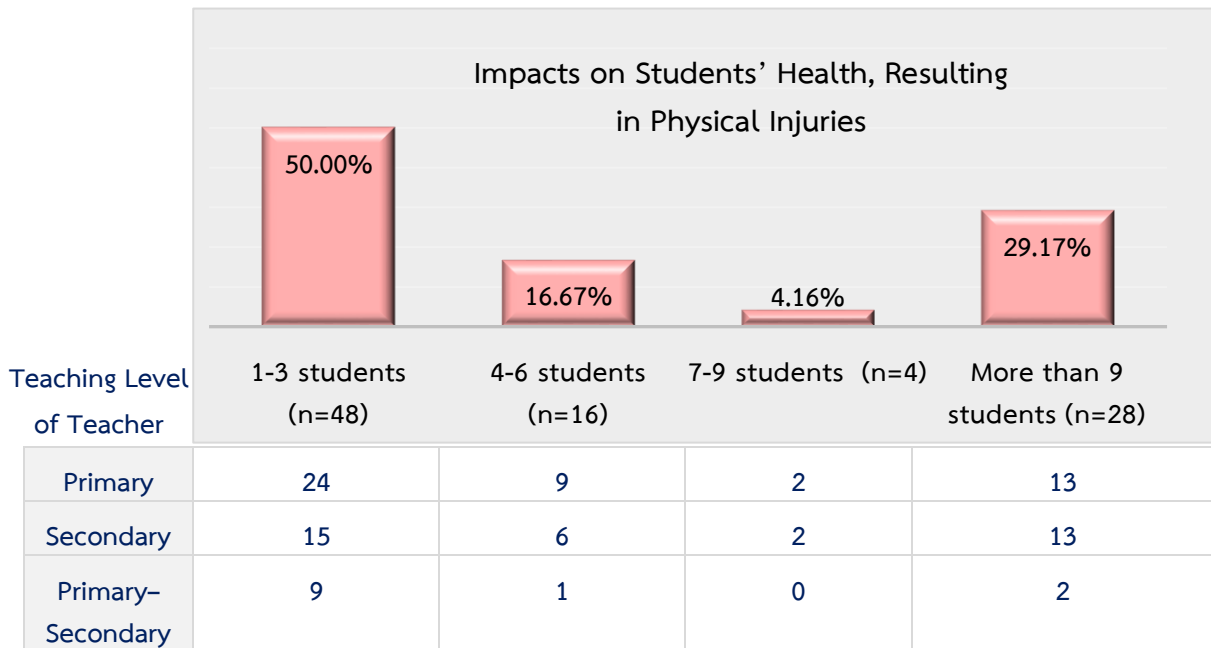


Figure 7 Impacts on Teaching and Learning Resulting in Suspension of Classes

### 3.5) Impacts on Student Health Resulting in Physical Injuries

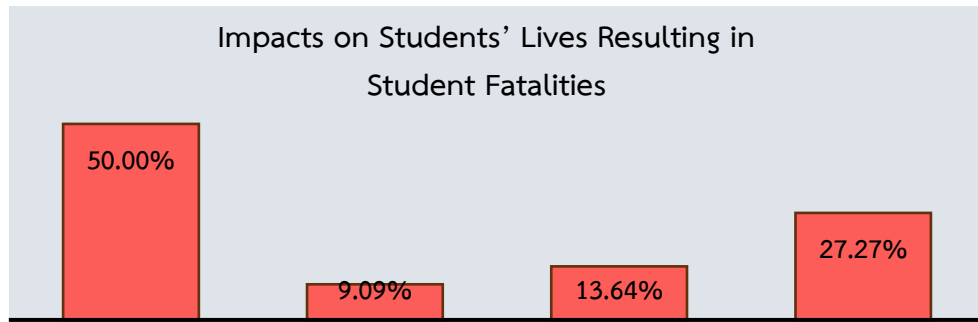
From the survey of schools that reported impacts on students' health, where extreme weather incidents led to natural disasters causing physical injuries to students, it was found that the majority of schools (50.00%) reported 1–3 students sustaining physical injuries, while the next largest group (29.17%) reported more than nine students sustaining physical injuries.



**Figure 8** Impacts on Students' Health Resulting in Physical Injuries

### 3.6) Impacts on Students’ Lives Resulting in Fatalities

From the survey of schools that reported impacts on students’ lives where extreme weather incidents led to natural disasters causing student fatalities, it was found that 22 schools reported student deaths. Half of these schools (50.00%) reported 1–3 student fatalities, while 27.27% reported more than nine student fatalities. The leading cause of student fatalities was storms and heavy rainfall causing flooding or landslides.



Teaching Level of Teacher	1-3 students (n=11)	4-6 students (n=2)	7-9 students (n=3)	More than 9 students (n=6)
Primary	7	2	2	4
Secondary	3	0	0	2
Primary-Secondary	1	0	1	0

**Figure 9** Impacts on Students’ Lives Resulting in Student Fatalities

### 3.7) Economic Impacts on Students' Families and Associated Social Problems

From the survey of schools that reported economic impacts on students' families resulting in subsequent social problems, it was found that 46.05% indicated that students were compelled to work for income during childhood, 43.42% reported that students were displaced or relocated to other areas, and 35.53% reported that at least one student had to leave school to assist with household work.

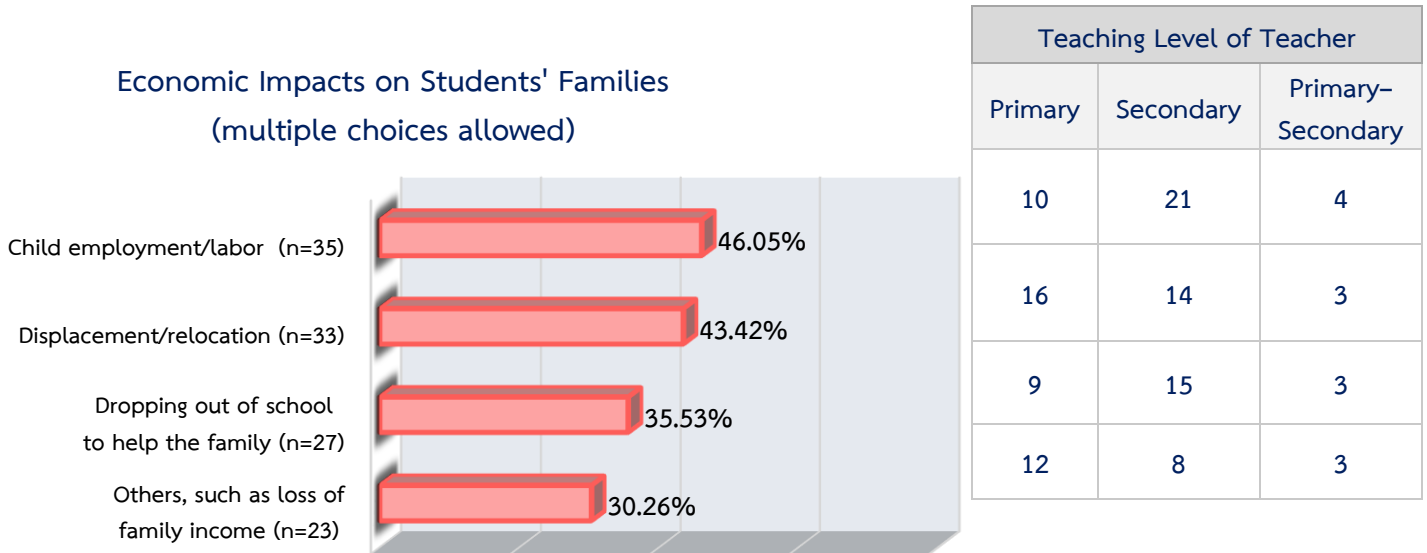
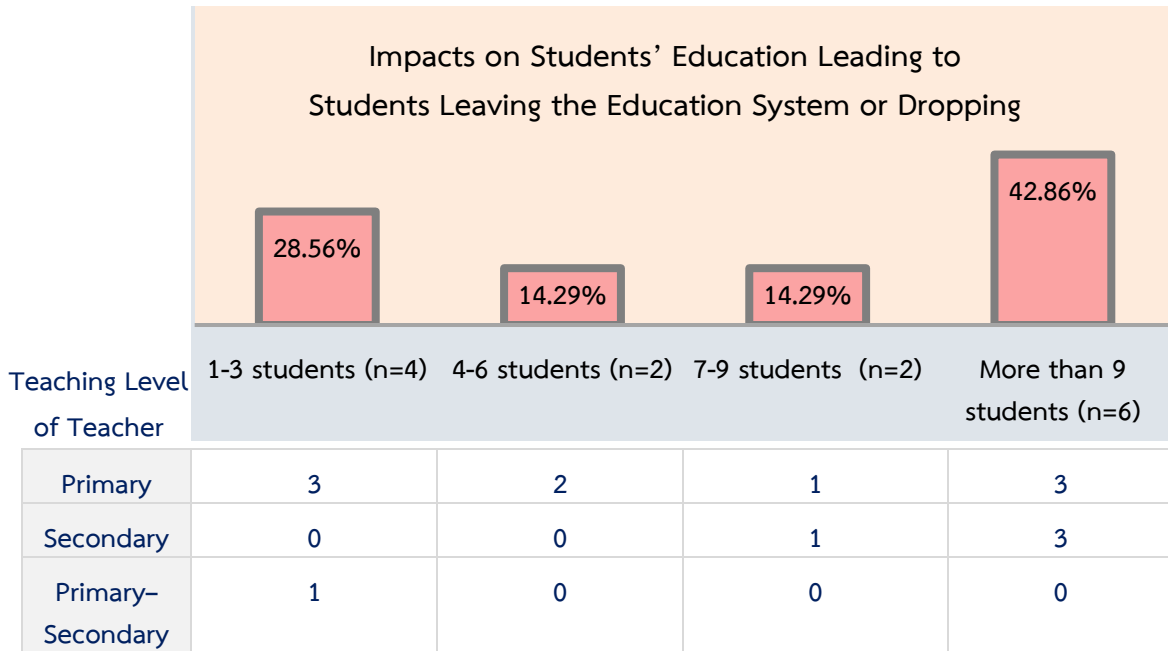


Figure 10 Economic Impacts on Students' Families

### 3.8) Impacts on Continuity of Education Leading to Students Leaving the Education System or Dropping Out from School

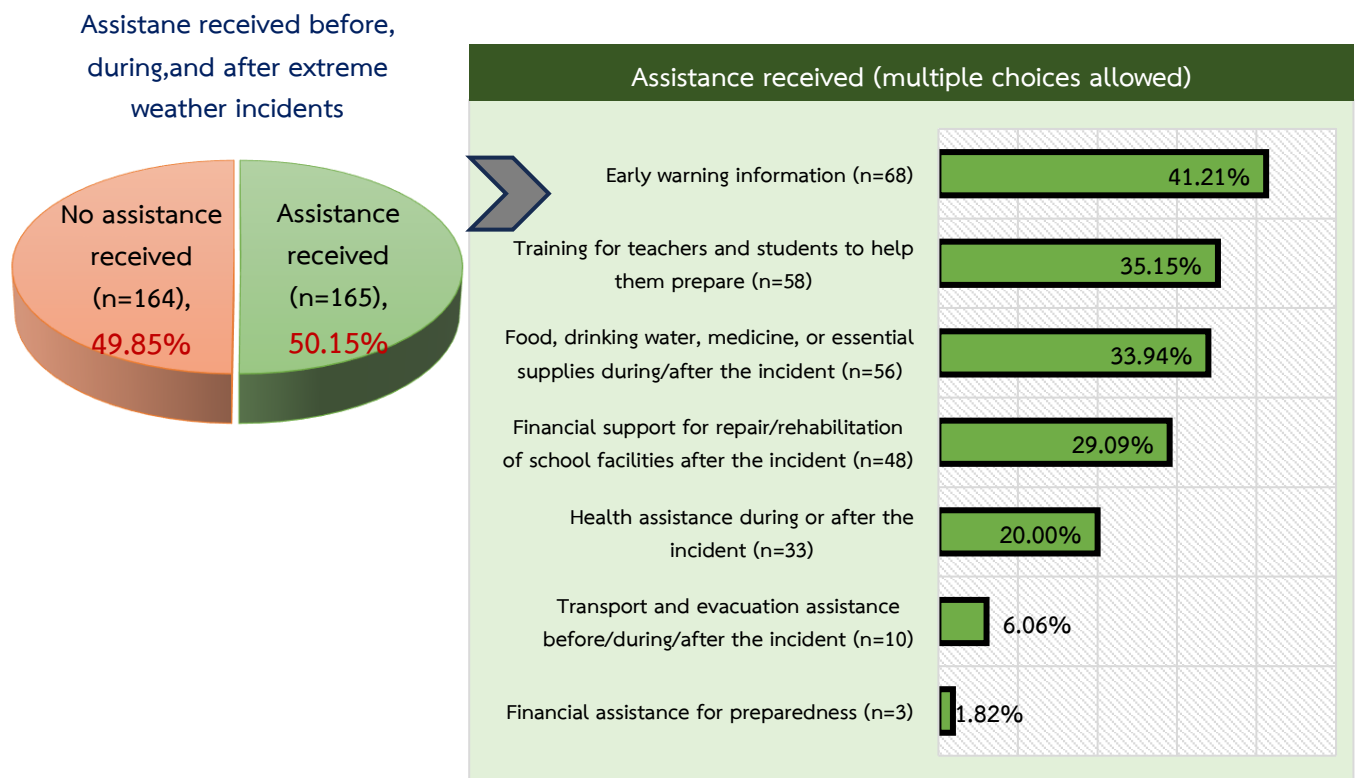
From the survey of schools that reported impacts on students’ ability to continue their education, it was found that such impacts led to students leaving the education system or dropping out of school. A total of 42.86% of teachers reported more than nine students dropping out, while 28.56% of teachers reported 1–3 students dropping out.



**Figure 11** Impacts on Students’ Education Leading to Students Leaving the Education System or Dropping Out from School

#### 4) Assistance Received Before, During, or After Extreme Weather Incidents

From the survey of schools regarding assistance received before, during, or after the most severe extreme weather incident experienced during the past three years, it was found that 50.15% of schools had received some form of assistance. The most common type of support was early warning information prior to the incident (41.21%), followed by training for teachers and students to prepare for the incident (35.15%), and the provision of food, drinking water, medicine, or essential supplies during or after the incident (33.94%). It should also be noted that nearly half of the schools (49.85%) had never received any assistance, mainly because they had not suffered significant damage — for example, school buildings were undamaged or only slightly damaged, or only teaching and learning equipment had been affected.



**Figure 12** Assistance Received Before, During, or After Extreme Weather Incidents

For agencies providing assistance to schools and students affected by the most severe extreme weather incident experienced during the past three years, the types of assistance received were ranked from most common to least common. The majority of schools (82%) received early warning information from local government agencies or other government bodies not related to education or public health, such as local administrative organizations, the Meteorological Department and the Department of Disaster Prevention and Mitigation, among others. In addition, 64% of schools received training for teachers and students to prepare for extreme weather incidents from the same types of agencies that

provided the warning information, while only 21% received such training from education-sector agencies. With regard to public health assistance, 48% of schools received support directly from public health agencies, such as provincial or district health service centres or provincial public health offices, whereas 42% received public health assistance from local government agencies or other government bodies not specifically responsible for public health.

#### 4.1) Provision of information or early warning prior to the incident (n=68)

agencies providing assistance	
1) Government or local agencies, such as local administrative organizations, Provincial Disaster Prevention and Mitigation Offices, Provincial Public Relations Offices (n=56)	82.35%
2) Education sector agencies such as the Office of the Basic Education Commission, Provincial Education Offices, or local education offices (n=9)	13.24%
3) Public communication from community leaders (n=2)	2.94%
4) Public health agencies such as hospitals or health offices (n=1)	1.47%

#### 4.2) Training for teachers and students to prepare for the extreme weather incidents (n=58)

agencies providing assistance	
1) Government or local agencies, such as local administrative organizations, Provincial Disaster Prevention and Mitigation Offices (n=37)	63.79%
2) Education sector agencies such as the Office of the Basic Education Commission, Provincial Education Offices, or local education offices (n=12)	20.69%
3) Public health agencies such as hospitals or health offices (n=9)	15.52%

#### 4.3) Food, drinking water, medicine or essential supplies during or after the extreme weather incident (n=56)

agencies providing assistance	
1) Government agencies, such as local administrative organizations, the military (n=35)	62.50%
2) Social sector, such as community leaders / citizens, charitable foundations (n=8)	14.29%
3) Public health agencies, such as provincial/district/subdistrict hospitals, Provincial/District Public Health Offices, the Thai Red Cross Society (n=7)	12.50%
4) Educational agencies, such as the Office of Primary Educational Service Area / Office of Secondary Educational Service Area, Office of the Private Education Promotion Commission (n=6)	10.71%

#### 4.4) Financial assistance for repairing and rehabilitating school buildings and facilities after the extreme weather incident (n=48)

agencies providing assistance	
1) Education sector agencies such as the Office of the Basic Education Commission, Provincial Education Offices, or local education offices (n=32)	66.67%
2) Government or local agencies, such as local administrative organizations (n=11)	22.92%
3) Contributions from independent organizations / contributions from the public (n=5)	10.42%

#### 4.5) Public health assistance during or after the extreme weather incident

(n=33)

agencies providing assistance	
1) Public health agencies, such as provincial/district/subdistrict hospitals, Provincial/District Public Health Offices, Village health volunteers (VHVs) (n=16)	48.48%
2) Government or local agencies, such as local administrative organizations, Provincial Disaster Prevention and Mitigation Offices, Royal Irrigation Department, (n=14)	42.42%
3) Education sector agencies such as the Office of the Basic Education Commission, Provincial Education Offices, or local education offices, Higher education institutions (n=2)	6.06%
4) Independent organizations / Private sector (n=1)	3.03%

#### 4.6) Vehicles and assistance for facilitating evacuation before, during or after the extreme weather incident (n=10)

agencies providing assistance	
Government agencies, such as local administrative organizations, the military (n=10)	100.00%

#### 4.7) Financial assistance for preparedness before the extreme weather incident (n=3)

agencies providing assistance	
Government or local agencies, such as local administrative organizations (n=3)	100.00%

### Summary of Schools' Experience of Extreme Weather Incidents and Assistance Received Over the Past Three Years"

From the survey of schools located in provinces affected by extreme weather incidents, it was found that the most severe extreme weather incidents experienced by schools during the past three years were, in order of frequency: heavy rainfall and storms causing flooding or landslides (52.89%), heatwaves or prolonged extreme heat (34.04%), and prolonged extreme cold (8.81%).

The most severe extreme weather incidents experienced by schools over the past three years had the greatest impact on students' access to utilities, essential services, and services (74.77%). The second most common impact was on student health, resulting in illnesses such as heat-related conditions, vector-borne diseases such as dengue fever, food- and water-borne diseases such as diarrhea, respiratory diseases, malnutrition, or mental health conditions (54.71%). The third was damage to school buildings and facilities (46.20%).

When asked about assistance received in connection with extreme weather incidents over the past three years, 50.15% of teachers reported having received some form of assistance, while 49.85% reported never having received any assistance. The most frequently received assistance was early warning information before an incident (41.21%), followed by training for teachers and students to prepare for an incident (35.15%), and provision of food, drinking water, medicine, or essential supplies during or after an incident (33.94%). Most of this assistance came from local government agencies or other government bodies not related

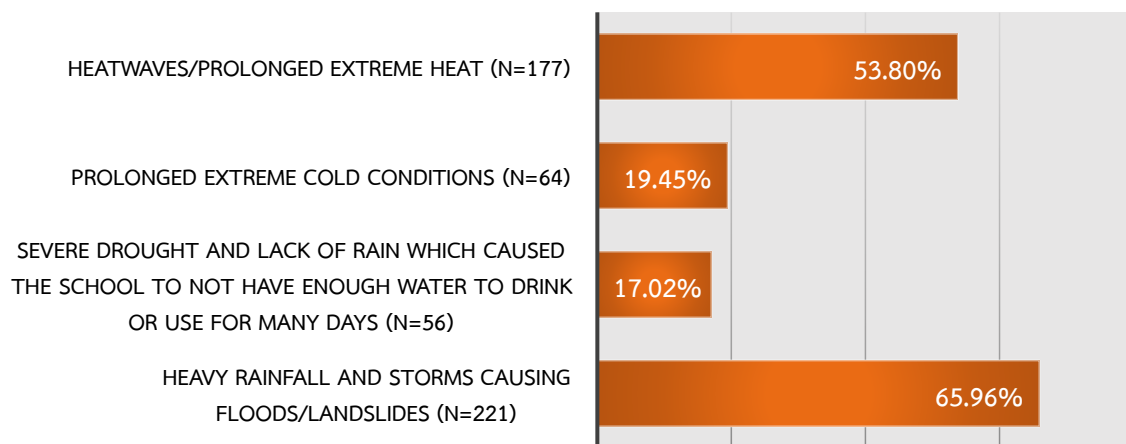
to education or public health, such as local administrative organizations, the Meteorological Department, and the Department of Disaster Prevention and Mitigation.

### 10.3 Schools' Anticipated Experience with Extreme Weather Incidents in the Future and Essential Support Needed to Cope with Future Extreme Weather Incidents

#### 1) Types of Extreme Weather Incidents Schools Expect to Occur More Frequently or to Become More Severe in the Future

From the survey of 329 schools in the 14 provinces affected by climate change, it was found that most schools expect that the extreme weather incidents they will experience more frequently or more severely in the future are:

- Heavy rainfall causing flooding of schools or landslides (65.96%).
- Heatwaves or prolonged extreme heat (53.80%).
- Prolonged extreme cold (19.45%).
- Severe drought without rainfall leading to prolonged shortages of drinking or utility water at schools (17.02%).



**Figure 13** Types of Extreme Weather Incidents Anticipated to Occur More Frequently or Become More Severe in the Future (Select 1–2 options)

## 2) Types of Impacts Expected to Affect Students and Schools

From the survey of the types of impacts expected to affect students and schools, it was found that most schools anticipate impacts on the health and lives of students (resulting in illness from various diseases, as well as injury or death from disasters) at 69.00%. This is followed by anticipated impacts on students' education (including damage to school buildings, suspension of classes, or students leaving the education system) at 48.33%, and anticipated impacts on students' access to utilities, essential goods, and services at 45.29%.

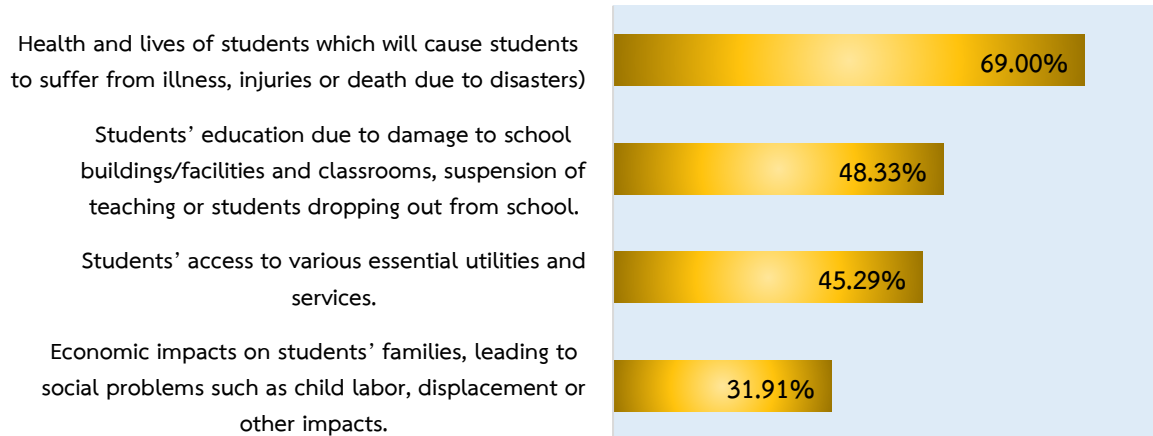
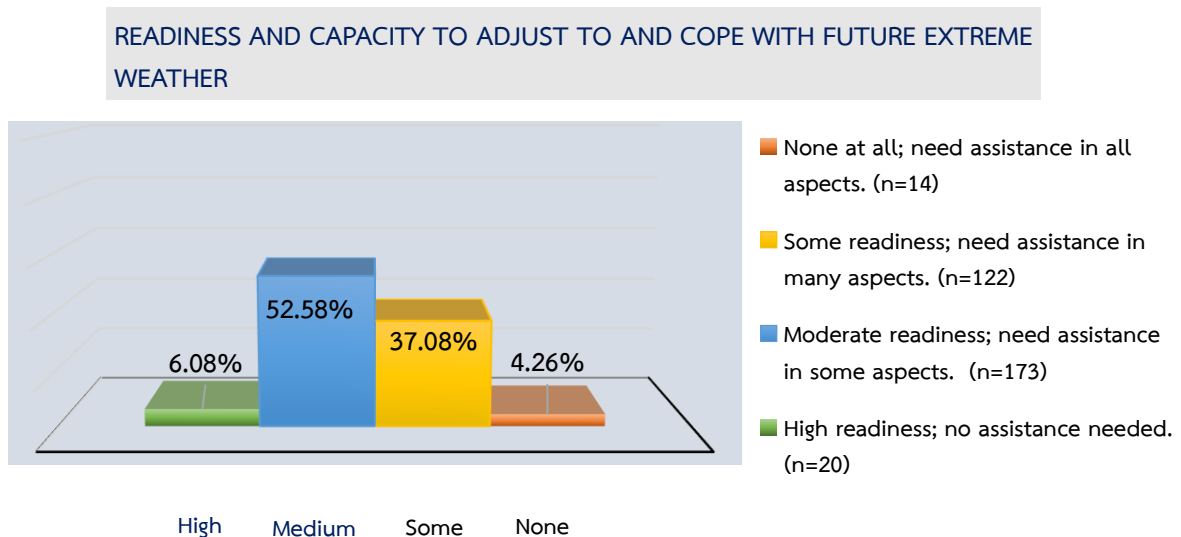


Figure 14 Types of Impacts Expected to Occur in Schools (Select 1–2 options)

### 3) Current Readiness and Capacity of Schools, Students, and School Personnel to Prevent and Cope with Future Extreme Weather Incidents

Regarding the extreme weather incidents that schools expect to experience more frequently or more severely in the future, schools need to be prepared to cope with such conditions — for example, by having disaster response plans or procedures in place, conducting regular training or drills, and ensuring the provision of food, drinking water, and essential medicines for emergency situations. It was found that at present more than half of schools, students, and school personnel (52.58%) have moderate readiness and capacity and require assistance in some areas to adapt to and cope with the expected extreme weather incidents. A further 37.08% have some readiness and capacity but need assistance in many areas. Only 20 schools (6.08%) reported having high readiness and capacity and not requiring any assistance. All of them were public schools under OBEC, mostly located in Kalasin, Phatthalung, Yala, and Lampang provinces, with more than half being medium-sized, and nearly half offering classes at the pre - primary levels.



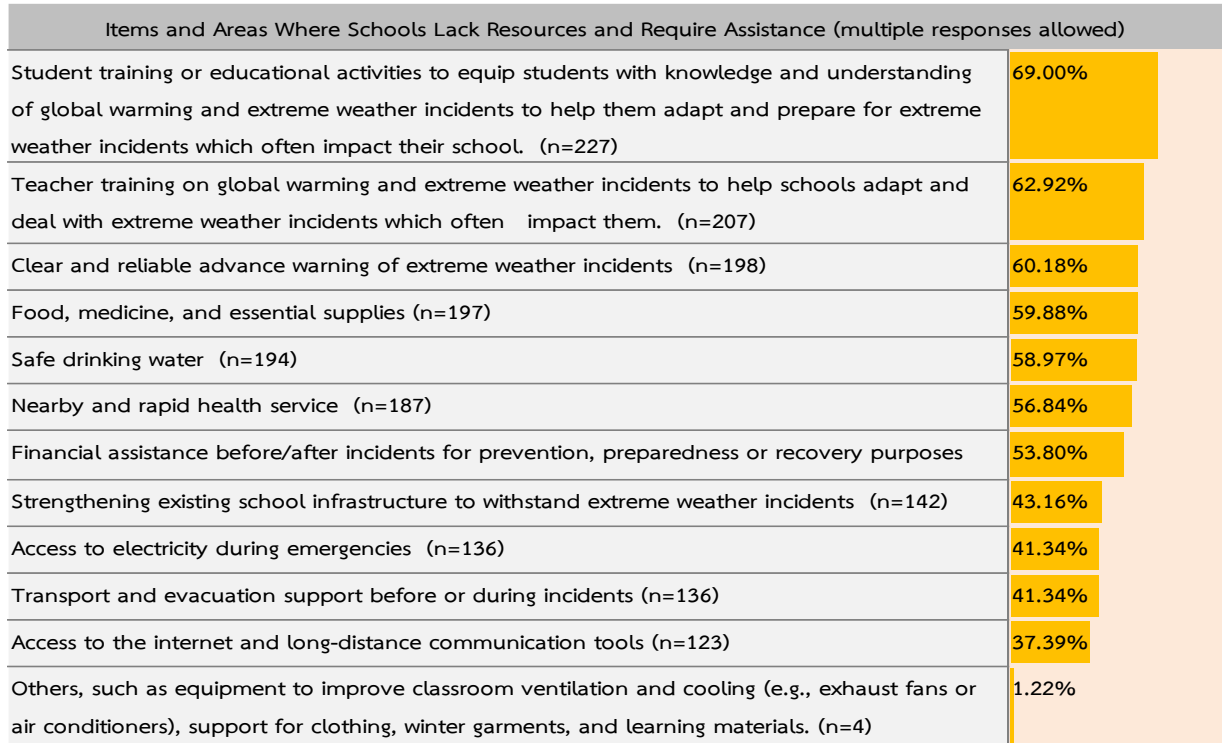
**Figure 15** Readiness and Capacity to Adjust to and Cope with Future Extreme Weather Incidents

### 4) Items and Areas that Schools Lack and Require Assistance With to Cope with Future Extreme Weather Incidents in Both the Short and Long Term

Regarding the extreme weather incidents that schools expect to experience more frequently or more severely in the future, it was found that the top five items and areas schools lack and require assistance with in order to cope with future extreme weather incidents, both in the short and long term, are:

1. Training or learning activities for students to build knowledge and understanding of global warming and extreme weather incidents, or activities to enhance teaching and learning so that students can adapt to and cope with the extreme weather incidents frequently experienced at school (69.00%).

2. Training for teachers to build knowledge and understanding of global warming and extreme weather incidents so they can adapt to and cope with the extreme weather incidents frequently experienced at school (62.92%).
3. Clear and reliable advance information or warnings on extreme weather incidents (60.18%).
4. Food, medicine, and essential supplies (59.88%).
5. Safe and clean drinking water (58.97%).



**Figure 16** Items and Areas Where Schools Lack Resources and Require Assistance (multiple responses allowed)

5) Apart from the extreme weather incidents that schools expect to experience and require assistance with, as noted in the previous section, environmental or pollution problems encountered by schools and the additional assistance they need to address these problems in the future were also surveyed.

It was found that more than half of schools (51.98%) reported having environmental or pollution problems. Among these schools, the majority experienced and required assistance in dealing with air pollution from PM 2.5 dust (67.25%), followed by problems with solid waste (22.22%), other types of air pollution not related to PM 2.5 (19.30%), and water pollution or wastewater (14.04%). However, 48.02% of schools reported having no environmental or pollution problems.

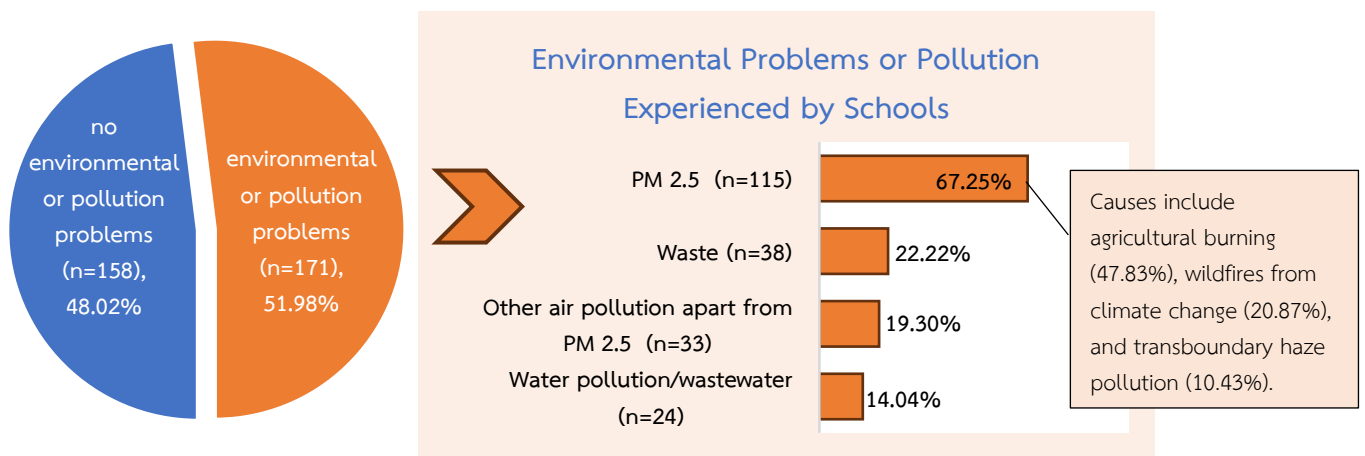


Figure 17 Environmental Problems or Pollution Experienced by Schools and for Which Assistance Is Needed

### Summary of Schools’ Anticipated Experience with Extreme Weather Incidents and Essential Support Needed in the Future

From the survey it was found that most schools expect the extreme weather incidents they will experience more frequently or more severely in the future to be heavy rainfall causing flooding of schools or landslides (65.96%), followed by heatwaves or prolonged extreme heat (53.80%) and prolonged extreme cold (19.45%).

In addition, most schools expect impacts on students’ health and lives, resulting in illness from various diseases, injury or death from disasters (69.00%). This is followed by anticipated impacts on students’ education, including damage to school buildings, suspension of classes, or students leaving the education system (48.33%), and anticipated impacts on students’ access to essential utilities, basic necessities of life, and services (45.29%).

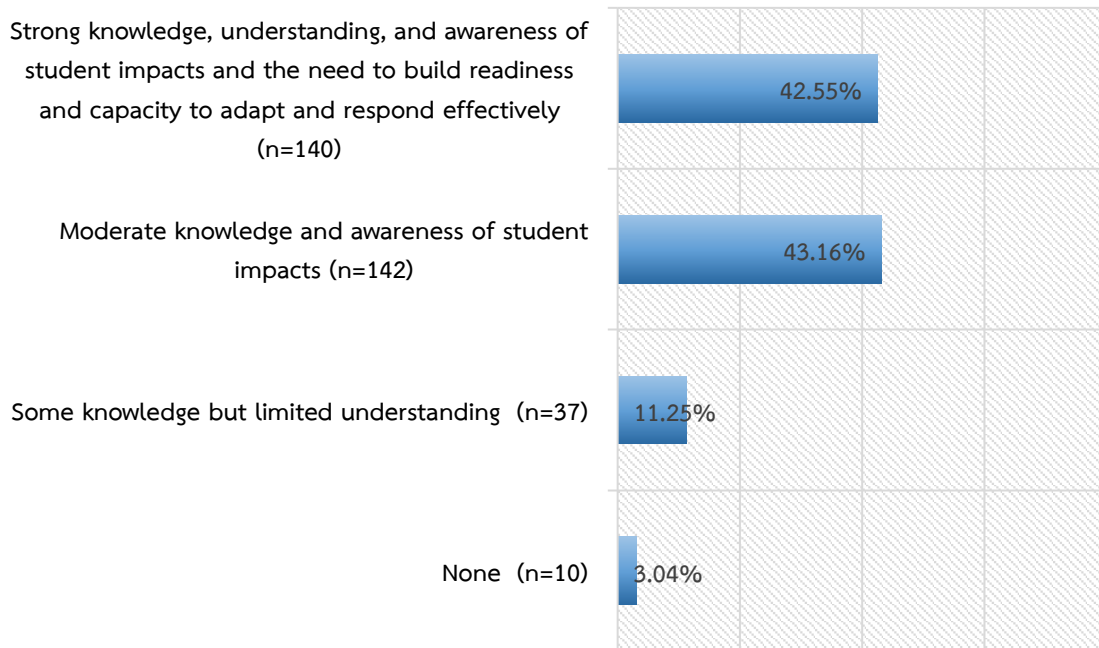
When asked about the items that schools lack and need assistance with in order to cope with future extreme weather incidents in both the short and long term, the top needs were training or learning activities for students to build knowledge and understanding of global

warming and extreme weather incidents, or activities to enhance teaching and learning so that students can adapt to and cope with the extreme weather incidents frequently experienced at school (69.00%); training for teachers to build knowledge and understanding of global warming and extreme weather incidents so they can adapt to and cope with the extreme weather incidents frequently experienced at school (62.92%); and clear and reliable advance information or warnings on extreme weather incidents (60.18%).

## 10.4 Schools’ Readiness and Educational Capacity to Cope with Extreme Weather Incidents

### 1) Teachers’ Knowledge and Understanding of Global Warming and Climate Change

From the survey of 329 schools in the 14 provinces affected by climate change, it was found that 85.71% of teachers had moderate to high levels of knowledge and understanding and were aware of the impacts on students.



**Figure 18** Teachers’ Knowledge and Understanding of Global Warming and Climate Change

## 2) Training Received to Prepare for Extreme Weather Incidents Frequently Experienced by Schools and Affecting Students

Based on the survey on whether teachers had previously received training or learned by themselves about preparedness for extreme weather incidents frequently experienced by schools and affecting students, it was found that the majority of teachers had never received training (80.85%). Among these, 54.89% of teachers had not received training but had learned by themselves, mostly teachers searched for information through the Google platform (56.85%). Of the teachers who had received training (19.15%), 30.16% had participated in onsite/online training provided by the Office of the Basic Education Commission.

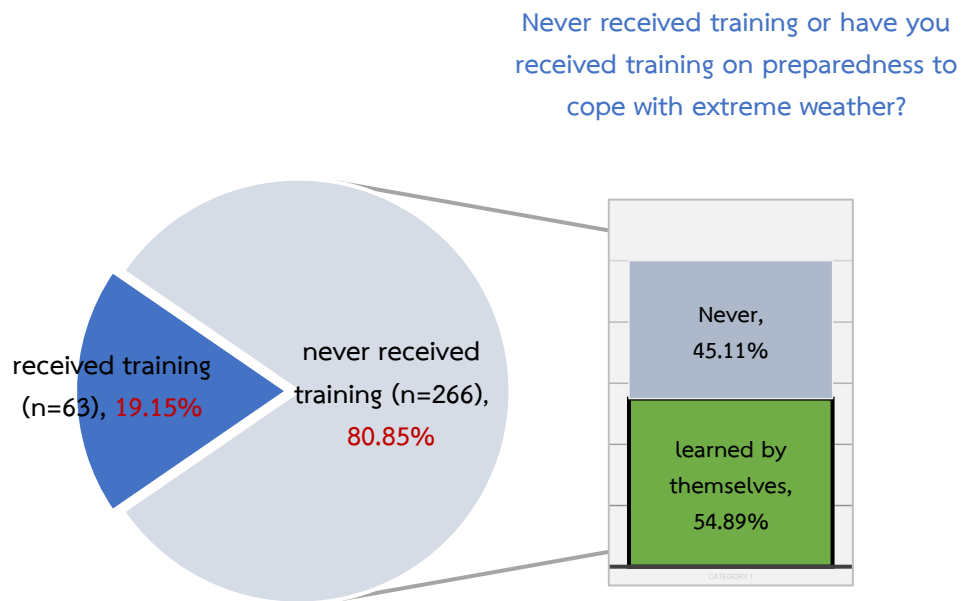
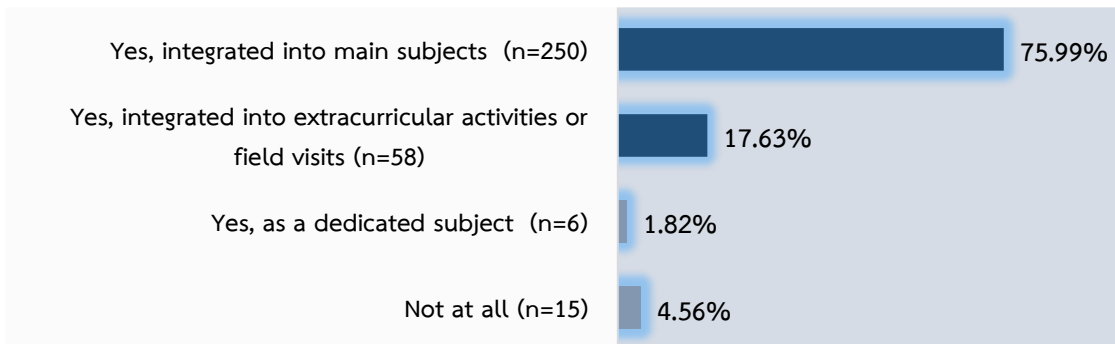


Figure 19 Teachers' Training or Self-Learning on Preparedness

### 3) Teaching Students Knowledge and Understanding of Global Warming and Preparedness for Extreme Weather Incidents

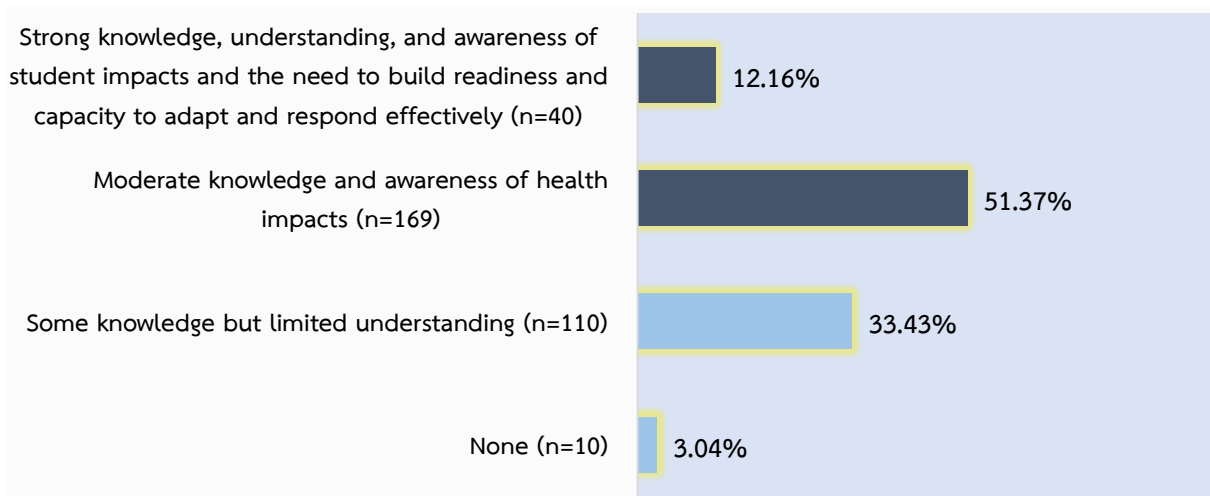
According to the survey, at present most teachers provide teaching to students to build knowledge and understanding of global warming and climate change, including causes, impacts, and preparedness for extreme weather incidents. The majority of teachers deliver this teaching by integrating it into core subjects, supplementary activities, or dedicated courses, accounting for a total of 95.44%, while 4.56% of schools still do not provide such knowledge or teaching.



**Figure 20** Teaching Students Knowledge and Understanding of Global Warming and Preparedness for Extreme Weather Incidents

### 4) Students' Knowledge and Understanding of Global Warming and Climate Change, Its Causes, Impacts and Preparedness for Extreme Weather Incidents

According to the survey findings, the majority of teachers reported that students currently possess knowledge and understanding of global warming and climate change — including its causes, impacts and preparedness for extreme weather incidents — with 84.80% of students assessed as having low to moderate levels of knowledge and understanding.



**Figure 21** Students' Knowledge and Understanding of Global Warming and Climate Change

### 5) Educational Support and Assistance Needed for Climate Change Preparedness

Based on the survey of 329 schools located in the 14 provinces affected by climate change, it was found that the main areas where schools require support or assistance in education to build their readiness and capacity to adjust to and cope with the impacts on students from global warming and climate change are as follows. Most teachers reported needing training or learning activities for students (77.61%) and for teacher (70.25%), as well as modern learning materials and adequate equipment (77.30%) and budget support to implement environmental education or climate change education (65.64%).

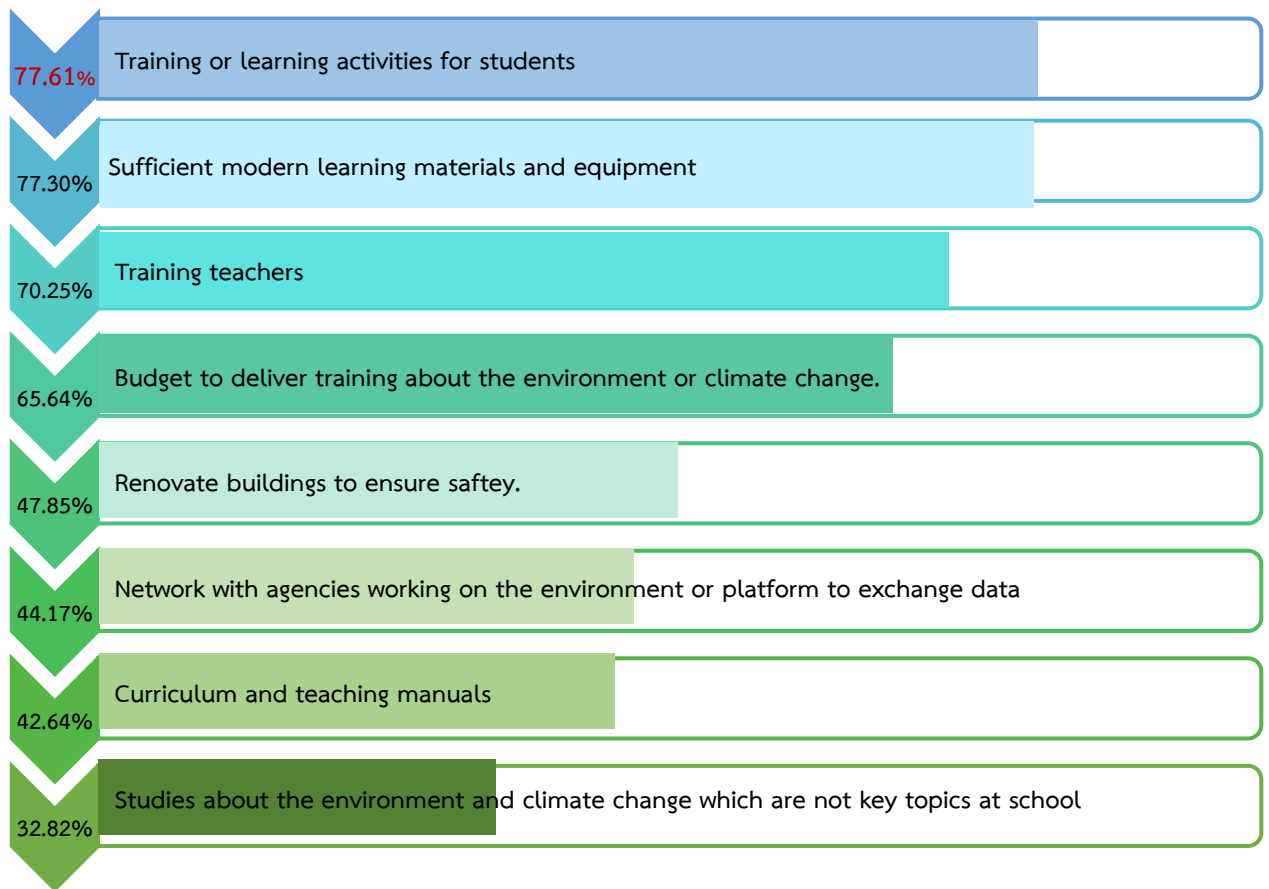


Figure 22 Educational Support Needs or Assistance Required

## Summary of Schools' Readiness and Educational Capacity to Cope with Extreme Weather Incidents

Based on the survey results, most teachers have a moderate-to-high level of knowledge and understanding and are aware of the impacts of climate change on students (85.71%). However, the majority of teachers have never received training (80.85%), of which 54.89% reported that they have learned by themselves.

When asked about current teaching practices, most teachers stated that they provide students with knowledge and understanding on global warming and climate change, including its causes, impacts, and preparedness for extreme weather incidents (95.44%), while 4.56% reported not providing such knowledge or instruction. Among those providing teaching, the majority stated that this knowledge is mainly integrated into core subjects (75.99%). However, most teachers indicated that students still have a low-to-moderate level of knowledge and understanding (84.80%).

Regarding educational support needs or assistance required to build schools' readiness and capacity to adjust to and cope with the impacts of global warming and climate change on students, most teachers reported the need for training or learning activities for students (77.61%) and modern learning materials and adequate equipment (77.30%) in nearly equal proportions. This was followed by the need for teacher training (70.25%) and budget support to implement environmental education or climate change education (65.64%).

## 10.5 Results of the Comparative Analysis of Schools in Each Province (Considering Only Schools in Districts that Have Experienced Disasters According to the Criteria Stated in Section 3.3) Based on Comparisons of 14 Provinces

This section presents the comparative survey results of the 14 provinces that have experienced extreme weather incidents, namely: Kalasin (n=32), Chumphon (n=18), Chiang Rai (n=34), Chiang Mai (n=28), Tak (n=8), Nakhon Ratchasima (n=8), Narathiwat (n=37), Prachuap Khiri Khan (n=14), Phatthalung (n=32), Mae Hong Son (n=4), Yala (n=24), Lampang (n=24), Songkhla (n=49), and Uttaradit (n=17). The survey covered a total of 329 schools across these 14 provinces. The findings can be summarized as follows:

### Section 1 Summary of Comparative Analysis by Province

#### 1) Kalasin Province

The most extreme weather incident experienced by schools in Kalasin Province during the past three years was heatwaves or prolonged extreme heat (71.88%). The principal impact on students' access to utilities, essential goods, and services concerned cooling measures at school, including fans, cooling systems or technologies, or heat-shelter areas (43.75%).

For the future, schools most frequently expect heatwaves or prolonged extreme heat (84.38%) and anticipate impacts on students' health and lives resulting in illness, injury, or death from disasters (90.63%).

Teachers had high levels of knowledge and understanding and were aware of impacts on students, as well as the need to build readiness and the capacity to adapt to and cope with extreme weather incidents and their impacts (40.63%), with 53.57% reporting self-learning. For students, schools provide teaching on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, mostly integrated into core subjects (81.25%). At present, teachers reported that students had some knowledge but limited or no understanding (40.63%).

The support that schools require or need in the field of education to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on students is student training or learning activities (90.63%) and teacher training (81.25%).

#### 2) Chumphon Province

The most extreme weather incident experienced by schools in Chumphon Province during the past three years was heavy rainfall causing flooding of schools or landslides (55.56%). The main impact on students' access to utilities, essential goods, and services concerned roads and transport to and from school (55.56%).

For the future, schools expect heatwaves or prolonged extreme heat most frequently (66.67%), followed by heavy rainfall causing flooding of schools or landslides (61.11%). They

anticipate, most of all, impacts on students' health and lives (61.11%), and, in equal proportions (55.56%), impacts on students' education (damage to school buildings, suspension of classes, or student dropout) and economic impacts on students' families leading to social problems (e.g., child labor, displacement).

Teachers had high levels of knowledge and understanding and were aware of impacts (55.56%), with 54.55% reporting self-learning. For students, schools provide instruction on global warming and climate change, mostly integrated into core subjects (83.33%). At present, teachers reported that students had moderate knowledge and understanding and were aware of health impacts (66.67%).

The support that schools require or need in the field of education to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on students is teacher training (83.33%) and training or learning activities for students (77.78%).

### 3) Chaing Rai Province

The most extreme weather incident experienced by schools in Chiang Rai Province during the past three years was heavy rainfall causing flooding of schools or landslides (52.94%). The principal impact on students' access to utilities, essential goods, and services concerned clean drinking water (50.00%).

For the future, schools most frequently expect heavy rainfall causing flooding of schools or landslides (76.47%) and anticipate, most of all, impacts on students' health and lives resulting in illness from various diseases, injury or death from disasters (55.88%), followed by impacts on students' education such as damage to school buildings, suspension of classes, or students leaving the education system (44.12%).

Teachers had moderate levels of knowledge and understanding and were aware of impacts on students (52.94%), with 61.54% reporting self-learning. For students, schools provide teaching on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, mostly integrated into core subjects (73.53%). At present, teachers reported that students had moderate knowledge and understanding of global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, and were aware of health impacts (50.00%).

Support needed in the education sector to build schools' readiness and capacity to adapt to and cope with impacts on children from global warming and climate change is modern learning materials and adequate equipment (84.85%).

#### 4) Chiang Mai Province

The most extreme weather incident experienced by schools in Chiang Mai Province during the past three years was heavy rainfall causing flooding of schools or landslides (42.86%). The principal impacts on students' access utilities, essential goods, and services concerned, in equal proportions, clean drinking water and water for use, toilets, and sanitation systems (46.43%).

For the future, schools most frequently expect heavy rainfall causing flooding of schools or landslides (60.71%), followed, in equal proportions, by heatwaves or prolonged extreme heat and prolonged extreme cold (53.57%). They anticipate impacts on students' health and lives, resulting in illness from various diseases, injury or death from disasters (78.57%).

Teachers had high levels of knowledge and understanding and were aware of impacts on students, as well as the need to build readiness and the capacity to adapt to and cope with extreme weather incidents and their impacts (50.00%), with 55.00% reporting self-learning. For students, schools provide teaching on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, mostly integrated into core subjects (78.57%). At present, teachers reported that students had a moderate level of knowledge and understanding of global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, and were aware of health impacts (53.57%).

The support that schools require or need in the field of education to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on students is teacher training, modern learning materials and adequate equipment, and budgetary support for environmental education or climate change education, all in equal proportions (82.14%).

#### 5) Tak Province

The most extreme weather incident experienced by schools in Tak Province during the past three years was heatwaves or prolonged extreme heat (37.50%). The principal impact on students' access utilities, essential goods, and services concerned clean drinking water (75.00%).

For the future, schools most frequently expect heatwaves or prolonged extreme heat (62.50%) and anticipate impacts on students' health and lives, resulting in illness from various diseases, injury or death from disasters (75.00%).

Teachers had high levels of knowledge and understanding and were aware of impacts on students, as well as the need to build readiness and the capacity to adapt to and cope with extreme weather incidents and their impacts (50.00%), with 80.00% reporting self-learning. For students, schools provide teaching on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, mostly integrated into core subjects (75.00%). At present, teachers reported that students had moderate knowledge and

understanding of global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, and were aware of health impacts (50.00%).

The support that schools require or need in the field of education to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on students is modern learning materials and adequate equipment (75.00%).

## 6) Nakhon Ratchasima Province

The most extreme weather incident experienced by schools in Nakhon Ratchasima Province during the past three years was heatwaves or prolonged extreme heat (62.50%). The main impact on students' access utilities, essential goods, and services concerned clean drinking water (62.50%).

In the future, schools most frequently expect heatwaves or prolonged extreme heat, severe drought resulting in no rainfall causing prolonged shortages of drinking or usable water, and heavy rainfall causing flooding of schools or landslides, all in equal proportions (50.00%). They anticipate, also in equal proportions, impacts on students' health and lives resulting in illness from various diseases, injury or death from disasters, and impacts on students' education such as damage to school buildings, suspension of classes, or students leaving the education system (62.50%).

Teachers had high levels of knowledge and understanding and were aware of impacts on students, as well as the need to build readiness and the capacity to adapt to and cope with extreme weather incidents and their impacts (50.00%), with 50.00% reporting self-learning. For students, schools provide instruction to all students on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, mostly integrated into core subjects. At present, teachers reported that students had moderate knowledge and understanding of global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, and were aware of health impacts (62.50%).

The support that schools require or need in the field of education to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on students is training or learning activities for students and modern learning materials and adequate equipment, in equal proportions (87.50%).

## 7) Narathiwat Province

The most extreme weather incident experienced by schools in Narathiwat Province during the past three years was heavy rainfall causing flooding of schools or landslides (81.08%). The principal impact on students' access to utilities, essential goods, and services concerned clean drinking water (70.27%).

In the future, schools most frequently expect heavy rainfall causing flooding of schools or landslides (86.49%) and anticipate, in equal proportions, impacts on students' health and lives resulting in illness from various diseases, injury or death from disasters, and impacts

on students' education such as damage to school buildings, suspension of classes, or students leaving the education system (62.16%).

Teachers had moderate levels of knowledge and understanding and were aware of impacts on students (43.24%), with 54.55% reporting never having received training. For students, schools provide teaching on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, mostly integrated into core subjects (70.27%). At present, teachers reported that students had some knowledge but limited or no understanding of global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents (51.35%).

The support that schools require or need in the field of education to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on students is training or learning activities for students (83.78%).

## 8) Prachuap Khiri Khan Province

The most extreme weather incident experienced by schools in Prachuap Khiri Khan Province during the past three years was heavy rainfall causing flooding of schools or landslides (50.00%). This resulted in impacts on students' health, with fewer than 10 students falling ill (37.50%). It also caused damage to school facilities, with partial or minor damage requiring repair and restoration (35.71%), and impacted students' access utilities, essential goods, and services in areas such as clean drinking water, water for use, toilets and sanitation systems, in equal proportions (35.71%).

In the future, schools most frequently expect heavy rainfall causing flooding of schools or landslides (71.43%). They also anticipate impacts on students' health and lives, including illness from various diseases, injury or death from disasters, and impacts on students' access to utilities, essential goods, and services (50.00%). The next most expected impact is on students' education, such as damage to school buildings, suspension of classes, or students leaving the education system (42.86%).

Teachers had both moderate and high levels of knowledge and understanding and were aware of impacts on students, as well as the need to build readiness and the capacity to adapt to and cope with extreme weather incidents and their impacts (42.86%), with 53.85% reporting self-learning. For students, schools provide instruction on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, mostly integrated into core subjects (85.71%). At present, teachers reported that students had moderate knowledge and understanding of global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, and were aware of health impacts (57.14%).

The support that schools require or need in the field of education to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on students is training or learning activities for students and modern learning materials and adequate equipment, in equal proportions (71.43%).

## 9) Phatthalung Province

The most extreme weather incident experienced by schools in Phatthalung Province during the past three years was heavy rainfall causing flooding of schools or landslides (78.13%). This impacted students' access utilities, essential goods, and services, particularly clean drinking water (62.50%).

In the future, schools most frequently expect heavy rainfall causing flooding of schools or landslides (87.50%). They also expect the greatest impact to be on students' access to utilities, essential goods, and services (65.63%), followed by impacts on students' health and lives resulting in illness from various diseases, injury or death from disasters (56.25%).

Teachers had high levels of knowledge and understanding and were aware of impacts on students, as well as the need to build readiness and the capacity to adapt to and cope with extreme weather incidents and their impacts (65.63%), with 60.71% reporting self-learning. For students, schools provide instruction on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, mostly integrated into core subjects (68.75%). At present, teachers reported that students had moderate knowledge and understanding of global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, and were aware of health impacts (75.00%).

The support that schools require or need in the field of education to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on students is modern learning materials and adequate equipment (75.00%).

## 10) Mae Hong Son Province

The most extreme weather incident experienced by schools in Mae Hong Son Province during the past three years was heavy rainfall causing flooding of schools or landslides (75.00%). This incident affected students' access utilities, essential goods, and services, especially clean drinking water (75.00%).

In the future, all schools expect to experience heavy rainfall causing flooding of schools or landslides most frequently (75.00%) and anticipate impacts on students' health and lives, resulting in illness from various diseases, injury or death from disasters (75.00%).

Teachers in all schools have high levels of knowledge and understanding and are aware of the impacts on students, as well as the necessity of building readiness and capacity to adapt to and cope with extreme weather incidents and their impacts, all of which they have learned through self-study. For students, schools provide teaching on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents,

mostly integrated into core subjects (75.00%). At present, teachers report that students have moderate knowledge and understanding of global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, and are aware of health impacts (50.00%).

The support that all schools require in the field of education to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on students is to improve the safety and stability of school buildings and to receive budgetary support for environmental education or climate change education.

### 11) Yala Province

The most extreme weather incident experienced by schools in Yala Province during the past three years was heavy rainfall causing flooding of schools or landslides (70.83%). This incident affected students' access to utilities, essential goods, and services, especially clean drinking water (83.33%).

In the future, schools expect to experience heavy rainfall causing flooding of schools or landslides most frequently (79.17%) and anticipate impacts on students' health and lives, resulting in illness from various diseases, injury or death from disasters (75.00%).

Teachers have moderate levels of knowledge and understanding and are aware of the impacts on students (58.33%), but most have never received training (55.00%). For students, schools provide teaching on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, mostly integrated into core subjects (79.17%). At present, teachers report that students have some knowledge but limited or no understanding of global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents (54.17%).

The support that schools require in the field of education to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on students is teacher training (87.50%) and training or learning activities for students (83.33%).

### 12) Lampang Province

The most extreme weather incidents experienced by schools in Lampang Province during the past three years were heatwaves or prolonged extreme heat and heavy rainfall causing flooding of schools or landslides in equal proportions (41.67%). These incidents affected students' access utilities, essential goods, and services, especially clean drinking water, water for use, toilets, and sanitation systems (41.67%).

In the future, schools expect to experience heatwaves or prolonged extreme heat most frequently (66.67%), followed by heavy rainfall causing flooding of schools or landslides (58.33%), and anticipate impacts on students' health and lives, resulting in illness from various diseases, injury or death from disasters (79.17%).

Teachers have moderate levels of knowledge and understanding and are aware of the impacts on students (50.00%), with 60.00% having learned through self-study. For students, schools provide teaching on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, mostly integrated into core subjects (62.50%). At present, teachers report that students have moderate knowledge and understanding of global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, and are aware of health impacts (41.67%).

The support that schools require in the field of education to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on students is modern learning materials and adequate equipment (91.67%).

### 13) Songkhla Province

The most extreme weather incident experienced by schools in Songkhla Province during the past three years was heavy rainfall causing flooding of schools or landslides (65.31%). This incident affected students' access utilities, essential goods, and services, especially clean drinking water (51.02%).

In the future, schools expect to experience heavy rainfall causing flooding of schools or landslides most frequently (73.47%) and anticipate impacts on students' health and lives, resulting in illness from various diseases, injury or death from disasters (69.39%), as well as impacts on students' education such as damage to school buildings, suspension of classes, or students leaving the education system (53.06%).

Teachers have moderate levels of knowledge and understanding and are aware of the impacts on students (51.02%), with 52.50% having learned through self-study. For students, schools provide teaching on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, mostly integrated into core subjects (73.47%). At present, teachers report that students have moderate knowledge and understanding of global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, and are aware of health impacts (51.02%).

The support that schools require to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on students is modern learning materials and adequate equipment (79.17%).

### 14) Uttaradit Province

The most extreme weather incidents experienced by schools in Uttaradit Province during the past three years were heatwaves or prolonged extreme heat and heavy rainfall causing flooding of schools or landslides, occurring in equal proportions (41.18%). These incidents impacted school buildings and facilities, with 47.06% reporting partial or minor damage to classrooms or school buildings that remained usable but required repair and rehabilitation.

For the future, schools expect to experience heatwaves or prolonged extreme heat most frequently (58.82%), followed by heavy rainfall causing flooding of schools or landslides (47.06%). They also expect impacts on students' health and lives, resulting in illness from various diseases, injury or death from disasters (76.47%), followed by impacts on students' education such as damage to school buildings, suspension of classes, or students leaving the education system (54.71%).

Teachers have high levels of knowledge and understanding and are aware of the impacts on students, as well as the need to build readiness and the capacity to adapt to and cope with extreme weather incidents and their impacts (58.82%), with 50.00% having gained this knowledge through self-learning. For students, schools provide teaching on global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, mostly by integrating it into core subjects (88.24%). At present, teachers report that students have moderate knowledge and understanding of global warming and climate change, its causes, impacts, and preparedness for extreme weather incidents, and are aware of health impacts (64.71%).

The main support that schools require or need in the field of education to build readiness and capacity to adapt to and cope with the impacts of global warming and climate change on children is training or learning activities for students (81.25%).

## Section 2 Experience of Schools with Extreme Weather Incidents over the Past Three Years and Assistance Previously Received

### 1) Extreme weather incidents experienced by schools over the past three years, disaggregated by province

When examining by province the extreme weather incidents that schools have experienced over the past three years, based on the survey of schools in 14 provinces (multiple responses allowed), it was found that:

**Heat waves or periods of extreme heat** lasting several consecutive days were the most frequently experienced extreme weather incident in Kalasin Province (81.25%), followed by Nakhon Ratchasima Province (62.50%), Uttaradit Province (64.71%), Lampang Province (58.33%), and Chumphon Province (55.56%).

**Heavy rainstorms leading to flooding or landslides** were most frequently reported in Narathiwat Province (81.08%), Phatthalung Province (81.25%), Mae Hong Son Province and Yala Province (75.00% each), Songkhla Province (67.35%), and Chiang Rai Province (64.71%).

**Periods of extreme cold lasting several consecutive days** were most frequently reported in Chiang Rai Province (41.18%), followed by Kalasin Province (37.50%), Nakhon Ratchasima Province (37.50%), and Chiang Mai Province (35.71%).

Drought conditions causing shortages of drinking and usable water were most frequently reported in Tak Province (37.50%), followed by Nakhon Ratchasima Province (25.00%), Uttaradit Province (11.76%), and Lampang and Yala Provinces (8.33% each).

Province	Extreme weather incidents experienced by schools over the past three years (multiple responses allowed)			
	Heat waves or periods of extreme heat	Periods of extreme cold lasting several consecutive days	Drought conditions causing shortages of drinking and usable water	Heavy rainstorms leading to flooding or landslides
1) Kalasin (n=32)	81.25%	37.50%	6.25%	9.38%
2) Chumphon (n=18)	55.56%	0.00%	0.00%	61.11%
3) Chiang Rai (n=34)	23.53%	41.18%	5.88%	64.71%
4) Chiang Mai (n=28)	35.71%	35.71%	3.57%	53.57%
5) Tak (n=8)	50.00%	25.00%	37.50%	37.50%
6) Nakhon Ratchasima (n=8)	62.50%	37.50%	25.00%	0.00%
7) Narathiwat (n=37)	16.22%	0.00%	5.41%	81.08%
8) Prachuap Khiri Khan (n=14)	42.86%	7.14%	14.29%	50.00%
9) Phatthalung (n=32)	40.63%	0.00%	6.25%	81.25%
10) Mae Hong Son (n=4)	25.00%	25.00%	0.00%	75.00%
11) Yala (n=24)	41.67%	4.17%	8.33%	75.00%
12) Lampang (n=24)	58.33%	16.67%	8.33%	50.00%
13) Songkhla (n=49)	38.78%	0.00%	0.00%	67.35%
14) Uttaradit (n=17)	64.71%	23.53%	11.76%	41.18%

Figure 23 Extreme Weather Incidents Experienced by Schools in the Past Three Years, Disaggregated by Province

## 2) The Most Extreme Weather Incidents Experienced by Schools over the Past Three Years, Disaggregated by Province

When examining by province the most extreme weather incidents (those causing the greatest impacts and damage) experienced by schools over the past three years, based on the survey of schools in 14 provinces (select one), it was found that:

**Heat waves or periods of extreme heat lasting several consecutive days** were identified as the most severe extreme weather incident most frequently experienced by schools in Kalasin Province (71.88%), followed by Nakhon Ratchasima Province (62.50%), Lampang Province (41.67%), Uttaradit Province (41.18%), and Chumphon Province (44.44%).

**Heavy rainstorms leading to flooding or landslides** were most frequently reported in Narathiwat Province (81.08%), followed by Phatthalung Province (78.13%), Mae Hong Son Province (75.00%), Yala Province (70.83%), Songkhla Province (65.31%), and Chiang Rai Province (52.94%).

Periods of extreme cold lasting several consecutive days were most frequently reported in Chiang Rai Province (26.47%), followed by Nakhon Ratchasima Province (25.00%), Chiang Mai Province (21.43%), Kalasin Province (18.75%), and Uttaradit Province (11.76%).

Severe drought conditions causing shortages of drinking and usable water, though less frequently reported overall, were still present in some provinces, such as Tak Province (25.00%), Nakhon Ratchasima Province (12.50%), Uttaradit Province (5.88%), Narathiwat Province (5.41%), Lampang and Yala Provinces (4.17% each), and Chiang Mai Province (3.57%).

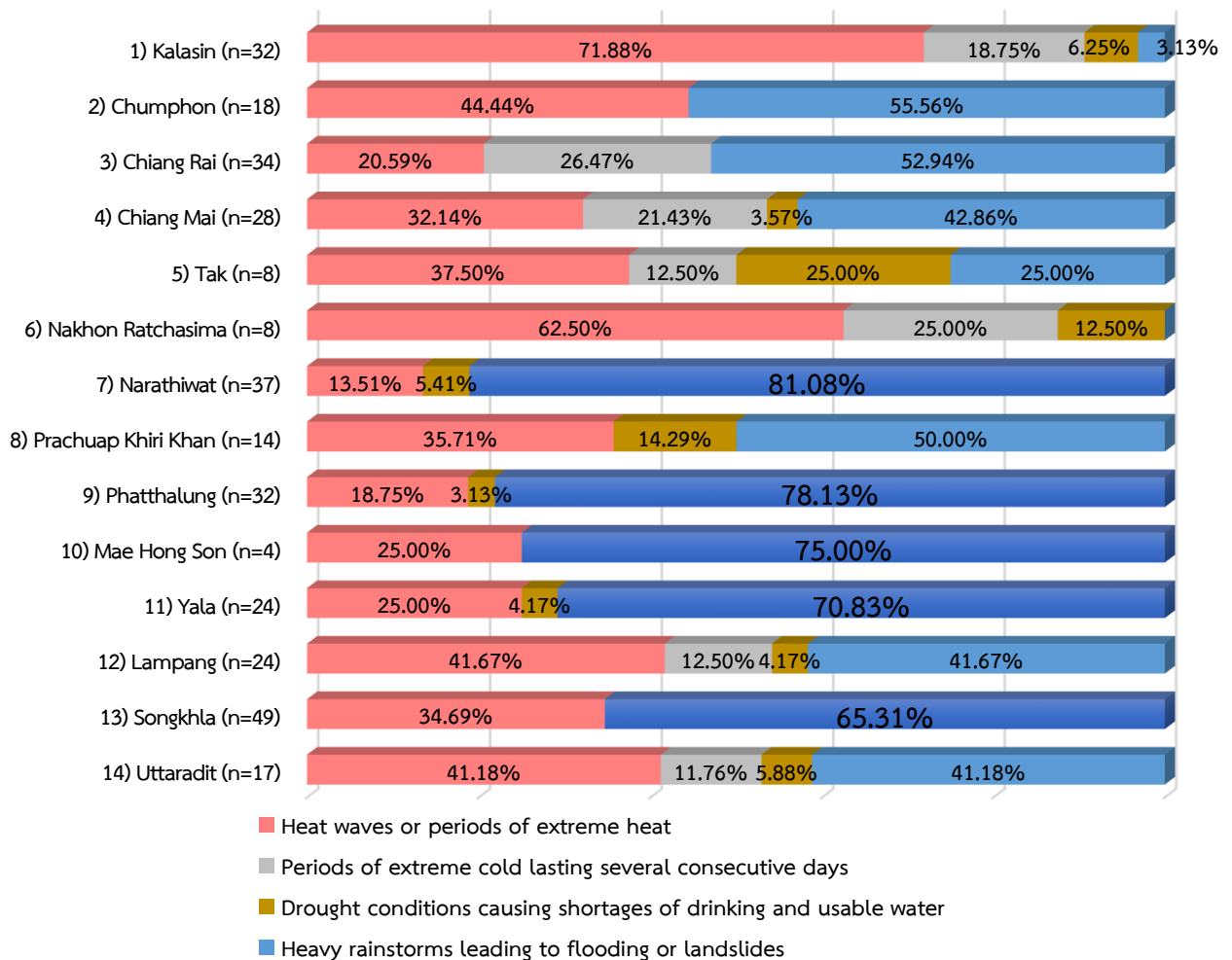


Figure 24 The Most Weather Incidents Experienced by Schools over the Past Three Years, Disaggregated by Province

### 3) Impacts Experienced by Schools and Students from the Most Weather Incidents over the Past Three Years, Disaggregated by Province

When considering by province the most extreme weather incidents that schools have experienced over the past three years, based on the survey of schools in 14 provinces, it was found that the **impact on students' health resulting in illness** was most frequently reported in Yala Province at 79.17%, followed by Chiang Mai Province at 67.86% and Chiang Rai Province at 67.65%.

The **impact on students' health resulting in physical injury** was most frequently reported in Yala Province at 45.83%, followed by Kalasin Province at 43.75% and Phatthalung Province at 31.25%.

The **impact on students' lives** was most frequently reported in Uttaradit Province at 17.65%, followed by Yala Province at 12.50%, Chiang Mai Province at 10.71%, and Kalasin Province at 9.38%.

The **impact on school facilities** was most frequently reported in Phatthalung Province at 71.88%, followed by Narathiwat Province at 70.27% and Tak Province at 62.50%.

The **impact on teaching and learning** was most frequently reported in Narathiwat Province at 72.97%, followed by Phatthalung Province at 65.63% and Songkhla Province at 53.06%.

The **impact on students' educational continuity**, leading to dropouts or leaving the education system, was most frequently reported in Phatthalung Province at 6.25%, followed by Narathiwat Province at 5.41% and Songkhla Province at 2.04%.

The **impact on students' access to public utilities, essential goods, and services** was most frequently reported in Kalasin Province at 81.25%, followed by Chiang Mai Province at 75.00% and Songkhla Province at 79.59%.

The **economic impact on students' families**, resulting in subsequent social issues, was most frequently reported in Phatthalung Province at 34.38%, followed by Yala Province at 33.33% and Uttaradit Province at 11.76%.

Details of these different types of impacts are presented in the following sections.

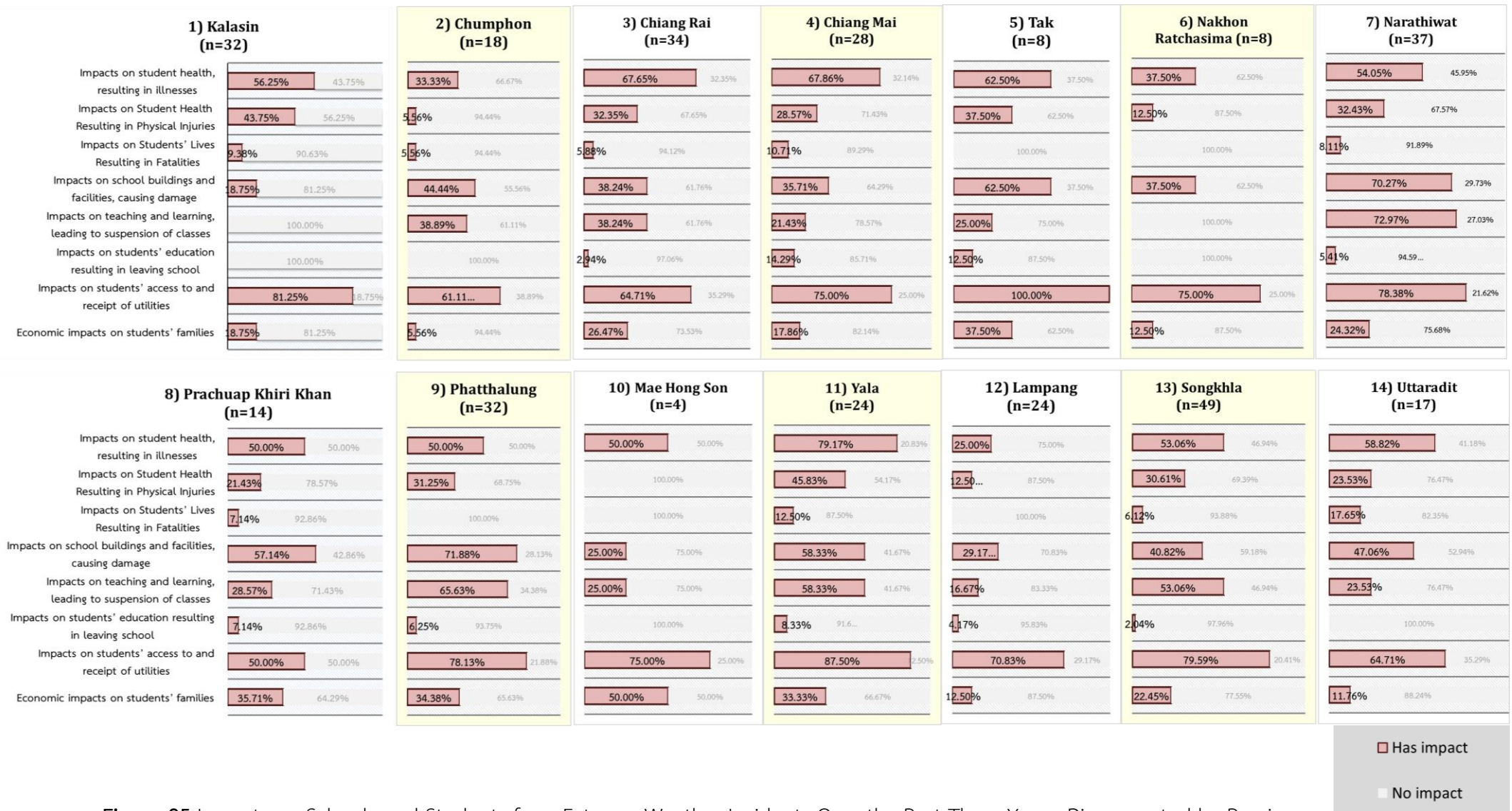


Figure 25 Impacts on Schools and Students from Extreme Weather Incidents Over the Past Three Years, Disaggregated by Province

### 3.1) Impacts on Students' Health Resulting in Illness, Disaggregated by Province

When considering by province the impacts on students' health that have resulted in illness due to heat or high temperatures; vector-borne diseases such as dengue fever; food- and water-borne diseases such as diarrhea; respiratory diseases; malnutrition; or mental health conditions from the most severe weather incidents experienced by schools in the past three years in 14 provinces, the highest proportion was found in Yala Province at 79.17%, followed by Chiang Mai Province at 67.86% and Chiang Rai Province at 67.65%.

The highest proportion of students affected in fewer than 10 instances was reported in Chiang Mai Province at 39.29%, followed by Chiang Rai Province at 38.24% and Prachuap Khiri Khan Province at 35.71%.

The highest proportion of students affected in 11–50 instances was reported in Tak Province, Mae Hong Son Province and Yala Province at equal proportions of 25.00%.

The highest proportion of students affected in 50–100 instances was reported in Phatthalung Province at 18.75% and Tak Province at 12.50%.

The highest proportion of students affected in more than 100 instances was reported in Chiang Rai Province at 14.71%, Narathiwat Province at 13.51% and Kalasin Province at 9.38%.

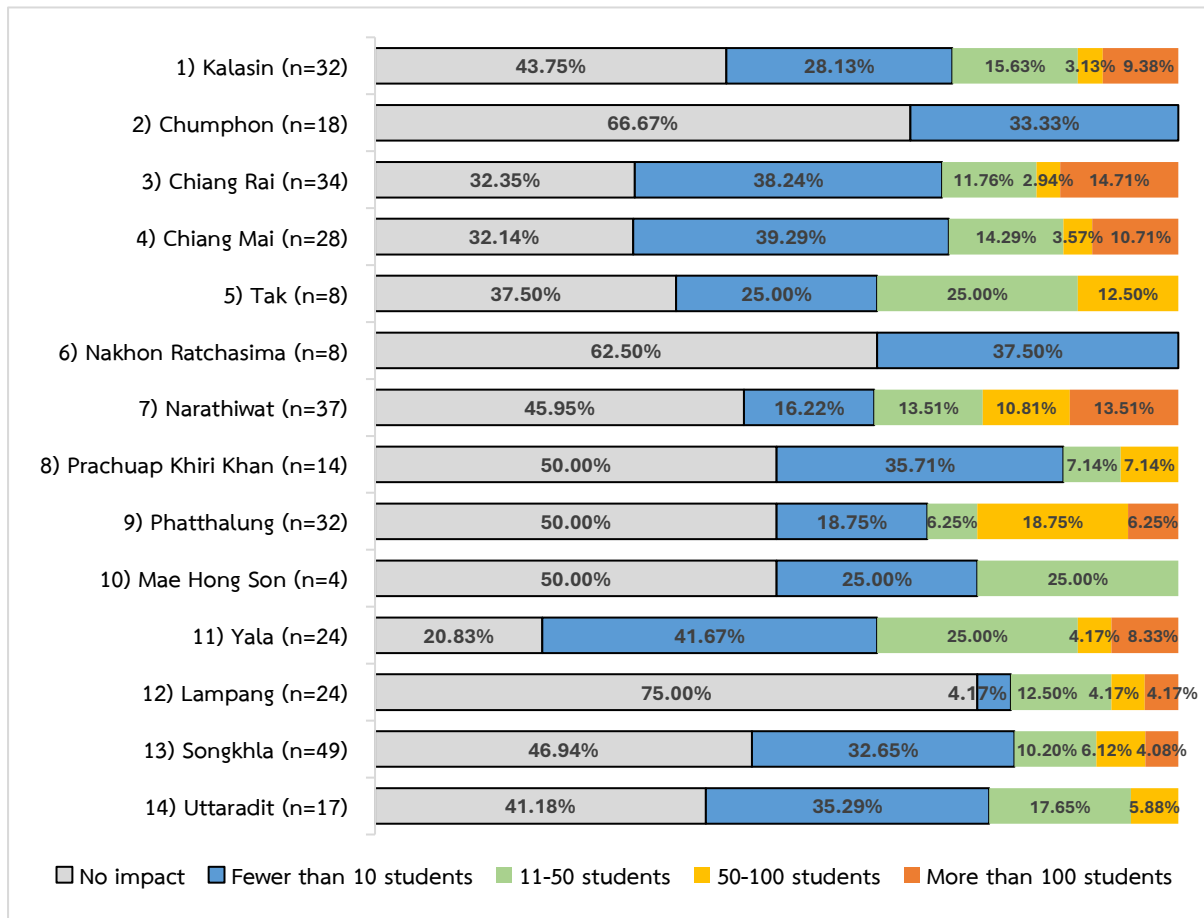


Figure 26 Impacts on Students' Health Resulting in Illness, Disaggregated by Province

### 3.2) Impacts on Students' Health Resulting in Physical Injuries, Disaggregated by Province

When disaggregated by province regarding the impacts on students' health resulting in physical injuries from the most severe extreme weather events experienced by schools over the past three years in 14 provinces, the highest proportion was reported in Kalasin Province at 43.75%, followed by Yala Province at 45.83% and Phatthalung Province at 31.25%. (The results below are presented only where responses exceeded 10%.)

The highest proportion of students affected in 1–3 instances was reported in Tak Province at 37.50%, followed by Yala Province at 29.17% and Kalasin Province at 25.00%.

The highest proportion of students affected in more than 9 instances was reported in Narathiwat Province at 16.22%, followed by Phatthalung Province at 15.63%, Chiang Rai Province at 11.76% and Chiang Mai Province at 10.71%.

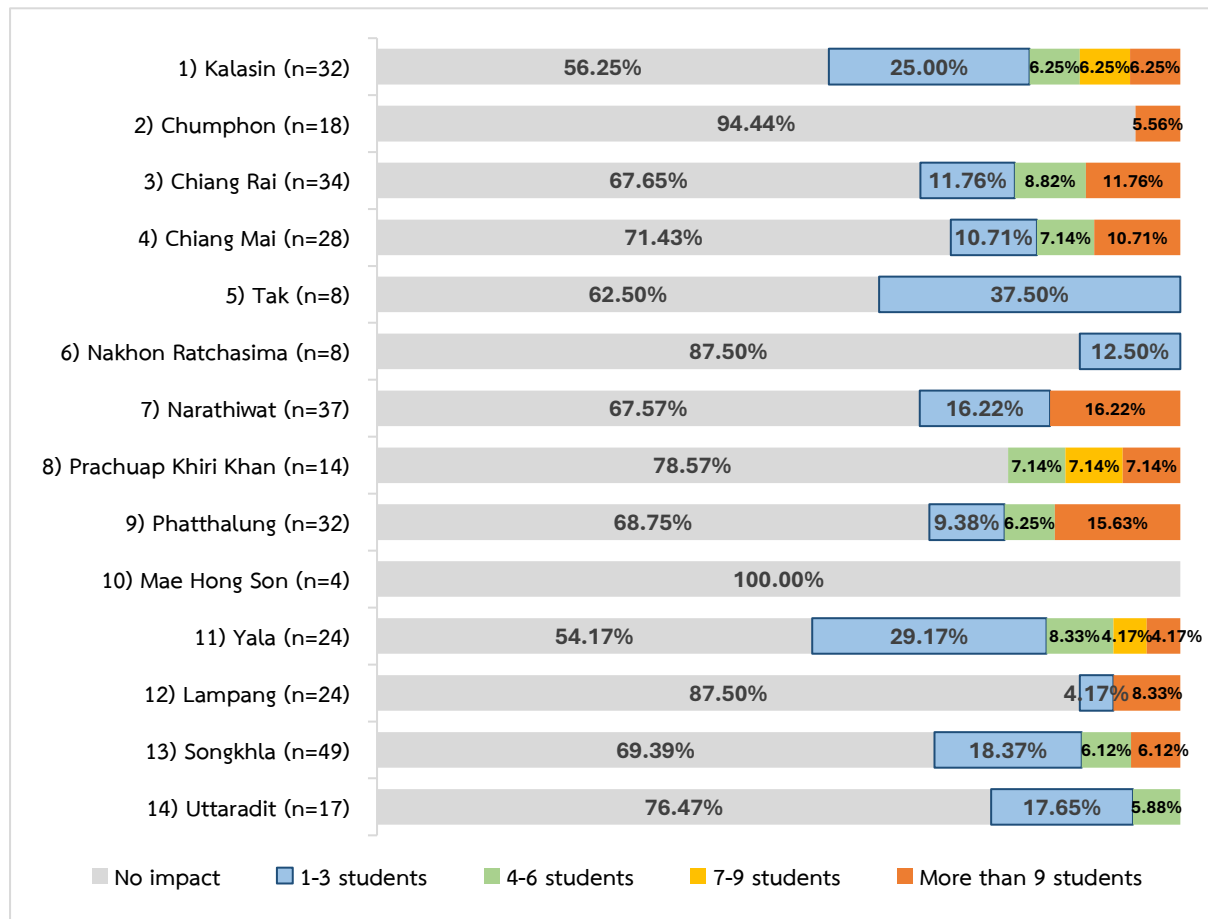


Figure 27 Impacts on Students' Health Resulting in Physical Injuries, Disaggregated by Province

### 3.3) Impacts on Students' Lives, Disaggregated by Province

When disaggregated by province regarding the impacts on students' lives from the most severe extreme weather events experienced by schools over the past three years in 14 provinces, the highest proportion was reported in Uttaradit at 17.65%, followed by Yala Province at 12.50%, Chiang Mai Province at 10.71%, and Kalasin Province at 9.38%. (The results below are presented only where responses exceeded 10%.)

The highest proportion of students affected in 1–3 instances was reported in Uttaradit Province at 11.76%, followed by Kalasin Province at 9.38% and Yala Province at 8.33%.

The highest proportion of students affected in 4–6 instances was reported in Uttaradit Province at 11.76%, followed by Chiang Rai Province at 2.94%.

The highest proportion of students affected in 7–9 instances was reported in Uttaradit Province at 5.88%, followed by Chiang Mai Province at 3.57%.

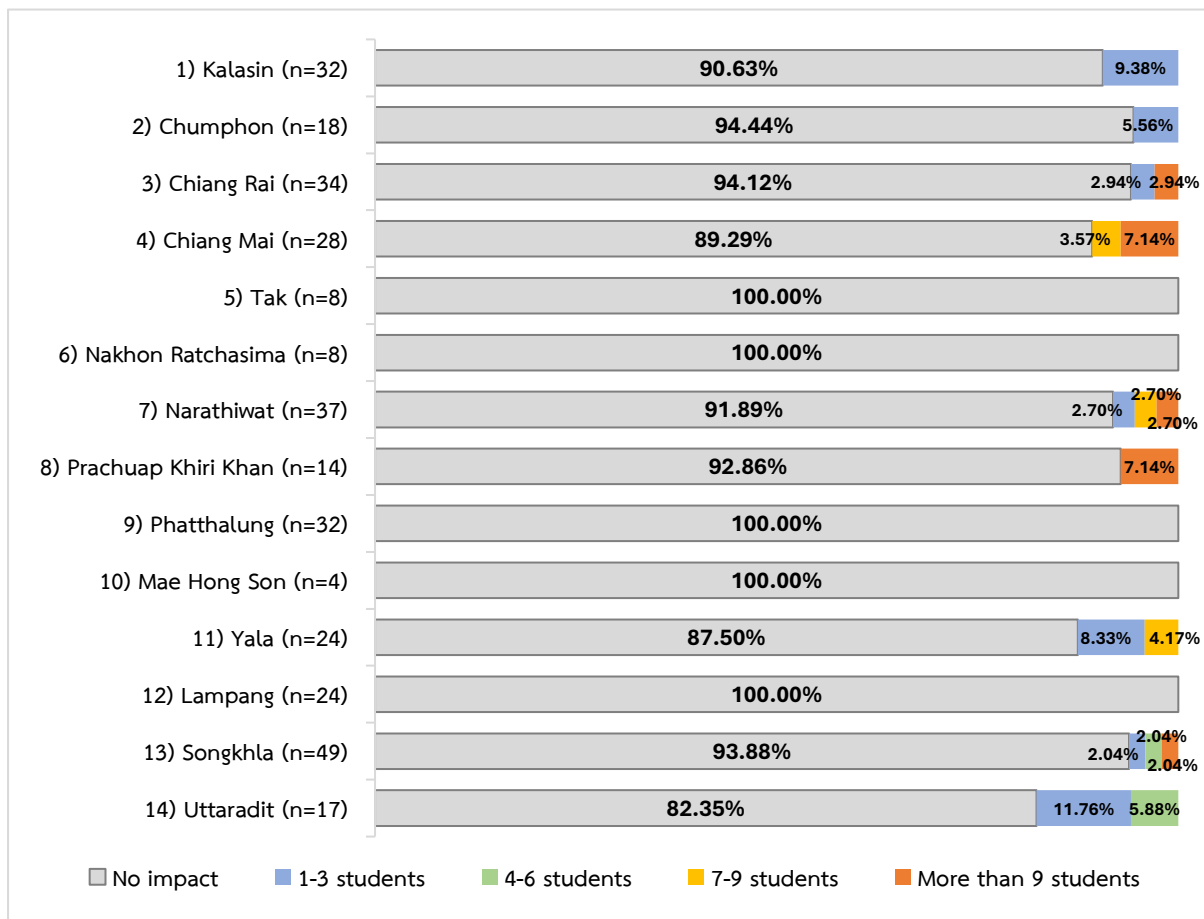


Figure 28 Impacts on Students' Lives, Disaggregated by Province

### 3.4) Impacts on School Buildings and Facilities, Disaggregated by Province

When considering by province the impacts on school buildings and facilities from the most severe extreme weather experienced by schools in the past three years across the 14 provinces surveyed, the highest proportion was found in Phatthalung Province at 71.88%, followed by Narathiwat Province at 70.27% and Tak Province at 62.50%.

Damage limited to teaching and learning equipment was most commonly reported in Phatthalung and Yala Provinces, both at 37.50%, followed by Chumphon Province at 22.22%.

Partial damage to buildings and facilities, which remained usable but required repair and rehabilitation, was most frequently reported in Narathiwat Province at 51.35%, Tak Province at 50.00%, Uttaradit Province at 47.06% and Chiang Mai Province at 28.57%.

For cases where schools were severely damaged or completely destroyed, making them unusable and requiring reconstruction, the highest proportions were found in Prachuap Khiri Khan Province at 7.14%, Chiang Rai Province at 5.88% and Phatthalung Province at 3.13%.

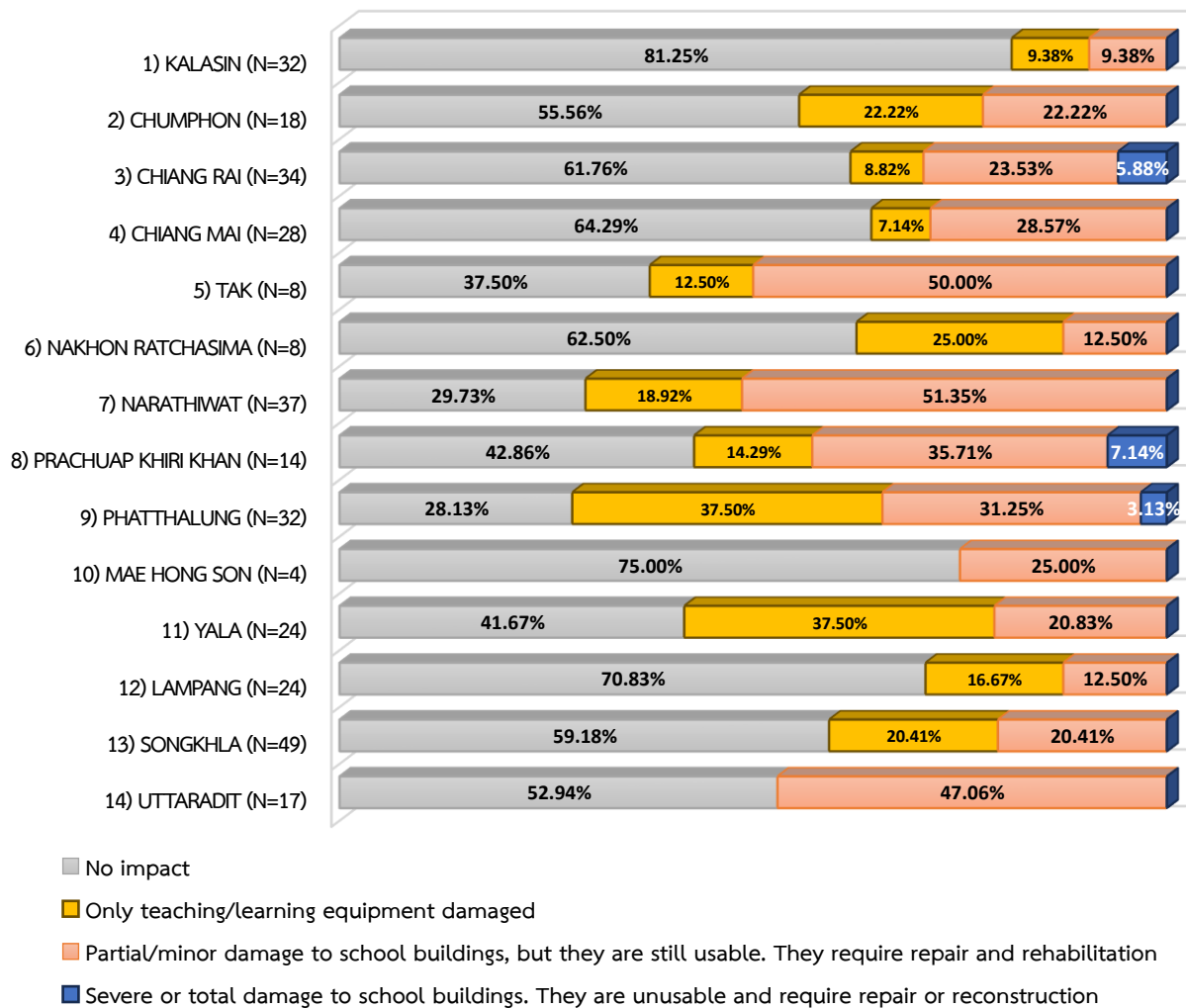


Figure 29 Effects on School Buildings and Facilities, Disaggregated by Province

### 3.5) Effects on Teaching and Learning, Disaggregated by Province

When considering by province the effects on teaching and learning from the most severe extreme weather incidents experienced by schools over the past three years across 14 provinces, the highest proportion was found in Narathiwat Province at 72.97%, followed by Phatthalung Province at 65.63% and Songkhla Province at 53.06%.

Regarding school closures lasting 1–3 days, the highest proportion was reported in Phatthalung Province at 56.25%, followed by Songkhla Province at 44.90%, Chumphon Province at 38.89%, Narathiwat Province at 32.43%, and Yala Province at 29.17%.

For school closures lasting more than three days, the highest proportion was in Narathiwat Province at 40.54%, followed by Yala Province at 29.17%, Chiang Rai Province at 14.71%, Prachuap Khiri Khan Province at 14.29%, and Tak Province at 12.50%.

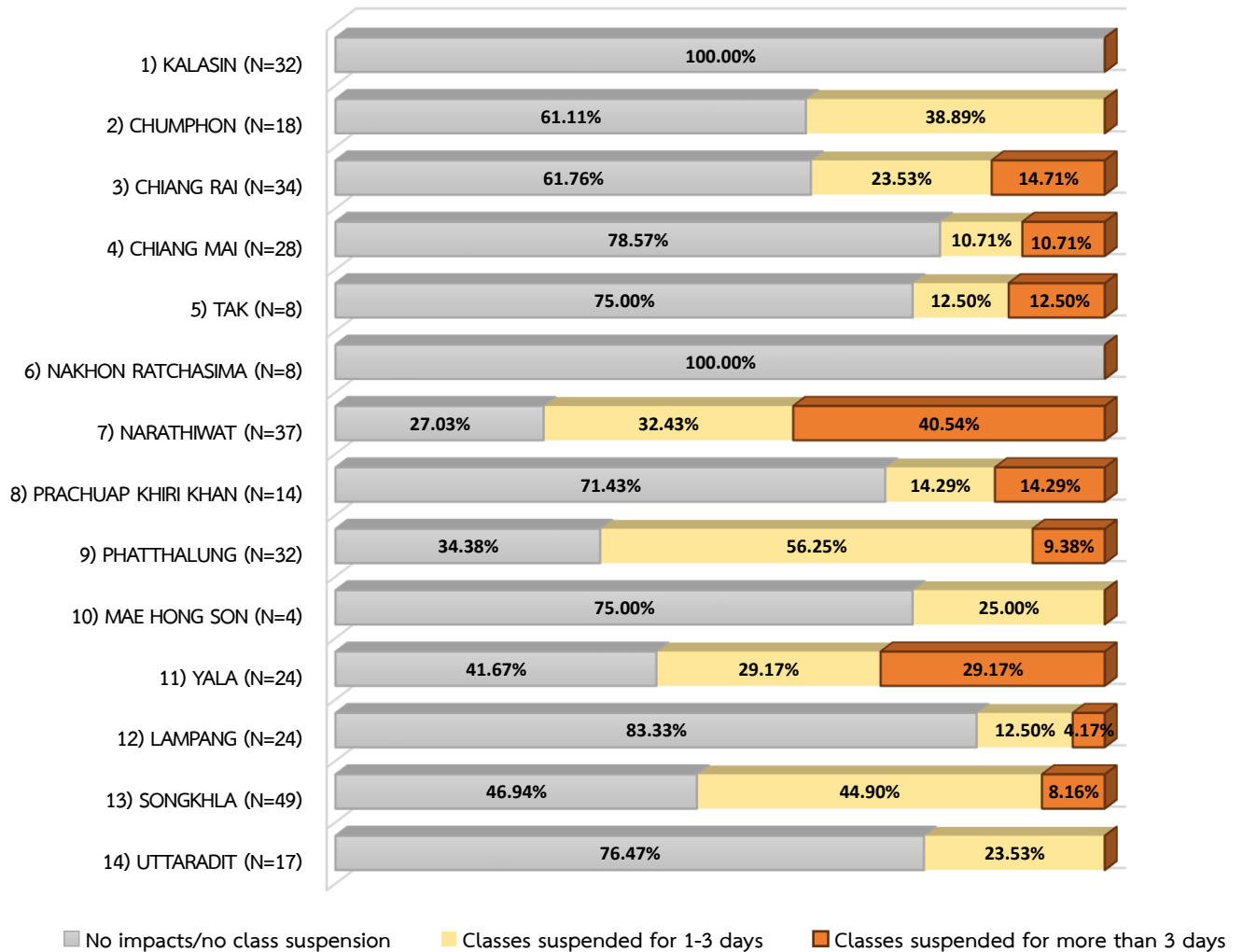


Figure 30 Impacts on Teaching and Learning, Disaggregated by Province

### 3.6) Effects on Students' Educational Continuity Leading to Dropouts or Leaving School, Disaggregated by Province

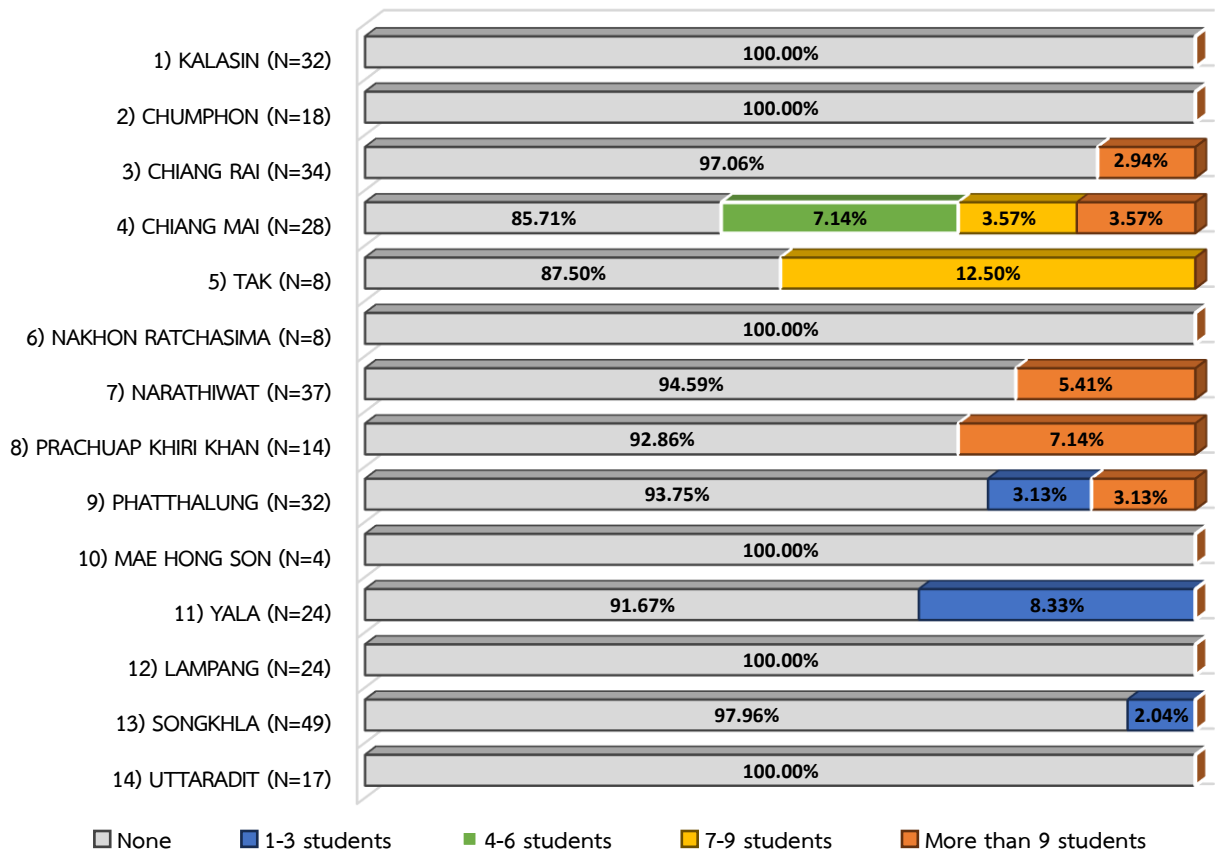
When considering by province the effects on students' educational continuity that resulted in dropouts or leaving school from the most severe extreme weather incidents experienced by schools in the past three years across 14 provinces, the highest proportion was reported in Phatthalung Province at 6.25%, followed by Narathiwat Province at 5.41% and Songkhla Province at 2.04%.

The highest proportion of cases involving 1–3 students affected was reported in Yala Province at 8.33%, followed by Phatthalung Province at 3.13% and Songkhla Province at 2.04%.

Cases involving 4–6 students affected were reported only in Chiang Mai Province at 7.14%.

The highest proportion of cases involving 7–9 students affected was reported in Tak Province at 12.50% and Chiang Mai Province at 3.57%.

For cases involving more than 9 students affected, the highest proportion was reported in Prachuap Khiri Khan Province at 7.14%, followed by Narathiwat Province at 5.41%, Chiang Mai Province at 3.57%, Phatthalung Province at 3.13% and Chiang Rai Province at 2.94%.



**Figure 31** Impacts on Students' Access to Education Leading to Dropouts or Leaving the Education System, Disaggregated by Province

### 3.7) Impacts on Students' Access to Utilities, Essential Goods, and Services, Disaggregated by Province

When disaggregated by province regarding the impacts on students' access to utilities, essential goods and services from the most extreme weather incidents experienced by schools in the past three years across 14 provinces—which had been noted as most prevalent in Kalasin Province at 81.25%, followed by Chiang Mai Province at 75.00% and Songkhla Province at 79.59%—it was found that:

Access to clean and safe drinking water was most affected in Yala Province at 83.33%, followed by Tak Province and Mae Hong Son Province at an equal proportion of 75.00%, Narathiwat Province at 70.27% and Phatthalung Province at 62.50%.

Access to clean and safe food was most affected in Yala at 62.50%, followed by Narathiwat at 54.05%, Phatthalung at 40.63% and Songkhla at 40.82%.

Access to water for use, toilets, and sanitation systems was most affected in Yala at 62.50%, followed by Phatthalung at 56.25%, Narathiwat at 54.05% and Mae Hong Son at 50.00%.

Access to public health and medical services was most affected in Narathiwat at 43.24%, followed by Yala at 37.50% and Chiang Mai at 32.14%.

Access to transportation and travel systems was most affected in Narathiwat at 56.76%, followed by Phatthalung at 46.88% and Chiang Mai at 42.86%.

Access to electricity was most affected in Mae Hong Son at 50.00%, followed by Narathiwat at 48.65%, Chiang Mai at 39.29% and Phatthalung at 31.25%.

Access to the internet and distance communication was most affected in Mae Hong Son at 50.00%, followed by Narathiwat at 45.95% and Yala at 41.67%.

Access to housing and accommodation was most affected in Narathiwat at 54.05%, followed by Phatthalung at 43.75% and Chiang Mai at 35.71%.

Cooling systems and designated cool areas in schools were most affected in Kalasin at 43.75%, followed by Lampang and Tak at an equal proportion of 37.50%.

Social assistance such as shelters or emergency financial aid was most affected in Narathiwat at 40.54% and Uttaradit at 5.88%.

Province	Impacts on Students' Access to and Receipt of Basic Utilities, Essential Goods and Services, Disaggregated by Province (multiple responses allowed)										
	No impact	Safe drinking water	Safe and clean food	Water supply, toilets, and sanitation	Health services, first aid, and treatment	Road/ transportation to and from school	Electricity	Internet and telecommunications (including access to information)	Housing/ shelter	Cooling measures such as fans, cooling technology, or heat shelters at school	Social assistance such as temporary shelters, warming systems, emergency cash support
1) Kalasin (n=32)	18.75%	28.13%	21.88%	31.25%	18.75%	9.38%	9.38%	18.75%	9.38%	43.75%	0.00%
2) Chumphon (n=18)	38.89%	33.33%	16.67%	33.33%	11.11%	38.89%	22.22%	16.67%	22.22%	0.00%	5.56%
3) Chiang Rai (n=34)	35.29%	50.00%	35.29%	41.18%	29.41%	29.41%	26.47%	26.47%	32.35%	23.53%	20.59%
4) Chiang Mai (n=28)	25.00%	46.43%	35.71%	46.43%	32.14%	42.86%	39.29%	28.57%	35.71%	32.14%	25.00%
5) Tak (n=8)	0.00%	75.00%	25.00%	25.00%	25.00%	37.50%	12.50%	25.00%	37.50%	37.50%	0.00%
6) Nakhon Ratchasima (n=8)	25.00%	62.50%	12.50%	37.50%	0.00%	0.00%	12.50%	12.50%	12.50%	25.00%	0.00%
7) Narathiwat (n=37)	21.62%	70.27%	54.05%	54.05%	43.24%	56.76%	48.65%	45.95%	54.05%	13.51%	40.54%
8) Prachuap Khiri Khan (n=14)	50.00%	35.71%	28.57%	35.71%	28.57%	14.29%	14.29%	21.43%	7.14%	7.14%	14.29%
9) Phatthalung (n=32)	21.88%	62.50%	40.63%	56.25%	28.13%	46.88%	31.25%	34.38%	43.75%	21.88%	21.88%
10) Mae Hong Son (n=4)	25.00%	75.00%	0.00%	50.00%	0.00%	25.00%	50.00%	50.00%	0.00%	25.00%	0.00%
11) Yala (n=24)	12.50%	83.33%	62.50%	62.50%	37.50%	50.00%	45.83%	41.67%	41.67%	12.50%	12.50%
12) Lampang (n=24)	29.17%	41.67%	29.17%	41.67%	20.83%	29.17%	25.00%	16.67%	12.50%	37.50%	8.33%
13) Songkhla (n=49)	20.41%	51.02%	40.82%	34.69%	14.29%	32.65%	24.49%	22.45%	26.53%	22.45%	20.41%
14) Uttaradit (n=17)	35.29%	29.41%	29.41%	23.53%	17.65%	17.65%	29.41%	35.29%	17.65%	41.18%	5.88%

Figure 32 Impacts on Students' Access to and Receipt of Basic Utilities, Essential Goods and Services, Disaggregated by Province

### 3.8) Economic Impacts on Students' Families Leading to Social Problems, Disaggregated by Province

When disaggregated by province regarding the economic impacts on students' families from the most severe extreme weather incidents experienced by schools in the past three years across 14 provinces, which had previously been noted as most prevalent in Phatthalung Province at 34.38%, followed by Yala Province at 33.33% and Uttaradit Province at 11.76%, it was found that:

The issue of students needing to work for income during childhood was most frequently reported in Tak at 25.00%, followed by Phatthalung Province at 18.75% and Songkhla Province at 16.33%.

The issue of students dropping out of school to help with household work was most commonly reported in Prachuap Khiri Khan Province at 28.57%, followed by Tak Province, Nakhon Ratchasima Province, and Yala Province at an equal proportion of 12.50%, and Chiang Rai Province at 11.76%.

The issue of students being displaced or relocated to other places was most frequently reported in Mae Hong Son Province at 50.00%, followed by Chiang Mai Province at 17.86% and Songkhla Province at 16.33%.

Province	Economic Impacts on Students' Families, Disaggregated by Province			
	No impact	Child employment/ labor	Dropping out of school to help the family	Displacement/ relocation
1) Kalasin (n=32)	81.25%	15.63%	3.13%	3.13%
2) Chumphon (n=18)	94.44%	0.00%	0.00%	0.00%
3) Chiang Rai (n=34)	73.53%	11.76%	11.76%	8.82%
4) Chiang Mai (n=28)	82.14%	7.14%	10.71%	17.86%
5) Tak (n=8)	62.50%	25.00%	12.50%	12.50%
6) Nakhon Ratchasima (n=8)	87.50%	0.00%	12.50%	12.50%
7) Narathiwat (n=37)	75.68%	8.11%	5.41%	10.81%
8) Prachuap Khiri Khan (n=14)	64.29%	7.14%	28.57%	7.14%
9) Phatthalung (n=32)	65.63%	18.75%	9.38%	9.38%
10) Mae Hong Son (n=4)	50.00%	0.00%	0.00%	50.00%
11) Yala (n=24)	66.67%	4.17%	12.50%	12.50%
12) Lampang (n=24)	87.50%	8.33%	0.00%	0.00%
13) Songkhla (n=49)	77.55%	16.33%	8.16%	16.33%
14) Uttaradit (n=17)	88.24%	5.88%	5.88%	5.88%

Figure 33 Economic Impacts on Students' Families, Disaggregated by Province

#### 4) Assistance Received by Schools in Connection with Extreme Weather Incidents, Disaggregated by Province

When considering by province the assistance schools received before, during, or after experiencing the most extreme weather incidents in the past three years, based on the survey of schools in 14 provinces, it was found that Lampang Province had the highest proportion of schools that had never received any assistance at 62.50%. However, in many provinces the majority of schools reported having received some form of assistance.

When disaggregated by type of assistance received, it was found that information or early warning before the incident was most commonly received in Phatthalung at 65.00% and Songkhla Province at 59.09%. Training for teachers and students to prepare before the incident was most frequently provided in Nakhon Ratchasima Province at 75.00%, followed by Kalasin Province at 64.54%, and Chiang Mai Province and Tak Province at an equal proportion of 60.00%.

Financial support for the repair and restoration of school facilities after the incident was most frequently reported in Narathiwat Province at 47.62%, followed by Chiang Rai Province at 45.00% and Tak at 40.00%. Health services during or after the incident were most commonly received in Yala at 41.67% and Narathiwat Province at 38.10%.

Provision of food, drinking water, medicines, or consumer goods was most frequently reported in Narathiwat Province at 76.19% and in Chumphon Province and Prachuap Khiri Khan Province at an equal proportion of 50.00%. Assistance in transportation and facilitation of evacuation was most frequently received in Mae Hong Son Province at 33.33%.

Province	The receipt of assistance		Assistance Received by Schools from Extreme Weather Events (multiple responses allowed)						
	No assistance received	Assistance received	Early warning information	Training for teachers and students to help them prepare	Financial assistance for preparedness	Financial support for repair/ rehabilitation of school facilities after the incident	Health assistance during or after the incident	Food, drinking water, medicine, or essential supplies during/after the incident	Transport and evacuation assistance before/during/ after the incident
1) Kalasin (n=32)	59.38%	40.63%	15.38%	61.54%	7.69%	7.69%	23.08%	0.00%	0.00%
2) Chumphon (n=18)	55.56%	44.44%	37.50%	37.50%	0.00%	25.00%	12.50%	50.00%	0.00%
3) Chiang Rai (n=34)	41.18%	58.82%	35.00%	25.00%	0.00%	45.00%	20.00%	35.00%	5.00%
4) Chiang Mai (n=28)	46.43%	53.57%	53.33%	60.00%	0.00%	6.67%	13.33%	26.67%	0.00%
5) Tak (n=8)	37.50%	62.50%	20.00%	60.00%	0.00%	40.00%	20.00%	0.00%	20.00%
6) Nakhon Ratchasima (n=8)	50.00%	50.00%	50.00%	75.00%	0.00%	25.00%	0.00%	0.00%	0.00%
7) Narathiwat (n=37)	43.24%	56.76%	28.57%	14.29%	0.00%	47.62%	38.10%	76.19%	19.05%
8) Prachuap Khiri Khan (n=14)	57.14%	42.86%	16.67%	16.67%	0.00%	33.33%	16.67%	50.00%	0.00%
9) Phatthalung (n=32)	37.50%	62.50%	65.00%	40.00%	5.00%	20.00%	5.00%	30.00%	5.00%
10) Mae Hong Son (n=4)	25.00%	75.00%	33.33%	33.33%	0.00%	33.33%	0.00%	0.00%	33.33%
11) Yala (n=24)	50.00%	50.00%	41.67%	8.33%	0.00%	25.00%	41.67%	41.67%	16.67%
12) Lampang (n=24)	62.50%	37.50%	33.33%	44.44%	0.00%	22.22%	0.00%	22.22%	0.00%
13) Songkhla (n=49)	55.10%	44.90%	59.09%	31.82%	0.00%	36.36%	22.73%	36.36%	0.00%
14) Uttaradit (n=17)	58.82%	41.18%	42.86%	28.57%	14.29%	28.57%	28.57%	14.29%	0.00%

Figure 34 Assistance Received by Schools from Extreme Weather Events, Disaggregated by Province

### Section 3: Schools' Anticipated Experienced with Extreme Weather Incidents in the Future and Assistance Required by Schools in the Future to Cope with Extreme Weather Incidents, Disaggregated by Province

#### 1) Types of Extreme Weather Incidents Anticipated to Occur More Frequently or Become More Severe in the Future, Disaggregated by Province

When considering by province the types of extreme weather incidents that schools anticipate experiencing more frequently or expect to become more severe in the future, based on the survey of schools in 14 provinces, it was found that the most commonly anticipated incidents are heavy rainfall resulting in flooding or subsequent landslides. Schools in Phatthalung Province reported the highest proportion at 87.50%, followed by Narathiwat Province at 86.49% and Yala Province at 79.17%.

Heatwaves or prolonged periods of very high temperatures were most frequently anticipated in Kalasin Province at 84.38%, followed by Chumphon Province and Lampang Province at an equal proportion of 66.67%, and Tak at 62.50%.

Severe drought conditions causing shortages of drinking and domestic water for consecutive days were most commonly anticipated in Nakhon Ratchasima Province and Mae Hong Son Province at an equal proportion of 50.00%, followed by Yala at 29.17% and Kalasin Province at 21.88%.

As for prolonged cold spells, the highest proportion was reported in Chiang Mai Province at 53.57%, followed by Chiang Rai Province at 41.18%, and Kalasin Province and Nakhon Ratchasima Province at an equal proportion of 37.50%.

Province	Types of Extreme Weather Incidents Anticipated to Occur More Frequently or Become More Severe in the Future (select up to two)			
	Heatwaves/prolonged extreme heat	Prolonged extreme cold conditions	Severe drought and lack of rain which caused the school to not have enough water to drink or use for many days	Heavy rainfall and storms causing floods/landslides
1) Kalasin (n=32)	84.38%	37.50%	21.88%	18.75%
2) Chumphon (n=18)	66.67%	5.56%	0.00%	61.11%
3) Chiang Rai (n=34)	26.47%	41.18%	14.71%	76.47%
4) Chiang Mai (n=28)	53.57%	53.57%	14.29%	60.71%
5) Tak (n=8)	62.50%	12.50%	12.50%	37.50%
6) Nakhon Ratchasima (n=8)	50.00%	37.50%	50.00%	50.00%
7) Narathiwat (n=37)	27.03%	0.00%	13.51%	86.49%
8) Prachuap Khiri Khan (n=14)	50.00%	0.00%	14.29%	71.43%
9) Phatthalung (n=32)	59.38%	0.00%	15.63%	87.50%
10) Mae Hong Son (n=4)	25.00%	25.00%	50.00%	75.00%
11) Yala (n=24)	58.33%	8.33%	29.17%	79.17%
12) Lampang (n=24)	66.67%	25.00%	16.67%	58.33%
13) Songkhla (n=49)	57.14%	8.16%	16.33%	73.47%
14) Uttaradit (n=17)	58.82%	29.41%	11.76%	47.06%

Figure 35 Types of Extreme Weather Incidents Anticipated to Occur More Frequently or Become More Severe in the Future, Disaggregated by Province

## 2) Types of Impacts Anticipated to Occur in Schools, Disaggregated by Province

When considering by province the types of impacts anticipated to occur in schools, based on the survey conducted across 14 provinces, it was found that schools predominantly anticipate being affected by extreme weather incidents in multiple dimensions. By area of impact, the findings show the following:

Health and life impacts on students were most frequently anticipated in Kalasin Province (90.63%), followed by Chiang Mai Province (78.57%) and Uttaradit Province (76.47%).

Educational impacts were most frequently anticipated in Uttaradit Province (64.71%), followed by Nakhon Ratchasima Province (62.50%) and Narathiwat Province (62.16%).

Impacts on access to essential infrastructure and services were most frequently anticipated in Phatthalung Province (65.63%), followed by Lampang Province (58.33%) and Narathiwat Province (51.35%).

Economic impacts on students' families were most frequently anticipated in Chumphon Province (55.56%), followed by Phatthalung Province (53.13%), and Nakhon Ratchasima and Mae Hong Son Provinces equally (50.00%).

Province	Types of Impacts Anticipated to Occur in Schools (select up to two)			
	Health and lives of students which will cause students to suffer from illness, injuries or death due to disasters)	Students' education due to damage to school buildings/ facilities and classrooms, suspension of teaching or students dropping out from school	Students' access to various essential utilities and services	Economic impacts on students' families, leading to social problems such as child labor, displacement or other impacts
1) Kalasin (n=32)	90.63%	15.63%	21.88%	25.00%
2) Chumphon (n=18)	61.11%	55.56%	38.89%	55.56%
3) Chiang Rai (n=34)	55.88%	44.12%	35.29%	29.41%
4) Chiang Mai (n=28)	78.57%	53.57%	50.00%	25.00%
5) Tak (n=8)	75.00%	37.50%	37.50%	25.00%
6) Nakhon Ratchasima (n=8)	62.50%	62.50%	25.00%	50.00%
7) Narathiwat (n=37)	62.16%	62.16%	51.35%	21.62%
8) Prachuap Khiri Khan (n=14)	50.00%	42.86%	50.00%	14.29%
9) Phatthalung (n=32)	56.25%	46.88%	65.63%	53.13%
10) Mae Hong Son (n=4)	75.00%	50.00%	50.00%	50.00%
11) Yala (n=24)	75.00%	54.17%	50.00%	29.17%
12) Lampang (n=24)	79.17%	41.67%	58.33%	29.17%
13) Songkhla (n=49)	69.39%	53.06%	44.90%	36.73%
14) Uttaradit (n=17)	76.47%	64.71%	41.18%	17.65%

Figure 36 Types of Impacts Anticipated to Occur in Schools, Disaggregated by Province

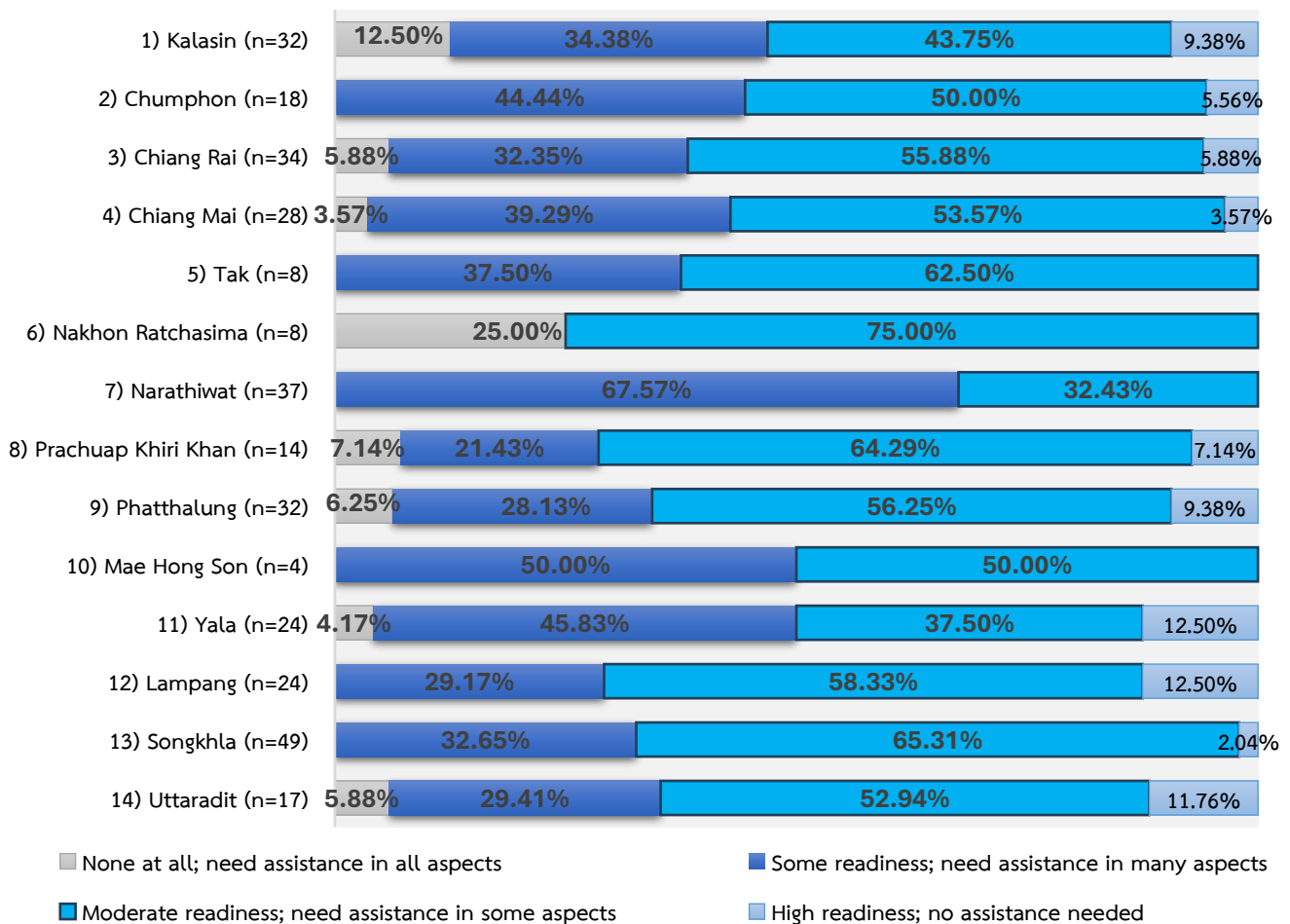
### 3) Current readiness and capacity of schools, students and staff to adjust to and respond to future extreme weather incidents, disaggregated by province

When looking at the provinces regarding the current readiness and capacity of schools, students and staff to adjust to and respond to future extreme weather incidents, most schools reported a medium level of readiness and require support in some areas. This was highest in Nakhon Ratchasima Province at 75.00%, followed by Songkhla Province at 65.31% and Prachuap Khiri Khan Province at 64.29%.

Schools with only partial readiness and requiring support in many areas were most frequently reported in Narathiwat Province at 67.57%, followed by Yala Province at 45.83% and Chumphon Province at 44.44%.

Schools with a high level of readiness and no need for support were reported most often in Lampang and Yala Provinces at 12.50% each, followed by Uttaradit Province at 11.76% and Kalasin and Phatthalung Provinces at 9.38% each.

Schools with no readiness at all and needing support in all areas were reported most often in Nakhon Ratchasima Province at 25.00%, followed by Kalasin Province at 12.50% and Uttaradit Province at 5.88%.



**Figure 37** Current Readiness and Capacity of Schools, Students and Personnel to Adapt to and Cope with Extreme Weather in the Future, Disaggregated by Province

#### 4) Shortages of Essential Goods and Assistance Required by Schools to Address Future Extreme Weather Incidents, in Both the Short and Long Term, Disaggregated by Province

When examining by province the goods and assistance schools lack and need to receive in order to address future extreme weather incidents, both in the short and long term, it was found that schools most frequently required assistance with access to nearby and timely public health services. This was highest in Mae Hong Son Province at 100.00%, followed by Tak Province at 75.00% and Songkhla Province at 65.31%. Schools also needed assistance with access to clean and safe drinking water, with the highest need in Narathiwat Province at 81.08%, followed by Mae Hong Son Province at 75.00% and Yala Province at 70.83%.

Schools further reported a need for support regarding food, medicine, and essential consumer goods, with the highest demand in Narathiwat Province at 81.08%, followed by Chiang Mai Province at 71.43% and Chiang Rai Province at 70.59%. Assistance with access to the internet and remote communications was needed most in Narathiwat Province at 62.16%, followed by Yala Province at 45.83% and Chiang Mai Province at 42.86%. With respect to access to emergency electricity supply, the greatest need was in Narathiwat Province at 62.16%, followed by Chiang Mai Province at 53.57% and Chumphon Province at 38.89%.

The need for vehicles and logistical support for evacuation, either in advance or during an incident, was highest in Narathiwat Province at 62.16%, followed by Mae Hong Son and Chiang Mai Provinces at 50.00% each. Schools also required clear and reliable advance information or early warnings on extreme weather incidents, with the highest proportion in Chiang Mai Province at 75.00%, followed by Narathiwat Province at 70.27% and Songkhla Province at 63.27%.

Financial assistance before or after an incident, for prevention, preparation, or recovery, was most needed in Narathiwat Province at 81.08%, followed by Yala Province at 66.67% and Lampang Province at 54.17%. Support for strengthening existing school structures to withstand extreme weather incidents was highest in Nakhon Ratchasima Province at 87.50%, followed by Chiang Mai Province at 85.71% and Uttaradit Province at 47.06%.

Schools also indicated a need for training teachers to build knowledge and understanding of global warming and extreme weather so that they can adapt and respond to the conditions frequently experienced by schools. This was highest in Nakhon Ratchasima Province at 87.50%, followed by Chiang Mai Province at 85.71%. Likewise, schools needed support to train or organise learning activities for students to build knowledge and understanding of global warming and extreme weather incidents, or to implement educational activities enabling students to adapt and respond to the conditions frequently experienced by schools. This was highest in Chiang Mai Province at 92.86%, followed by Uttaradit Province at 82.35% and Narathiwat Province at 64.86%.

Province	Lacking of Goods and Assistance Needed by Schools to Cope with Extreme Weather Incidents in the Future, in Both the Short and Long Term (multiple responses allowed)										
	Nearby and rapid health service	Safe drinking water	Food, medicine, and essential supplies	Access to the internet and long-distance communication tools	Access to electricity during emergencies	Transport and evacuation support before or during incidents	Clear and reliable advance warning of extreme weather incidents	Financial assistance before/after incidents for prevention, preparedness or recovery purposes	Strengthening existing school infrastructure to withstand extreme weather incidents	Teacher training on global warming and extreme weather incidents to help schools adapt and deal with extreme weather incidents which often impact them	Student training or educational activities to equip students with knowledge and understanding of global warming and extreme weather incidents to help them adapt and prepare for extreme weather incidents which often impact their school
1) Kalasin (n=32)	59.38%	56.25%	37.50%	25.00%	15.63%	28.13%	34.38%	37.50%	31.25%	65.63%	62.50%
2) Chumphon (n=18)	27.78%	44.44%	50.00%	22.22%	38.89%	38.89%	72.22%	44.44%	44.44%	55.56%	66.67%
3) Chiang Rai (n=34)	47.06%	52.94%	70.59%	35.29%	44.12%	44.12%	70.59%	44.12%	47.06%	52.94%	67.65%
4) Chiang Mai (n=28)	64.29%	57.14%	71.43%	42.86%	53.57%	50.00%	75.00%	46.43%	39.29%	85.71%	92.86%
5) Tak (n=8)	75.00%	62.50%	62.50%	25.00%	37.50%	37.50%	50.00%	50.00%	50.00%	50.00%	62.50%
6) Nakhon Ratchasima (n=8)	50.00%	37.50%	62.50%	12.50%	50.00%	25.00%	50.00%	37.50%	37.50%	87.50%	87.50%
7) Narathiwat (n=37)	59.46%	81.08%	81.08%	62.16%	62.16%	62.16%	70.27%	81.08%	51.35%	64.86%	64.86%
8) Prachuap Khiri Khan (n=14)	42.86%	42.86%	42.86%	28.57%	35.71%	35.71%	57.14%	50.00%	42.86%	71.43%	71.43%
9) Phatthalung (n=32)	62.50%	56.25%	65.63%	34.38%	28.13%	40.63%	56.25%	62.50%	40.63%	46.88%	65.63%
10) Mae Hong Son (n=4)	100.00%	75.00%	50.00%	25.00%	50.00%	50.00%	50.00%	50.00%	50.00%	25.00%	25.00%
11) Yala (n=24)	58.33%	70.83%	66.67%	45.83%	50.00%	54.17%	37.50%	66.67%	33.33%	70.83%	62.50%
12) Lamphang (n=24)	54.17%	54.17%	50.00%	25.00%	25.00%	29.17%	66.67%	54.17%	54.17%	66.67%	70.83%
13) Songkhla (n=49)	65.31%	59.18%	53.06%	40.82%	46.94%	38.78%	63.27%	53.06%	42.86%	61.22%	65.31%
14) Uttaradit (n=17)	47.06%	58.82%	52.94%	47.06%	41.18%	23.53%	64.71%	47.06%	47.06%	58.82%	82.35%

Figure 38 Lacking of Goods and Assistance Needed by Schools to Cope with Extreme Weather Incidents in the Future, in Both the Short and Long Term, Disaggregated by Province

### 5) Environmental Issues or Pollution Faced by Schools and Their Need for Assistance, Disaggregated by Province

When examining by province the environmental issues or pollution faced by schools and their need for assistance across the 14 provinces, the findings are as follows:

The majority of schools experienced environmental issues related to PM 2.5, with the highest proportion in Chiang Mai Province at 85.71%, followed by Lampang Province at 79.17% and Chiang Rai Province at 70.59%.

Waste management issues were most prevalent in Nakhon Ratchasima Province at 50.00%, followed by Tak Province and Mae Hong Son Province at equal proportions of 25.00% and Uttaradit Province at 23.53%.

Water pollution and wastewater issues were most common in Nakhon Ratchasima Province at 25.00%, followed by Tak Province at 20.83% and Chiang Rai Province at 11.76%.

Other air pollution issues, excluding PM 2.5, were most frequently reported in Chumphon Province at 22.22%, followed by Kalasin Province at 18.75% and Yala Province at 16.67%.

Province	Environmental Issues or Pollution Faced by Schools and Their Need for Assistance (multiple responses allowed)				
	None	PM 2.5	Other air pollution apart from PM 2.5	Water pollution/waste water	Waste
1) Kalasin (n=32)	50.00%	25.00%	18.75%	3.13%	6.25%
2) Chumphon (n=18)	66.67%	11.11%	22.22%	0.00%	0.00%
3) Chiang Rai (n=34)	20.59%	70.59%	5.88%	11.76%	8.82%
4) Chiang Mai (n=28)	10.71%	85.71%	7.14%	10.71%	10.71%
5) Tak (n=8)	50.00%	50.00%	12.50%	12.50%	25.00%
6) Nakhon Ratchasima (n=8)	12.50%	50.00%	0.00%	25.00%	50.00%
7) Narathiwat (n=37)	83.78%	2.70%	0.00%	2.70%	8.11%
8) Prachuap Khiri Khan (n=14)	85.71%	7.14%	0.00%	7.14%	0.00%
9) Phatthalung (n=32)	68.75%	3.13%	12.50%	6.25%	6.25%
10) Mae Hong Son (n=4)	25.00%	75.00%	0.00%	0.00%	25.00%
11) Yala (n=24)	58.33%	12.50%	16.67%	20.83%	20.83%
12) Lampang (n=24)	20.83%	79.17%	4.17%	0.00%	8.33%
13) Songkhla (n=49)	48.98%	22.45%	16.33%	6.12%	14.29%
14) Uttaradit (n=17)	35.29%	58.82%	5.88%	5.88%	23.53%

**Figure 39** Environmental Issues or Pollution Faced by Schools and Their Need for Assistance, Disaggregated by Province

## Section 4: Comparative Analysis of Schools' Educational Readiness and Capacity to Cope with Extreme Weather Incidents by Province

### 1) Knowledge and Understanding of Global Warming and Climate Change, Disaggregated by Province

When considering by province the knowledge and understanding of teachers regarding global warming and climate change, it was found that in Mae Hong Son Province all teachers had high levels of knowledge and understanding and were aware of the impacts on students. This was followed by Phatthalung Province, where teachers had moderate to high levels of knowledge and understanding and were aware of the impacts on students (96.88%), and by Uttaradit Province, where teachers had moderate to high levels of knowledge and understanding and were aware of the impacts on students (94.11%). In contrast, Nakhon Ratchasima Province had the highest proportion of teachers with no knowledge or understanding of global warming and climate change (12.50%). The details are as follows:

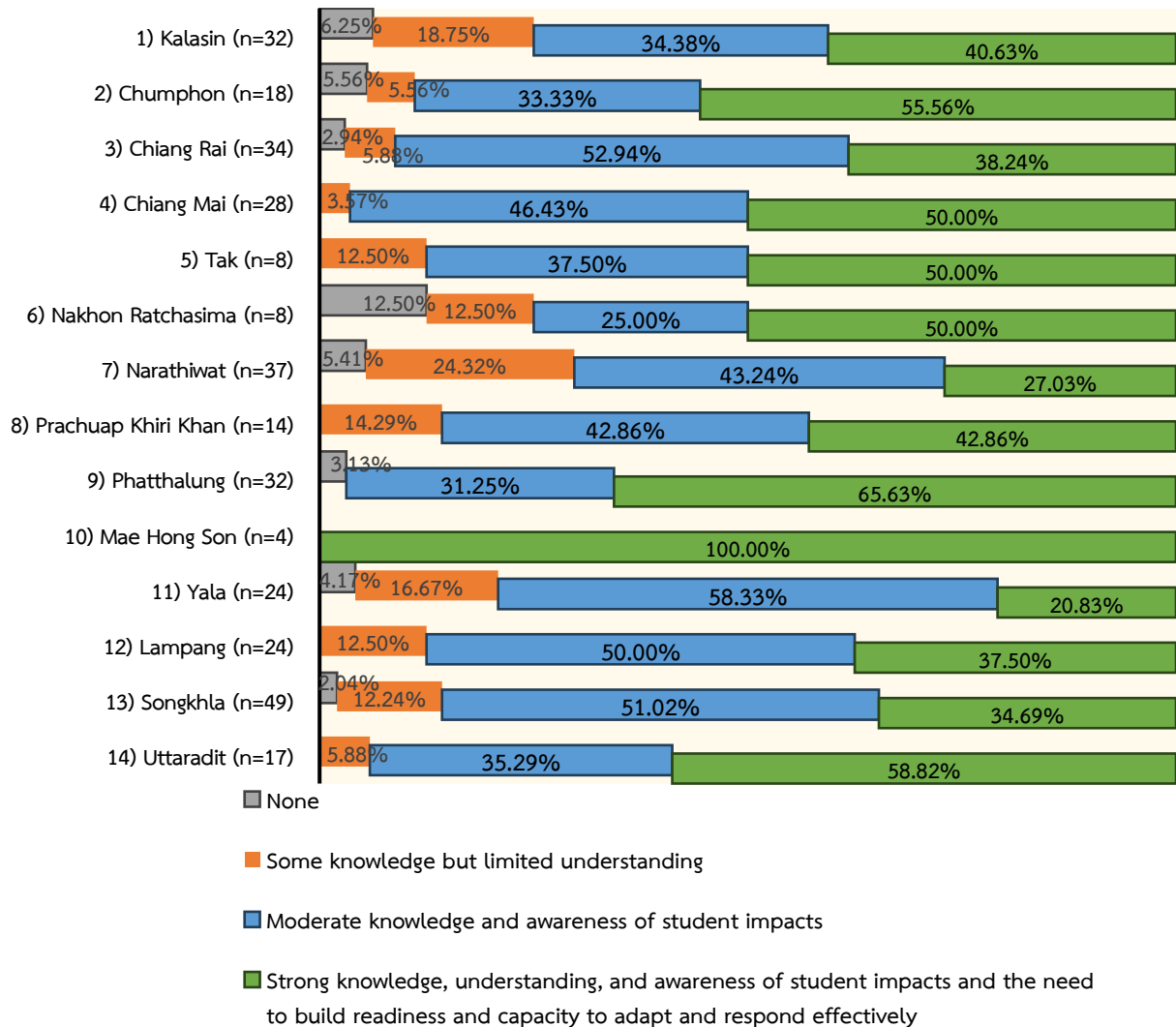
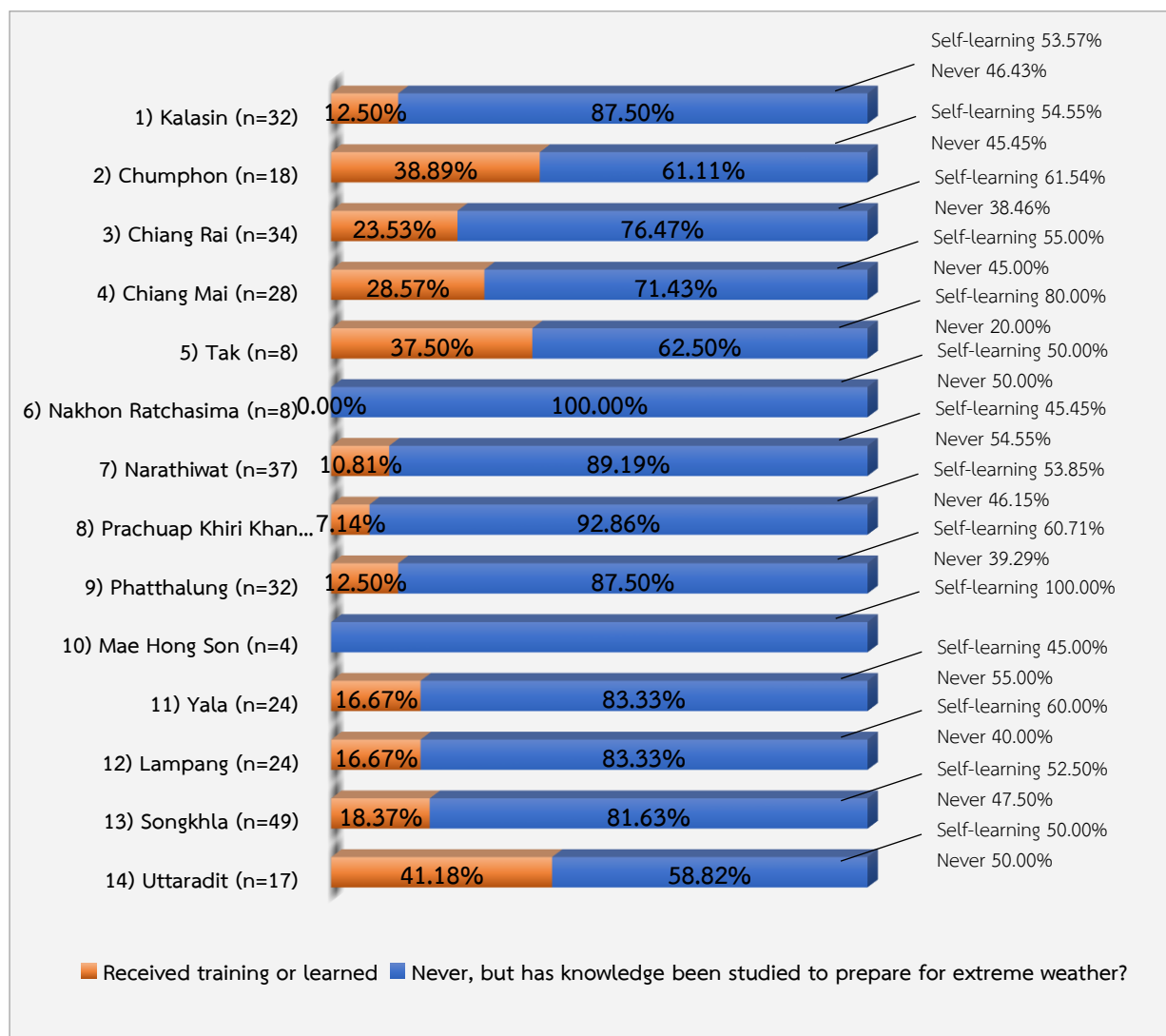


Figure 40 Knowledge and Understanding of Global Warming and Climate Change, Disaggregated by Province

## 2) Training received by teachers for Preparedness to Cope with Extreme Weather Incidents, Disaggregated by Province

When examining by province whether teachers have received training or learned about preparedness to cope with extreme weather incidents frequently experienced by schools and affecting students, it was found that in Mae Hong Son Province all teachers had received training or learned about preparedness to cope with extreme weather incidents. This was followed by Tak Province, where 87.50% of teachers had received such training or learning. In contrast, Nakhon Ratchasima Province recorded the highest proportion of teachers who had not received training or learned about preparedness to cope with extreme weather incidents, at 50.00%. The details are as follows:



**Figure 41** Training or Self-Learning on Preparedness for Extreme Weather Incident, Disaggregated by Province

### 3) Teaching Students to have Knowledge and Understanding of Global Warming and Climate Change, Disaggregated by Province

When examining by province whether teachers have provided instruction to students on knowledge and understanding of global warming and climate change — including its causes, impacts, and preparedness for extreme weather incidents — it was found that in Chumphon Province, Chiang Mai Province, Nakhon Ratchasima Province, Prachuap Khiri Khan Province, Mae Hong Son Province, Lampang Province, and Uttaradit Province, all teachers have incorporated teaching to equip students with knowledge and understanding of global warming and climate change. In contrast, in Tak and Narathiwat Provinces the highest proportions of schools still did not provide such knowledge or teaching on global warming and climate change, at 12.50% and 10.81% respectively. The details are as follows:

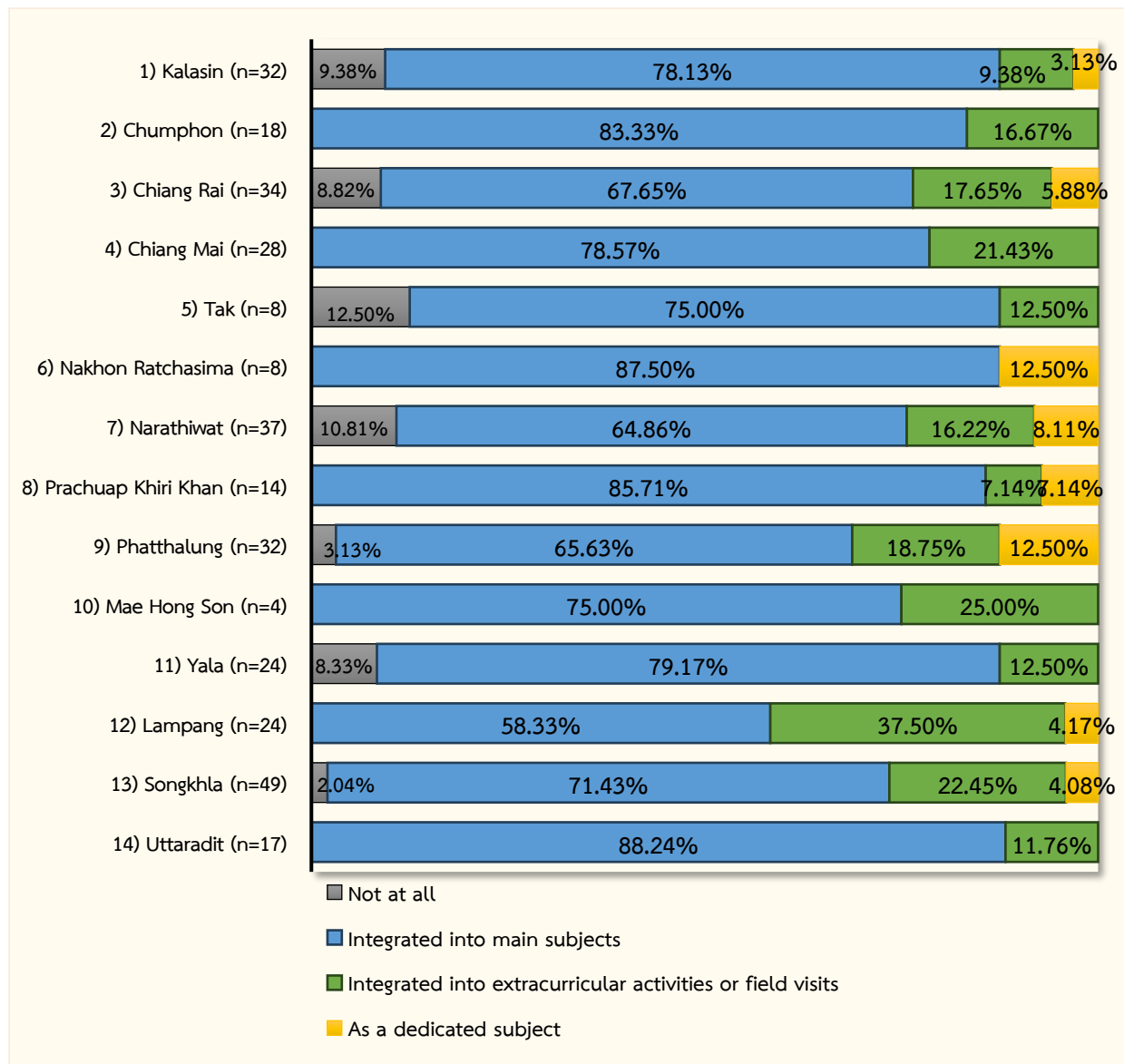
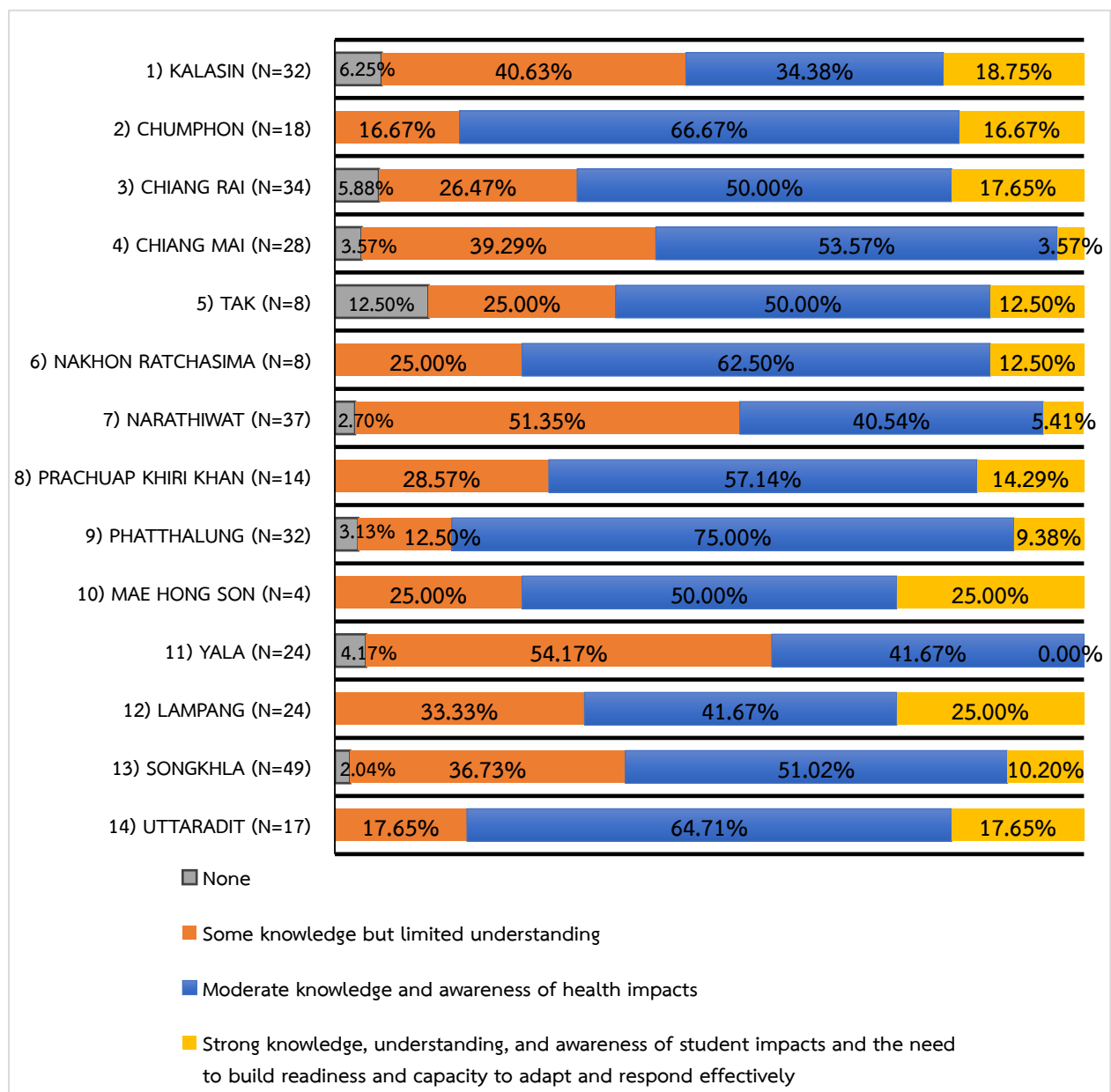


Figure 42 Teaching and Learning on Knowledge and Understanding of Global Warming and Climate Change, Disaggregated by Province

#### 4) Students' Knowledge and Understanding of Global Warming and Climate Change, Disaggregated by Province

When considering by province the teachers' reports on students' knowledge and understanding of global warming and climate change — including its causes, impacts, and preparedness for extreme weather incidents — it was found that in Chumphon Province, Nakhon Ratchasima Province, Mae Hong Son Province, Lampang Province, and Uttaradit Province, all students possessed knowledge of global warming and climate change at levels ranging from low to high. In contrast, in Tak Province the proportion of students with no knowledge or understanding of global warming and climate change was the highest at 12.50%. The details are as follows:



**Figure 43** Students' Knowledge and Understanding of Global Warming and Climate Change, Disaggregated by Province

### **5) Schools' Needs for the Provision of Essential Goods or Educational Support to Build Readiness and Capacity, Disaggregated by Province**

When considering by province the needs of schools for the provision of essential goods or support to build readiness and capacity to adjust to and cope with the impacts of global warming and climate change on students, it was found that the five provinces with the highest demand for modern learning materials and adequate equipment are Lampang Province, Nakhon Ratchasima Province, Chiang Rai Province, Chiang Mai Province, and Uttaradit Province.

The five provinces with the highest demand for support in teacher training or the organization of learning activities for students are Kalasin Province, Nakhon Ratchasima Province, Narathiwat Province, Yala Province, and Uttaradit Province. The details are as follows:

Province	Schools' Needs for Essential Goods or Assistance to Build Readiness and Capacity (multiple responses allowed)							
	Teacher training	Training or learning activities for students	Curriculum and teaching manuals	Modern learning materials and adequate equipment	School buildings improved to be safe and climate-resilient	Budgetary support for environmental/ climate change education	Networks/partnerships with environmental agencies or platforms for information exchange	Climate/environmental education not yet prioritized at school
1) Kalasin (n=32)	81.25%	90.63%	50.00%	62.50%	34.38%	59.38%	34.38%	34.38%
2) Chumphon (n=18)	83.33%	77.78%	38.89%	66.67%	44.44%	61.11%	33.33%	16.67%
3) Chiang Rai (n=34)	60.61%	69.70%	39.39%	84.85%	51.52%	69.70%	51.52%	27.27%
4) Chiang Mai (n=28)	82.14%	78.57%	57.14%	82.14%	32.14%	82.14%	64.29%	46.43%
5) Tak (n=8)	50.00%	62.50%	62.50%	75.00%	50.00%	62.50%	62.50%	50.00%
6) Nakhon Ratchasima (n=8)	62.50%	87.50%	75.00%	87.50%	50.00%	75.00%	62.50%	75.00%
7) Narathiwat (n=37)	78.38%	83.78%	43.24%	72.97%	59.46%	64.86%	37.84%	37.84%
8) Prachuap Khiri Khan (n=14)	64.29%	71.43%	35.71%	71.43%	50.00%	64.29%	42.86%	21.43%
9) Phatthalung (n=32)	50.00%	65.63%	31.25%	75.00%	68.75%	59.38%	34.38%	40.63%
10) Mae Hong Son (n=4)	50.00%	50.00%	25.00%	75.00%	100.00%	100.00%	75.00%	0.00%
11) Yala (n=24)	87.50%	83.33%	37.50%	79.17%	25.00%	66.67%	33.33%	20.83%
12) Lampang (n=24)	58.33%	79.17%	29.17%	91.67%	45.83%	66.67%	58.33%	45.83%
13) Songkhla (n=49)	72.92%	77.08%	45.83%	79.17%	45.83%	58.33%	41.67%	22.92%
14) Uttaradit (n=17)	62.50%	81.25%	37.50%	81.25%	56.25%	68.75%	37.50%	25.00%

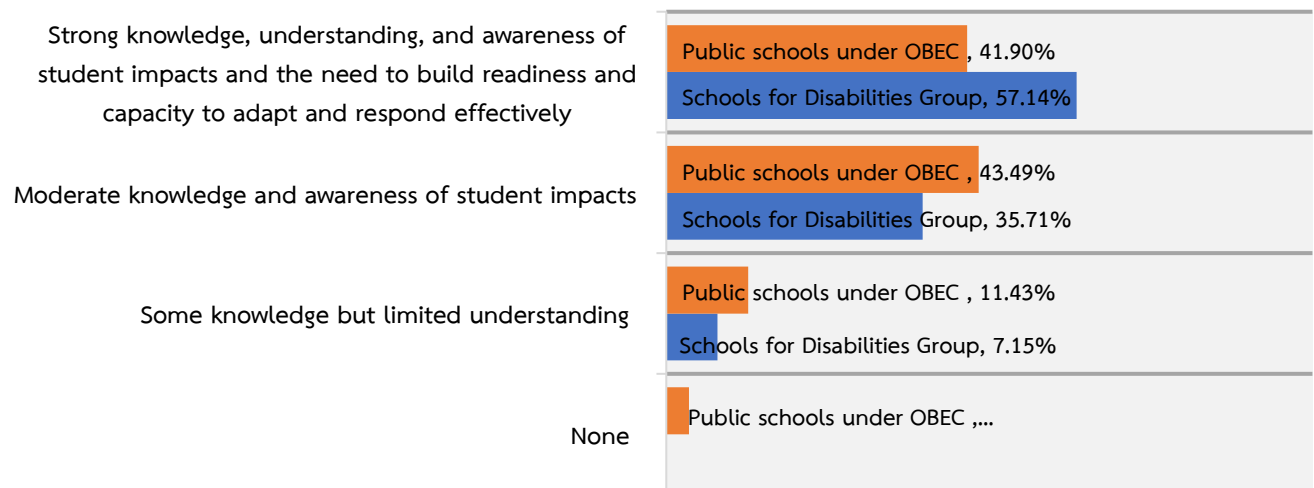
Figure 44 Schools' Needs for Essential Goods or Assistance to Build Readiness and Capacity, Disaggregated by Province

## 10.6 Results of the Overall Analysis (Focusing on Schools’ Readiness and Educational Capacity to Cope with Extreme Weather Incidents): Comparisons between Public Schools and Schools for Disabilities Group under OBEC

This section presents the survey findings comparing two types of schools: 315 public schools under OBEC, representing 12.76% of all 2,468 schools, and 14 schools for disabilities group, representing 26.42% of all 53 schools, totaling 329 schools across 14 provinces. The analysis examines whether these two types of schools differ in terms of readiness and capacity to cope with extreme weather incidents, such as the knowledge and understanding of teachers and students on climate change, as well as their needs for assistance. The survey results can be summarized as follows.

### 1) Knowledge and Understanding of Teachers on Global Warming and Climate Change, Disaggregated by Type of School

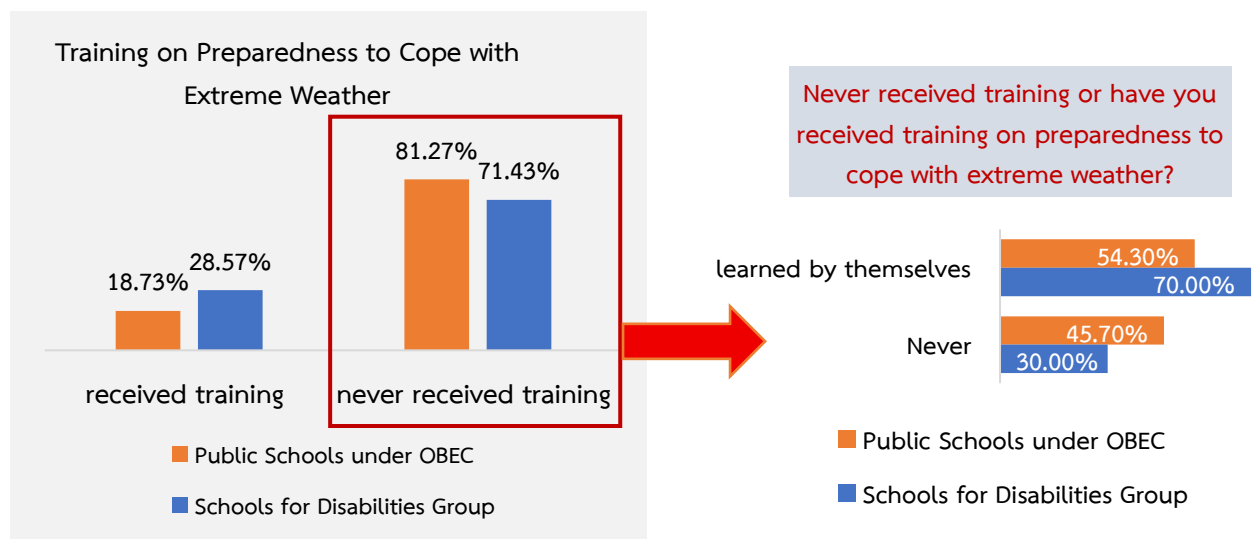
When considering by type of school, teachers in schools for disabilities group reported having knowledge and understanding of global warming and climate change, with moderate-to-high knowledge, understanding, and awareness of the impacts on students at 92.85%. In comparison, the majority of teachers in public schools under OBEC had moderate-to-high knowledge, understanding, and awareness of the impacts on students at 85.39%, although 3.18% of teachers reported having no knowledge or understanding.



**Figure 45** Knowledge and Understanding of Teachers on Global Warming and Climate Change, Disaggregated by Type of School

**2) Training Received to Prepare for Extreme Weather Incidents, Disaggregated by Type of School**

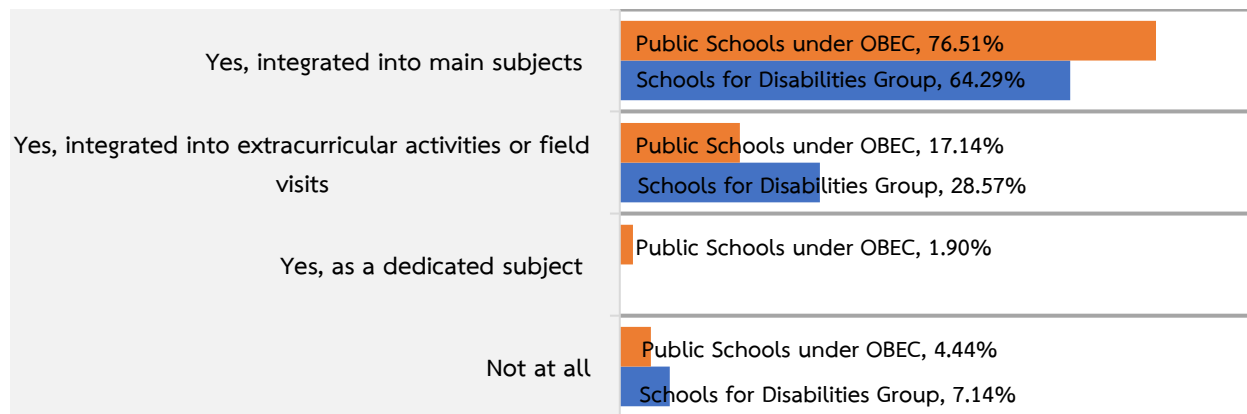
When considering by type of school, the survey found that the majority of teachers in both public schools and schools for disabilities group under OBEC had never received training to prepare for extreme weather incidents frequently experienced by schools and impacting students, at 81.27% and 71.43% respectively. However, even without formal training, most had studied on their own to prepare for extreme weather incidents. Teachers in schools for disabilities group had self-learned more than teachers in public schools under OBEC at 70.00% and 54.30% respectively.



**Figure 46** Teachers’ Training or Self-Learning on Preparedness, Disaggregated by Type of School

### 3) Teaching Students to Have Knowledge and Understanding about Global Warming and Preparing for Extreme Weather Events, Disaggregated by Type of School

When disaggregated by type of school, it was found that public schools under OBEC provided knowledge or instruction to students about global warming and preparing for extreme weather events at 95.55%, with 4.44% not providing such knowledge or instruction. For schools for disabilities group, 92.86% provided knowledge or instruction to students about global warming and preparing for extreme weather events, while 7.14% did not provide such knowledge or instruction.

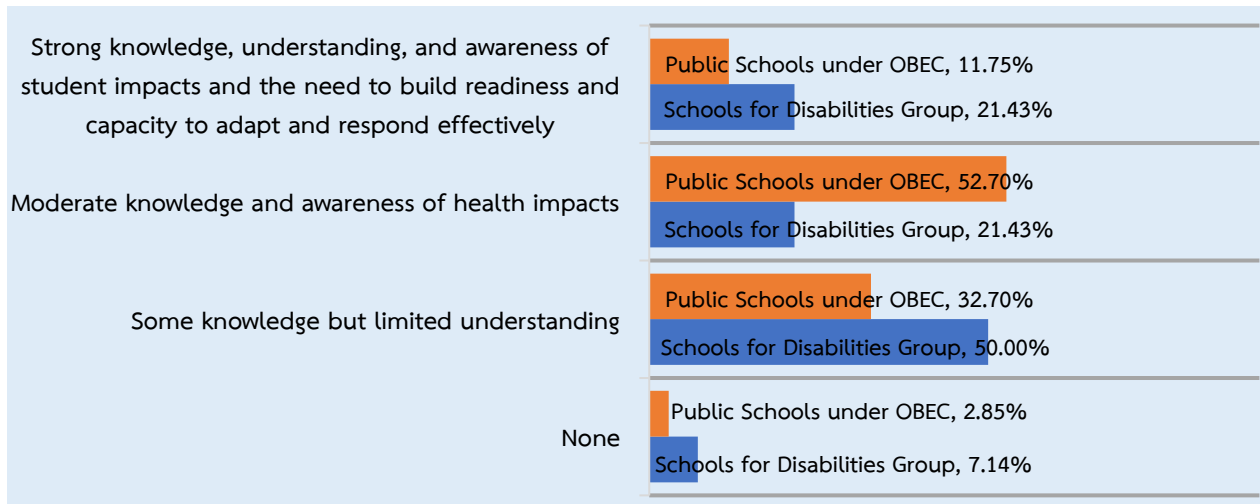


**Figure 47** Teaching Students to Have Knowledge and Understanding about Global Warming and Preparing for Extreme Weather Incidents, Disaggregated by Type of School

#### 4) Students' Knowledge and Understanding Regarding Global Warming and Climate Change, Its Causes, Impacts and Preparedness for Extreme Weather Incidents, Disaggregated by Type of School

When disaggregated by type of school, teachers in public schools under OBEC indicated that most students have knowledge of climate change at levels ranging from low to high combined at 97.15%, while 2.85% have no knowledge or understanding at all. In schools for disabilities group, teachers reported that most students have knowledge of climate change at levels ranging from low to high combined at 92.86%, while 7.14% have no knowledge or understanding at all.

Among students in public schools under OBEC, most have knowledge and understanding at a moderate level and are aware of health impacts at 52.70%. This contrasts with students in schools for disabilities group, where most have low knowledge and no or limited understanding at 50.00%.



**Figure 48** Students' Knowledge and Understanding of Global Warming and Climate Change, Disaggregated by School Type

### 5) Types of Educational Support Needed by Schools to Prepare for Climate Change, Disaggregated by School Type

When disaggregated by school type, it was found that schools for disabilities group expressed higher needs than public schools under OBEC in almost all areas. In particular, the highest need was for teacher training, modern learning materials and adequate teaching equipment, and budgetary support for environmental/climate change education (92.86%). This was followed by the need for curricula and teaching manuals (85.71%), networks or partnerships with environmental agencies or platforms for information exchange (78.57%). In addition, there was a need for student training or educational activities (71.43%), and improving school buildings to be safe and climate-resilient (57.14%).

For public schools under OBEC, the highest need was for student training or educational activities (77.88%), followed by modern learning materials and adequate teaching equipment (76.60%) and teacher training (69.23%). There was also a need for budgetary support for environmental/climate change education (64.42%), and improving school buildings to be safe and climate-resilient (47.44%).

School's need for educational support and assistance, disaggregated by school type

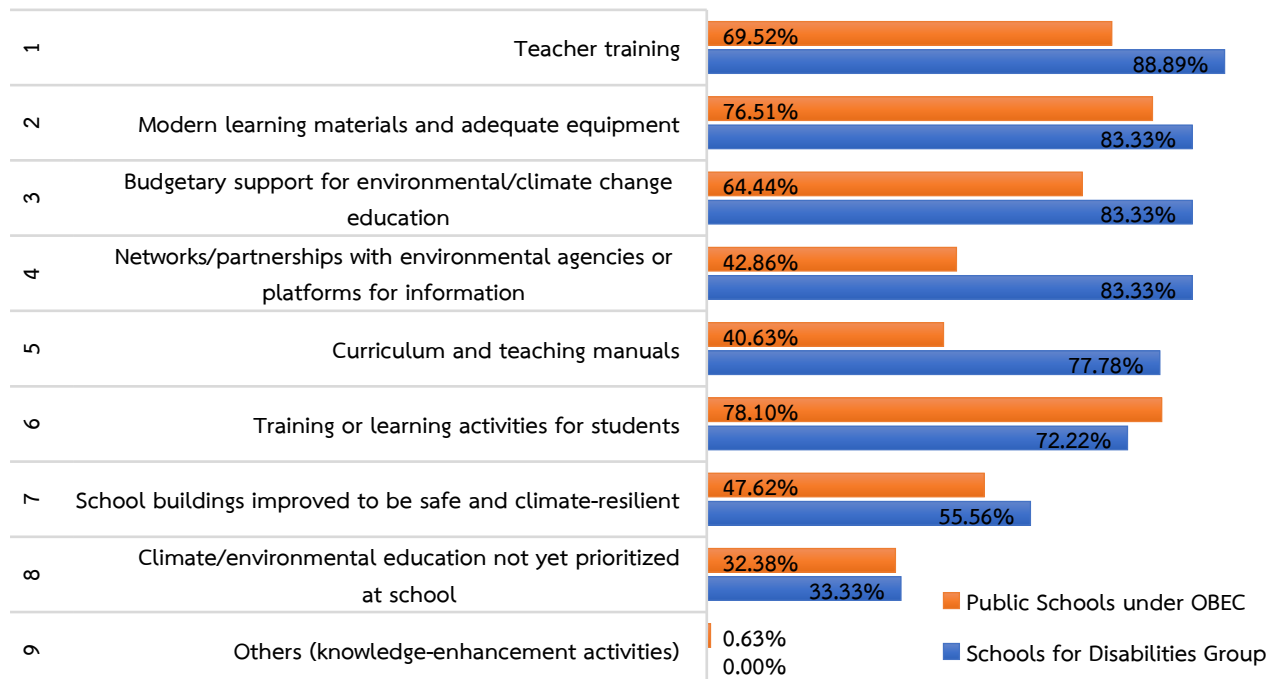


Figure 49 Educational Support Needs and Assistance Required, Disaggregated by Type of School

## Summary of the Comparative Analysis (Focusing on Schools' Readiness and Educational Capacity to Cope with Extreme Weather Incidents) between Public Schools and Schools for Disabilities Group under OBEC

Based on the survey results, teachers in schools for disabilities group who provided information had knowledge and understanding of global warming and climate change, with knowledge, understanding, and awareness of impacts on students at a moderate-to-high level (92.85%) — higher than that of teachers in public schools under OBEC (85.39%). In addition, the majority of teachers in both public schools and schools for disabilities group under OBEC had never received any training on preparedness to cope with extreme weather incidents, accounting for 81.27% and 71.43%, respectively. Nevertheless, most teachers had self-studied to enhance their preparedness for coping with extreme weather conditions.

Regarding knowledge provision to students, 95.55% of teachers in public schools under OBEC and 92.86% in schools for disabilities group reported having provided or taught students about global warming and preparedness for extreme weather incidents. Most teachers integrated such content into core subjects, at 76.51% in public schools under OBEC and 64.29% in schools for disabilities group.

Teachers in public schools under OBEC reported that most students had moderate levels of knowledge and understanding, with awareness of health impacts at 52.70%. This differs from students in schools for disabilities group, half of whom (50.00%) were reported to have some knowledge but limited or no understanding. As for the needs for essential supplies or support, schools for disabilities group showed higher needs than public schools under OBEC in nearly all areas. In particular, they expressed very high needs for teacher training, learning materials, and budget support for environmental education, each at 92.86%. Meanwhile, public schools under OBEC reported high needs for training or learning activities for students at 77.88%, followed by provision of modern learning materials and adequate teaching equipment at 76.60% and teacher training at 69.23%.

## 11. Summary of Overall Survey Findings

The key findings may be summarized as follows:

### Experience of Extreme Weather Incidents in the Past Three Years:

- All schools surveyed had experienced some form of extreme weather incidents. The majority had faced heavy rainfall and storms causing flooding or landslides, accounting for 57.75%.

- The most severe extreme weather incidents reported were also heavy rainfall and storms causing flooding or landslides, accounting for 52.89%, most frequently in southern provinces such as Narathiwat Province (81.08%), Phatthalung Province (78.13%), Yala Province (70.83%), and Songkhla Province (65.31%).

- The most severe incidents had the greatest impact on students' access to essential utilities and services, at 74.77%, and also affected student health. 54.71% of respondents reported student illnesses such as heat-related conditions, vector-borne diseases (e.g., dengue fever), food- and water-borne diseases (e.g., diarrhea), respiratory diseases, malnutrition, or mental health conditions.

- Nearly half of the schools (49.85%) had never received any assistance. Of those that had received help (50.15%), the top five types of assistance were:

1. Early warning information before disasters (41.21%)
2. Training for teachers and students to prepare for disasters (35.15%)
3. Food, drinking water, medicine, or essential supplies during/after disasters (33.94%)
4. Financial support for repair/rehabilitation of school facilities after disasters (29.09%)
5. Health assistance during/after disasters (20.00%)

### Anticipated Extreme Weather Incidents in the Future and Support Required

Most schools expect that heavy rainfall and storms causing flooding or landslides will continue to be the most frequent/severe extreme weather incidents (65.96%). Heatwaves or prolonged extreme heat were expected by 53.80%.

Schools overwhelmingly expect impacts on students' health and lives, including illness, injury, or death from disasters, at 69.00%.

More than half of schools (52.58%) reported having moderate readiness and capacity, needing assistance in some areas to adapt to and cope with anticipated extreme weather. Only 6.08% indicated high readiness with no assistance needed.

The top five areas where schools lack resources and require support to cope with future extreme weather incidents (short- and long-term) were: 1) Student training/educational activities on global warming and extreme weather incidents to enable adaptation (69.00%); 2) Teacher training on global warming and extreme weather incidents to enable adaptation (62.92%); 3) Clear and reliable advance warning of extreme weather incidents (60.18%); 4) Food, medicine, and essential supplies (59.88%); and 5) Safe drinking water (58.97%).

## Current Readiness and Capacity to Deal with Extreme Weather Incidents

The majority of teachers indicated they had moderate to high knowledge and understanding of climate change and were aware of its impacts on students (85.71%). However, 80.85% reported they had never received training in preparedness for extreme weather; among these, 54.89% had self-learned.

Most schools already teach students about global warming and climate change, their causes, impacts, and preparedness, either integrated into main subjects, specific subjects or extracurricular activities (95.44%). Only 4.56% reported no instruction. Among schools providing such teaching, students had some to moderate knowledge and understanding (85%).

Regarding support needs for education to build schools' readiness and capacity to adjust to and address impacts on students from global warming and climate change, most schools identified: **student training or educational activities** (77.61%), Modern learning materials and adequate equipment (77.30%), and Teacher training (70.25%).

## Comparison of the Readiness and Capacity to Deal with Extreme Weather Incidents between Public schools and Schools for Disabilities Group under OBEC

- Teachers in both public schools and schools for disabilities group under OBEC for had similar levels of knowledge and understanding of global warming and climate change. Teachers in schools for disabilities group reported moderate to high levels of knowledge and awareness of student impacts (92.85%) compared with teachers in public schools under OBEC (85.39%).

- The majority of teachers in both types of school had never received training in preparedness for extreme weather (81.27% in public schools under OBEC; 71.43% in schools for disabilities group ). Nevertheless, most had self-learned, with higher rates in schools for disabilities group (70.00%) than in public schools under OBEC (54.30%).

- Teaching students about global warming and preparedness was reported by 95.55% percent of public schools under OBEC and 92.86% of schools for disabilities group; non-teaching was 4.44% and 7.14%, respectively.

- Students in public schools under OBEC mostly had moderate knowledge and awareness of health impacts (52.70%). Students in schools for disabilities group mostly had low knowledge and limited or no understanding (50.00%).

- Schools for disabilities group expressed greater needs than public schools under OBEC in nearly all areas. The highest need was teacher training, learning materials, and budget support for environmental education, each at 92.86%

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## Appendix

## Appendix A: Survey Questionnaire



## Questionnaire

### Survey on the Impacts of Climate Change Experienced by Schools and the Assistance Required to Cope with Extreme Weather Incidents

Fiscal Year 2025

#### Background

Human activities worldwide—such as the use of energy and electricity, travel and transportation, food consumption, consumption of goods and waste disposal—require production processes and fossil fuel combustion, cultivation with fertilizer application, livestock raising, industrial production of raw materials and goods, and waste management. These processes release carbon dioxide and methane, among other greenhouse gases, into the atmosphere. Greenhouse gases allow sunlight to pass through to the Earth’s surface while trapping heat, thereby causing the average surface temperature to rise—this phenomenon is known as global warming.

Rising temperatures are significantly altering the five components of the Earth’s climate system—hydrosphere, cryosphere (e.g., glaciers, ice sheets, snow cover), geosphere, atmosphere, and biosphere. Examples include polar ice melting and rising ocean levels. Compared to the past 30–100 years, the climate is changing substantially, leading to more frequent and extreme weather incidents worldwide, such as:

1. Heatwaves or prolonged extreme heat;
2. Prolonged extreme cold conditions;
3. Severe drought conditions, with no rainfall and ongoing water scarcity;
4. Heavy rainfall and storms leading to floods or landslides.

Such extreme weather incidents cause diverse impacts, including acute shortages of drinking water and food, health and livelihood risks for humans, and extensive property damage. Children in schools across Thailand represent the nation’s future. They are a highly vulnerable group, unprepared to cope with global warming, extreme weather, and their impacts—which are projected to intensify and become more frequent. At the same time, children are a key group for reducing greenhouse gas emissions.

This questionnaire has been prepared to collect information from teachers regarding:

- Their schools’ experiences with extreme weather incidents,
- The impacts incurred,
- Assistance received from various agencies,
- Shortages and needs for future support, and
- Schools’ readiness and capacity to cope with global warming and extreme weather incidents—especially the impacts on the health and lives of students.

The findings will be used by UNICEF Thailand, a United Nations agency mandated to assist and protect the rights and lives of students in Thailand, to inform programme planning for supporting schools and students to adapt to and cope with global warming, extreme weather incidents, and related impacts in both the short and long term.

### Instructions

Please  the box that best reflects your situation.

### Section 1: General Information about the Respondent and School

1. Subject area you teach: .....
2. Grade you teach: .....
3. Gender  1) Male  2) Female  3) LGBTQI+  4) Prefer not to specify
4. Age  1) 21-30 years  2) 31-40 years  3) 41-50 years  4) 51-60 years
5. Name of school ..... Province..... District.....  
Number of years taught at this school ..... years
6. Is your school located in a remote or difficult-to-access area? (e.g., island, high mountain, valley, foothill where year-round access by vehicles is limited, or an area with national security risks)?  
 1) Yes  2) No
7. Current total number of students: .....
8. Is your school a boarding school?  
 1) Yes  2) No
9. Which grade levels does your school offer? Please select all that apply:  
 1) Pre-school  2) Primary school  3) Middle school  4) High school
10. Does your school have students with the following types of disabilities?  
(Select all that apply):  
 1) Visual impairment  2) Hearing impairment  
 3) Physical/mobility/health impairment  4) Intellectual impairment  
 5) Learning disabilities  6) Speech/language impairment  
 7) Behavioral/emotional impairment  8) Autism  
 9) Multiple disabilities  10) No students with disabilities

### Section 2: School Experience with Extreme Weather Incidents in the Past Three Years, Impacts, and Assistance Received

11. In the past three years, has your school experienced extreme weather incidents that caused damage or impacted students' health and lives, school facilities, or teaching and learning? Please indicate the number of times experienced. Please select all that apply:  
 1) Heatwaves or prolonged extreme heat (please indicate the number of times: \_\_\_\_\_)  
 2) Prolonged extreme cold conditions (please indicate the number of times: \_\_\_\_\_)

- 3) Severe drought without rainfall, causing shortages of drinking or utility water for several days (please indicate the number of times: \_\_\_\_)
- 4) Heavy rainfall and storms leading to school flooding or subsequent landslides (please indicate the number of times: \_\_\_\_\_)

**12. Please select the single type of extreme weather incident that was most severe**

(based on the greatest damage or impact to students' health and lives, school facilities, access to utilities, essential goods, and services). Indicate the month and year of the most severe incident. **(Please select only one choice.):**

- 1) Heatwave/prolonged extreme heat  
(Please indicate the month \_\_\_\_\_ and year \_\_\_\_\_ with the most severe incident)
- 2) Prolonged extreme cold conditions  
(Please indicate the month \_\_\_\_\_ and year \_\_\_\_\_ with the most severe incident)
- 3) Severe drought causing prolonged water shortages  
(Please indicate the month \_\_\_\_\_ and year \_\_\_\_\_ with the most severe incident)
- 4) Heavy rainfall and storms causing flooding or landslides  
(Please indicate the month \_\_\_\_\_ and year \_\_\_\_\_ with the most severe incident)

**12.1 Health impacts on students: To what extent did the extreme weather incident selected above (question 12) cause students to suffer from these illnesses (e.g., heat-related illnesses, vector-borne diseases such as dengue fever, food- and water-borne diseases such as diarrhea, respiratory diseases, malnutrition, or mental health conditions)?**

- 1) No impact       2) Fewer than 10 students       3) 11-50 students
- 4) 50-100 students       5) More than 100 students

**12.2 Health impacts on students: To what extent were the physical injuries suffered by students from the disaster caused by the extreme weather incident selected in question 12?**

- 1) No impact       2) 1-3 students       3) 4-6 students
- 4) 7-9 students       5) More than 9 students

**12.3 Health impacts on students: The extreme weather incident selected in question 12 caused a disaster which resulted in how many student fatalities?**

- 1) No impact       2) 1-3 students       3) 4-6 students
- 4) 7-9 students       5) More than 9 students

**12.4 Impacts on school buildings and facilities: To what extent did the extreme weather incident selected in question 12 impact school buildings and facilities?**

- 1) No impact
- 2) Only teaching/learning equipment damaged
- 3) Partial/minor damage to school buildings, but they are still usable.  
They require repair and rehabilitation  
(please specify the buildings' main construction material used.....)

- 4) Severe or total damage to school buildings. They are unusable and require repair or reconstruction.  
(please specify the buildings' main construction material used.....)

**12.5 Impacts on students' education: To what extent did the extreme weather incident selected in question 12 disrupt the students' education?**

- 1) No impacts/no class suspension
- 2) Classes suspended for 1-3 days  
(Please indicate whether compensatory teaching was provided):
  - 1) None
  - 2) Distance learning was provided
  - 3) Other (please specify) .....
- 3) Classes suspended for more than 3 days  
(Please indicate whether compensatory teaching was provided):
  - 1) None
  - 2) Distance learning was provided
  - 3) Other (please specify) .....

**12.6: Impacts on students' education: To what extent did the extreme weather incident selected in question 12 lead to students dropping out of school?**

- 1) None
- 2) 1-3 students
- 3) 4-6 students
- 4) 7-9 students
- 5) More than 9 students

**12.7 Impact on students' access to utilities, essential goods, and services. Which utilities, essential goods, and services were impacted by the incident selected in question 12?**

Please select all that apply:

- 1) Safe drinking water
- 2) Safe and clean food
- 3) Water supply, toilets, and sanitation
- 4) Health services, first aid, and treatment
- 5) Road/transportation to and from school
- 6) Electricity
- 7) Internet and telecommunications (including access to information)
- 8) Housing/shelter
- 9) Cooling measures such as fans, cooling technology, or heat shelters at school
- 10) Social assistance such as temporary shelters, warming systems, emergency cash support
- 11) Other (please specify) .....
- 12) No impact

**12.8 Economic impact on the students' families. What economic impacts were there due to the extreme weather incident selected in question 12? Please select all that apply:**

- 1) Child employment/labor
- 2) Dropping out of school to help the family.
- 3) Displacement/relocation
- 4) Other (please specify) .....
- 5) No impact

**12.9 What assistance was available to the school before, during or after the extreme weather incident selected in question 12? Please select all the apply:**

- 1) Early warning information. Please list 1-2 agencies that provided assistance:  
1) ..... 2) .....
- 2) Training for teachers and students to help them prepare.  
Please list 1-2 agencies that provided assistance:  
1) ..... 2) .....
- 3) Financial assistance for preparedness.  
Please list 1-2 agencies that provided assistance:  
1) ..... 2) .....
- 4) Financial support for repair/rehabilitation of school facilities after the incident.  
Please list 1-2 agencies that provided assistance:  
1) ..... 2) .....
- 5) Health assistance during or after the incident.  
Please list 1-2 agencies that provided assistance:  
1) ..... 2) .....
- 6) Food, drinking water, medicine, or essential supplies during/after the incident.  
Please list 1-2 agencies that provided assistance:  
1) ..... 2) .....
- 7) Transport and evacuation assistance before/during/after the incident.  
Please list 1-2 agencies that provided assistance:  
1) ..... 2) .....
- 8) Other (Please specify): .....  
Please list 1-2 agencies that provided assistance:  
1) ..... 2) .....
- 9) No assistance received.

**Section 3: Types of School Support Needed in the Future to Cope with Extreme Weather Incidents and Other Environmental Issues**

**13. Which types of extreme weather incidents do you expect will occur more frequently or more severely at your school in the future? Please select up to two:**

- 1) Heatwaves/prolonged extreme heat
- 2) Prolonged extreme cold conditions
- 3) Severe drought and lack of rain which caused the school to not have enough water to drink or use for many days.
- 4) Heavy rainfall and storms causing floods/landslides.

**14. What types of impacts do you expect will most affect your school in the future?**

Please select up to two:

- 1) Health and lives of students which will cause students to suffer from illness, injuries or death due to disasters)
- 2) Students' education due to damage to school buildings/facilities and classrooms, suspension of teaching or students dropping out from school.
- 3) Students' access to various essential utilities and services.
- 4) Economic impacts on students' families, leading to social problems such as child labor, displacement or other impacts.

**15. Do you think your school, students, and staff currently have the readiness and capacity to adapt to and cope with future extreme weather incidents as selected in question 13?**

- 1) None at all; need assistance in all aspects.
- 2) Some readiness; need assistance in many aspects.
- 3) Moderate readiness; need assistance in some aspects.
- 4) High readiness; no assistance needed.

**16. Please select what your school lacks and needs to cope with future extreme weather incidents in the short and long term. Please select all that apply:**

- 1) Nearby and rapid health service
- 2) Safe drinking water
- 3) Food, medicine, and essential supplies
- 4) Access to the internet and long-distance communication tools
- 5) Access to electricity during emergencies
- 6) Transport and evacuation support before or during incidents
- 7) Clear and reliable advance warning of extreme weather incidents
- 8) Financial assistance before/after incidents for prevention, preparedness or recovery purposes
- 9) Strengthening existing school infrastructure to withstand extreme weather incidents
- 10) Teacher training on global warming and extreme weather incidents to help schools adapt and deal with extreme weather incidents which often impact them.
- 11) Student training or educational activities to equip students with knowledge and understanding of global warming and extreme weather incidents to help them adapt and prepare for extreme weather incidents which often impact their school.
- 12) Other (Please specify): .....

**17. Which environmental or pollution problems does your school encounter and need help to address? Please select all that apply:**

- 1) None
- 2) PM 2.5 (Please specify the source of the problem:.....)
- 3) Other air pollution apart from PM 2.5  
(Please specify the source of the problem: .....

- 4) Water pollution/wastewater (Please specify the source of the problem:.....)
- 5) Waste (Please specify the source of the problem:.....)
- 6) Other (Please specify the source of the problem:.....)

**Section 4: School Educational Capacity to Address Impacts on Students from Global Warming, Climate Change, and Extreme Weather Incidents**

**18. Do you have knowledge and understanding of global warming and climate change?**

- 1) None
- 2) Some knowledge but limited understanding
- 3) Moderate knowledge and awareness of student impacts
- 4) Strong knowledge, understanding, and awareness of student impacts and the need to build readiness and capacity to adapt and respond effectively

**19. Have you ever received training or learned how to prepare for extreme weather incidents frequently affecting your school and impacting students?**

- 1) Never
- 2) Yes, I have received training (Please specify source: .....)
- 3) Yes, I have self-learned (Please specify source: .....)
- 4) Other (Please specify source:.....)

**20. Does your school currently teach students about global warming, climate change, causes, impacts, and preparedness for extreme weather incidents?**

- 1) Not at all
- 2) Yes, integrated into main subjects  
(Please specify subject and grade: .....)
- 3) Yes, integrated into extracurricular activities or field visits  
(Please specify subject and grade: .....)
- 4) Yes, as a dedicated subject  
(Please specify subject and grade: .....)
- 5) Other (Please specify): .....

**21. Do your students currently have knowledge and understanding of global warming, climate change, causes, impacts, and preparedness for extreme weather incidents?**

- 1) None
- 2) Some knowledge but limited understanding
- 3) Moderate knowledge and awareness of health impacts
- 4) Strong knowledge, understanding, and awareness of student impacts and the need to build readiness and capacity to adapt and respond effectively
- 5) Other (Please specify): .....

22. What support does your school require to build readiness and educational capacity to prevent from and address impacts on students from global warming and climate change? (Please select all that apply):

- 1) Teacher training
- 2) Training or learning activities for students
- 3) Curriculum and teaching manuals
- 4) Modern learning materials and adequate equipment
- 5) School buildings improved to be safe and climate-resilient
- 6) Budgetary support for environmental/climate change education
- 7) Networks/partnerships with environmental agencies or platforms for information exchange
- 8) Climate/environmental education not yet prioritized at school
- 9) Other (Please specify): .....

- We sincerely thank you for your cooperation in completing this questionnaire. -

