



Disaster Risk Reduction Literacy as the Foundation for Successful Inclusive BOSAI Implementations

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Disaster Risk Reduction Literacy as the foundation for Successful Inclusive BOSAI Implementations

APMCDRR (Asian Ministerial Conference on DRR)

Partner Event: ID558

**Building Resilient Communities by Investing in DRR Literacy for
Proactive Actions focusing on “Leave No One Behind”
Brisbane, Australia, September 21, 2022**

Shigeo Tatsuki

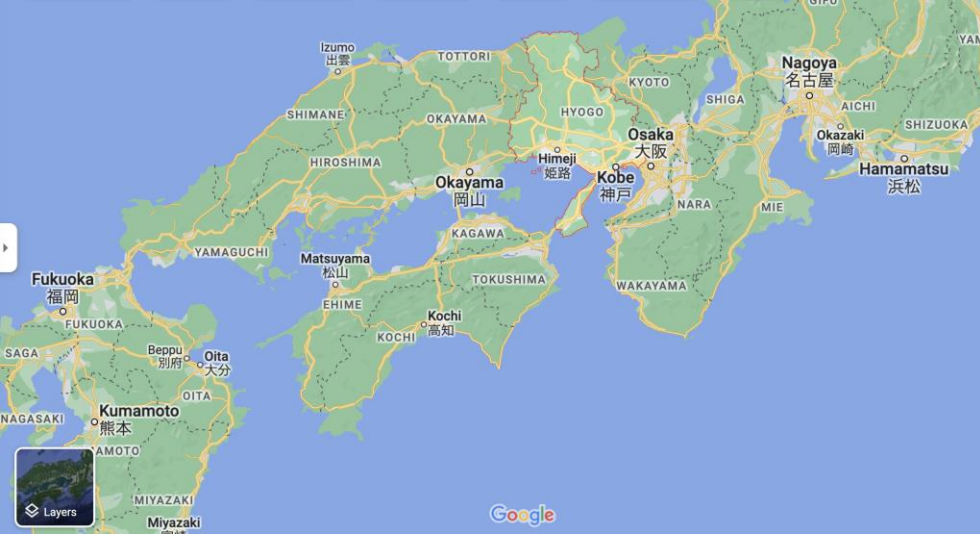
Doshisha University, Kyoto, Japan

3 Constructs of DRR Literacy



3 Constructs of DRR Literacy





The 2015 Hyogo Prefecture Survey on Preparedness
(N=1,103)

Empirical Evidence #1

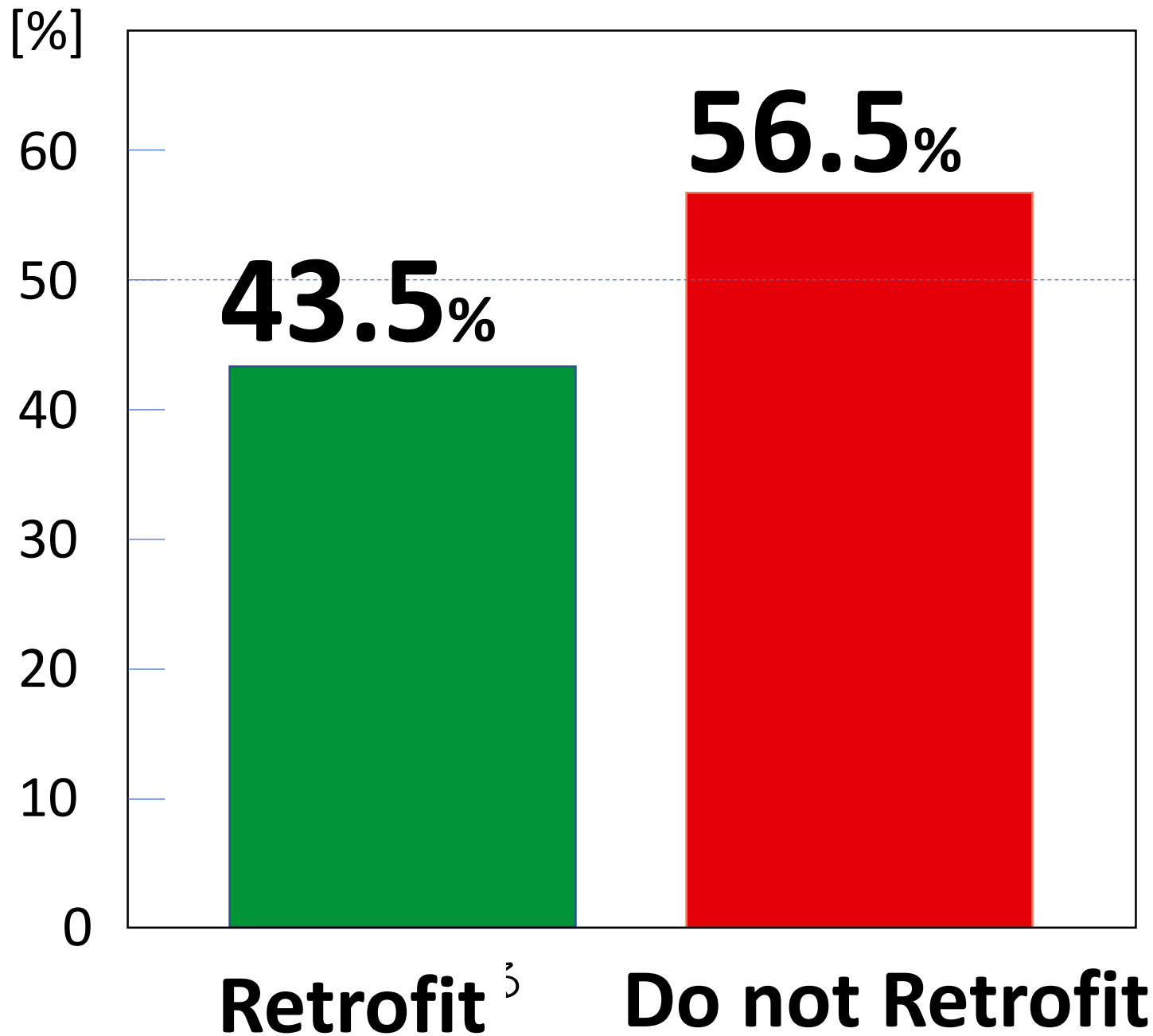
Weather to Retrofit Your House?

(YES) Cost of **2.5 million yen (\$25,000)**

No House Damage due to EQ

(NO) **50% Chance of EQ Damage**

Cost of 5.0 million yen (\$50,000)



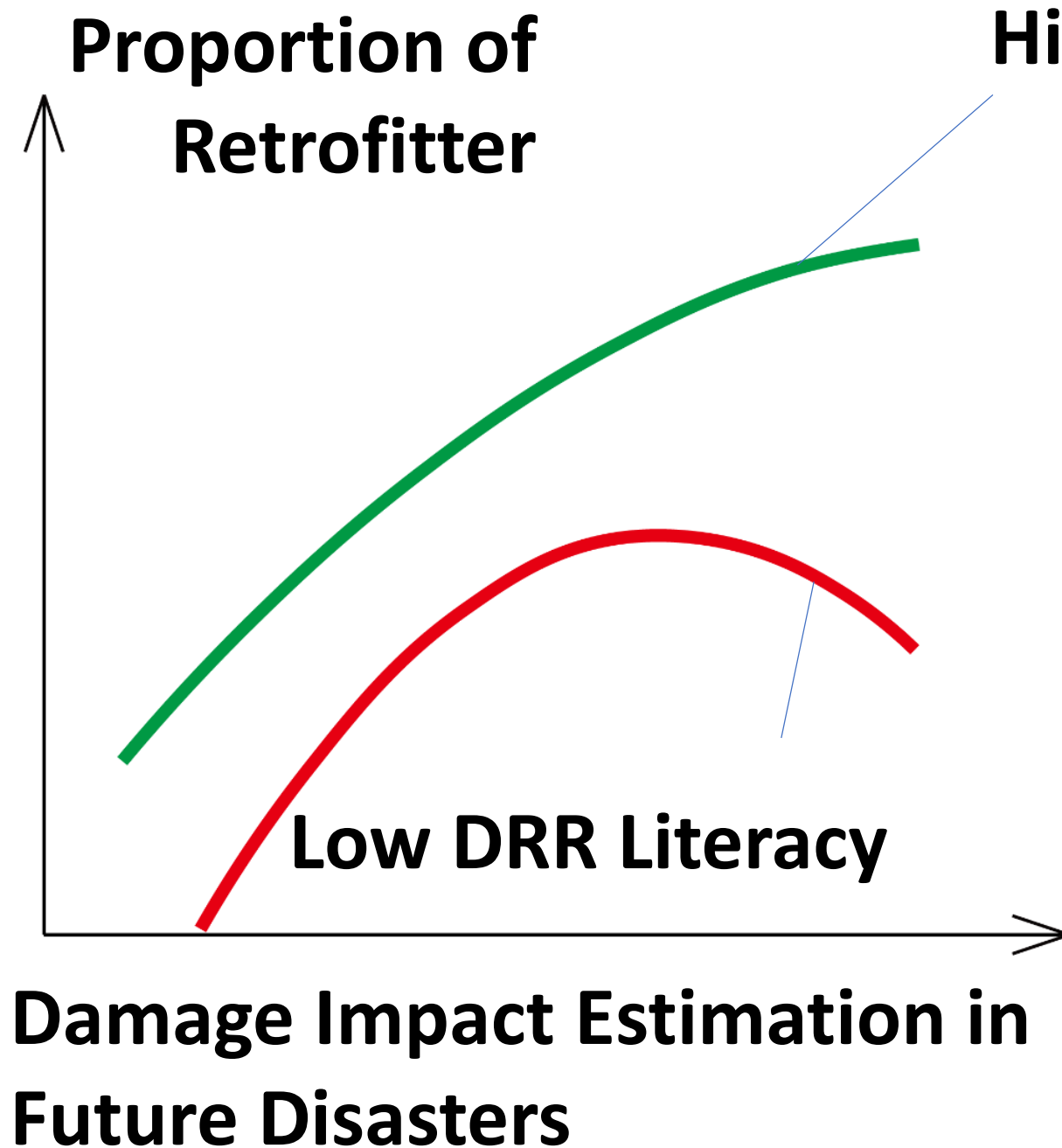
**Hyogo Pref. Disaster
Preparedness General Survey**

Time of Survey
2015

Population
Residents of Hyogo
Prefecture 20 + years old

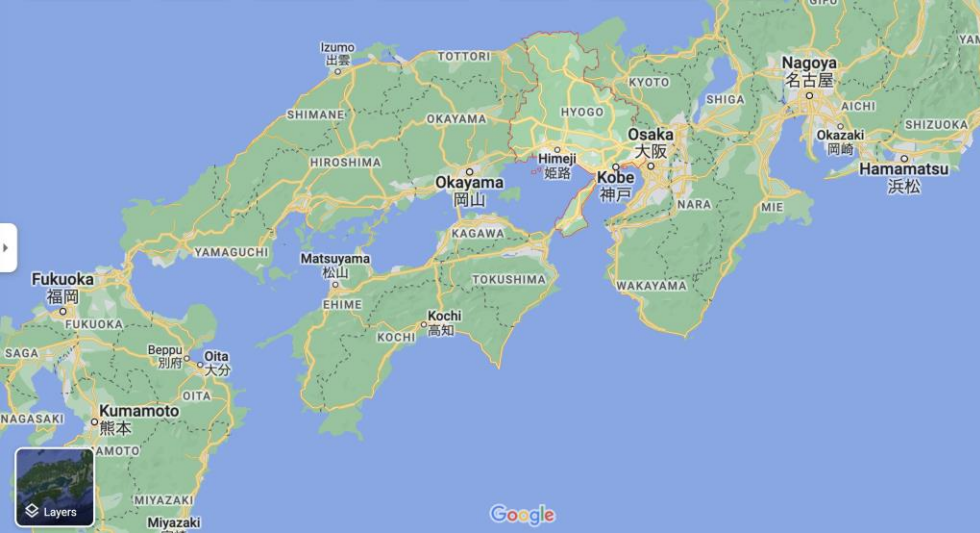
Respondents
N=1,103

Kawami, F., Hayashi, H., & Tatsuki, S. (2016).
A Study of Nonlinear Interaction Effects of
Disaster Risk Reduction Literacy with
Seismic Hazard Risk, Physical and Human
Damages Perception on Risk Avoidance
Behavior: Report of 2015 Hyogo Prefecture
Survey on Preparedness. Journal of Social
Safety Science, 29, 135-142.

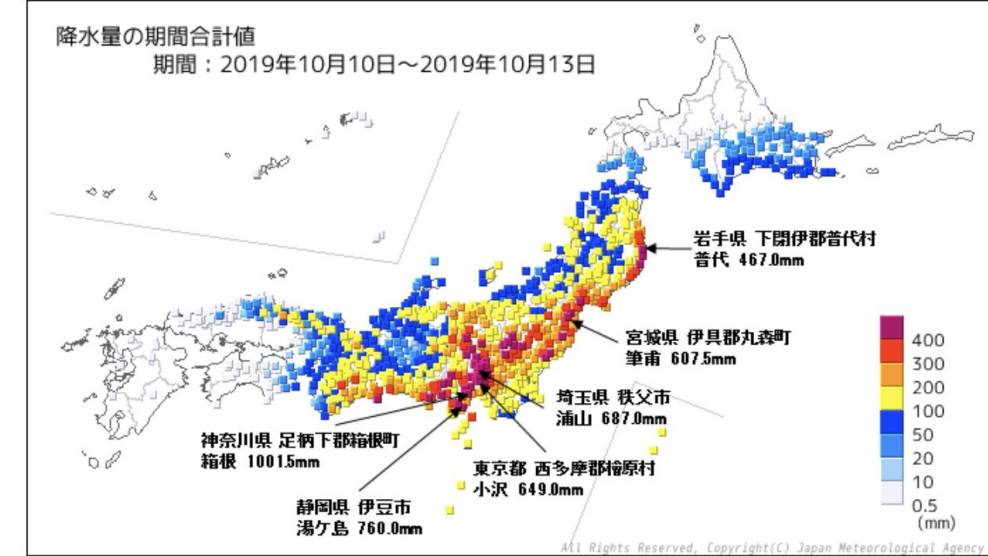


- **Understanding of Hazards & Vulnerability**
- **Awareness of Self-help, Community help & Public Help**
- **Confidence in Immediate Action**

Kawami, F., Hayashi, H., & Tatsuki, S. (2016). A Study of Nonlinear Interaction Effects of Disaster Risk Reduction Literacy with Seismic Hazard Risk, Physical and Human Damages Perception on Risk Avoidance Behavior: Report of 2015 Hyogo Prefecture Survey on Preparedness. *Journal of Social Safety Science*, 29, 135-142.



The 2015 Hyogo Prefecture Survey on Preparedness
(N=1,103)

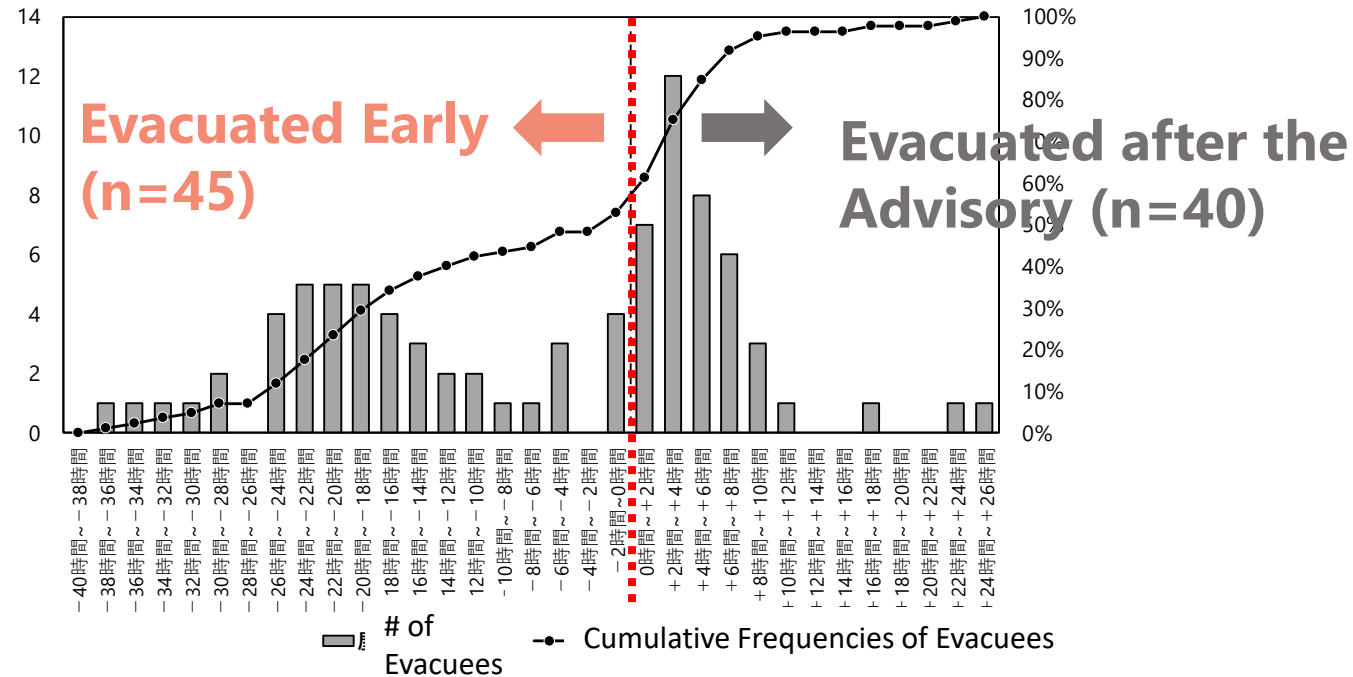


The 2019 Typhoon Hagibis (#19) Survey
(40 municipalities in affected 12 prefectures)

Empirical Evidence #2

The 2019 Typhoon Hagibis (#19) Survey

Two Groups of Evacuees: Those who evacuated BEFORE and AFTER the advisory



Time of Survey
2020

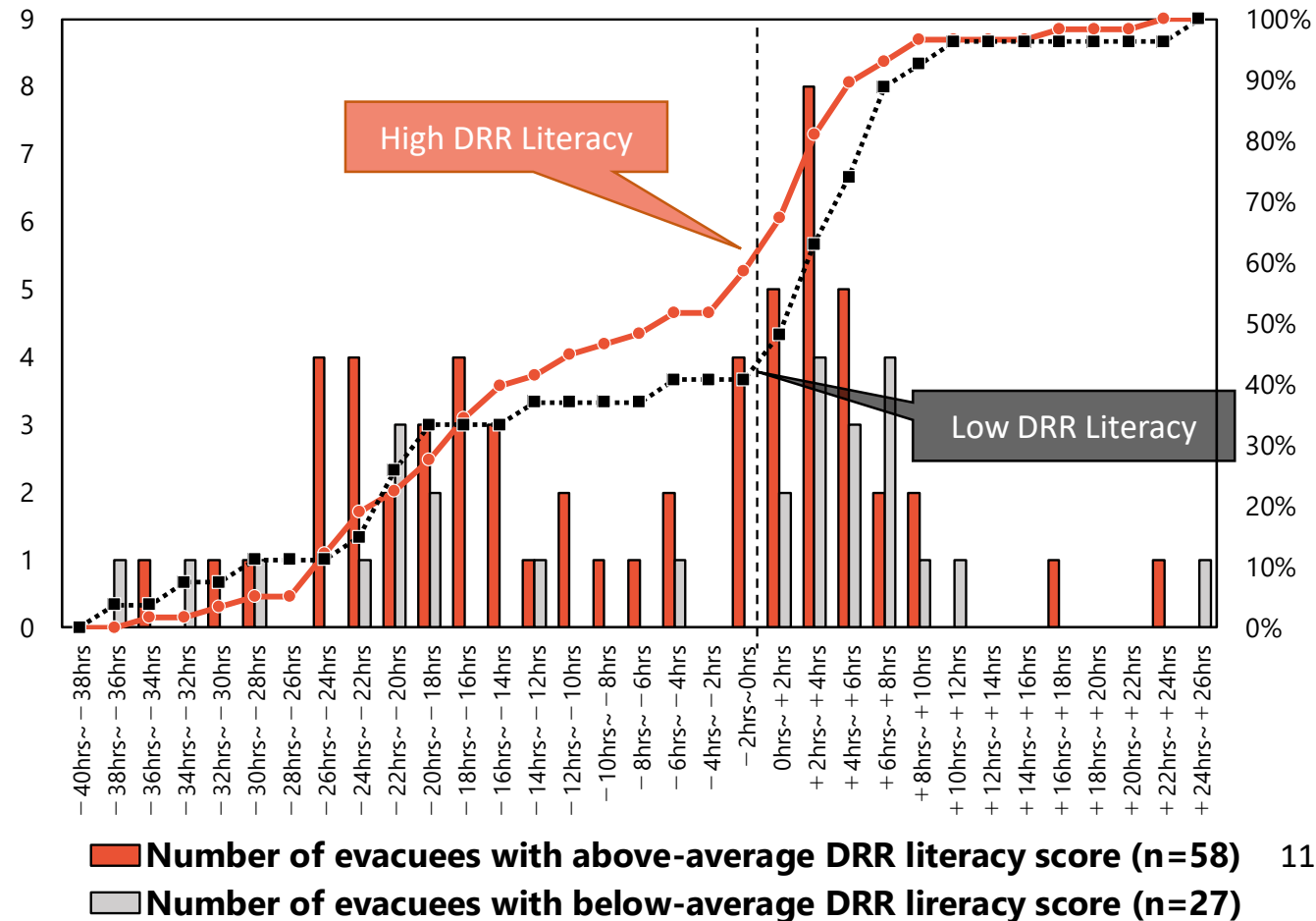
Population
Residents of 38
municipalities in 12
prefectures affected
by Hagibis

Respondents
N=1,397

内閣府「令和元年台風19号災害被災40市町村住民対象Web社会調査」2020年1月11日～13日実施, 回答のあった3,078名中在宅であった1,397名対象。

Shinya Fujimoto, Fuminori Kawami, and Shigeo Tatsuki, External and Internal Validation of the Disaster Schema-Initiated Evacuation Decision-Making Model, A poster/video presentation, 45th Annual Natural Hazards Research and Applications Workshop, July 12, 2020.

Most of Early Evacuees Were with a High Level of Bosai literacy



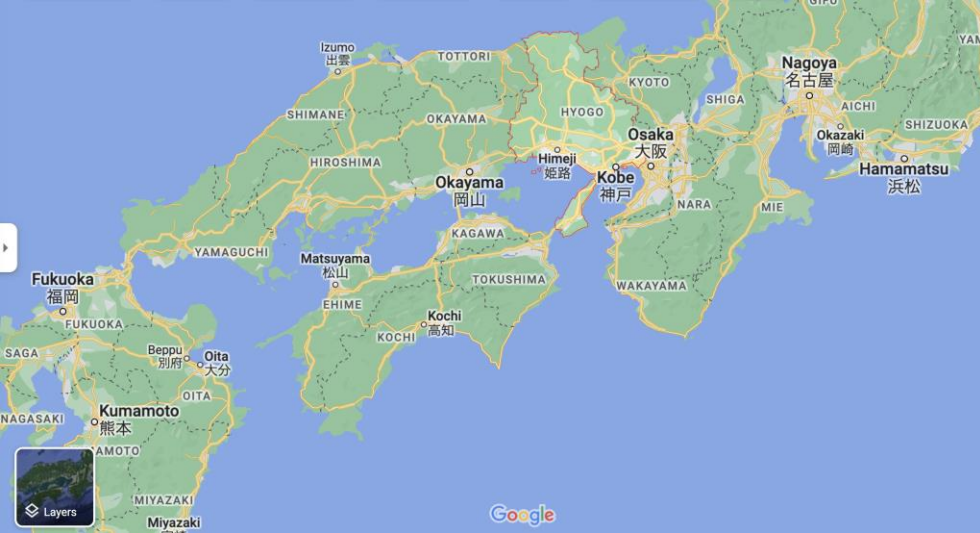
Time of Survey
2020

Population
Residents of O
Prefectures Affected
by Hagibis

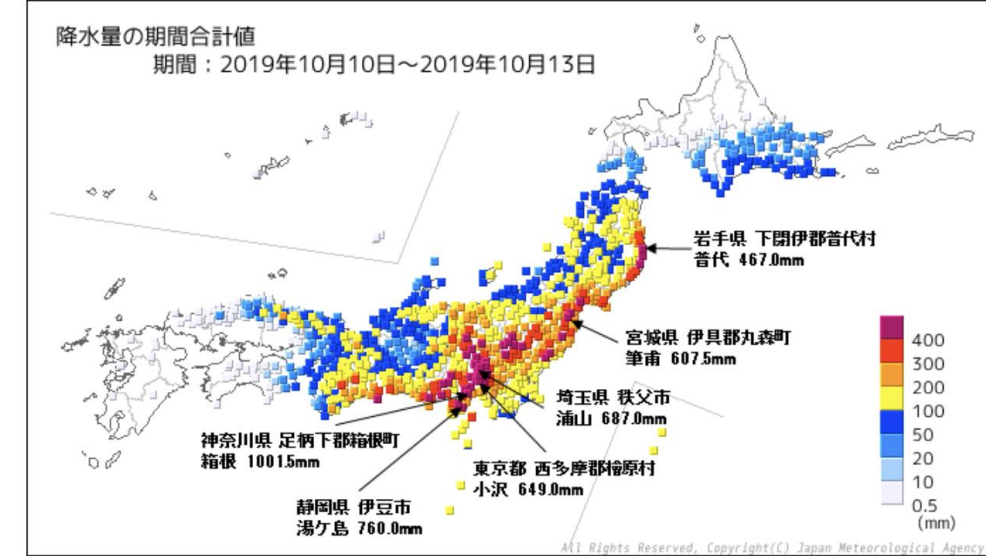
Respondents
N=1,397

内閣府「令和元年台風19号災害被災40市町村住民対象Web社会調査」2020年1月11日～13日実施, 回答のあった3,078名中在宅であった1,397名対象.

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The 2015 Hyogo Prefecture Survey on Preparedness
(N=1,103)



The 2019 Typhoon Hagibis (#19) Survey
(40 municipalities in affected 12 prefectures)

Empirical Evidence #3

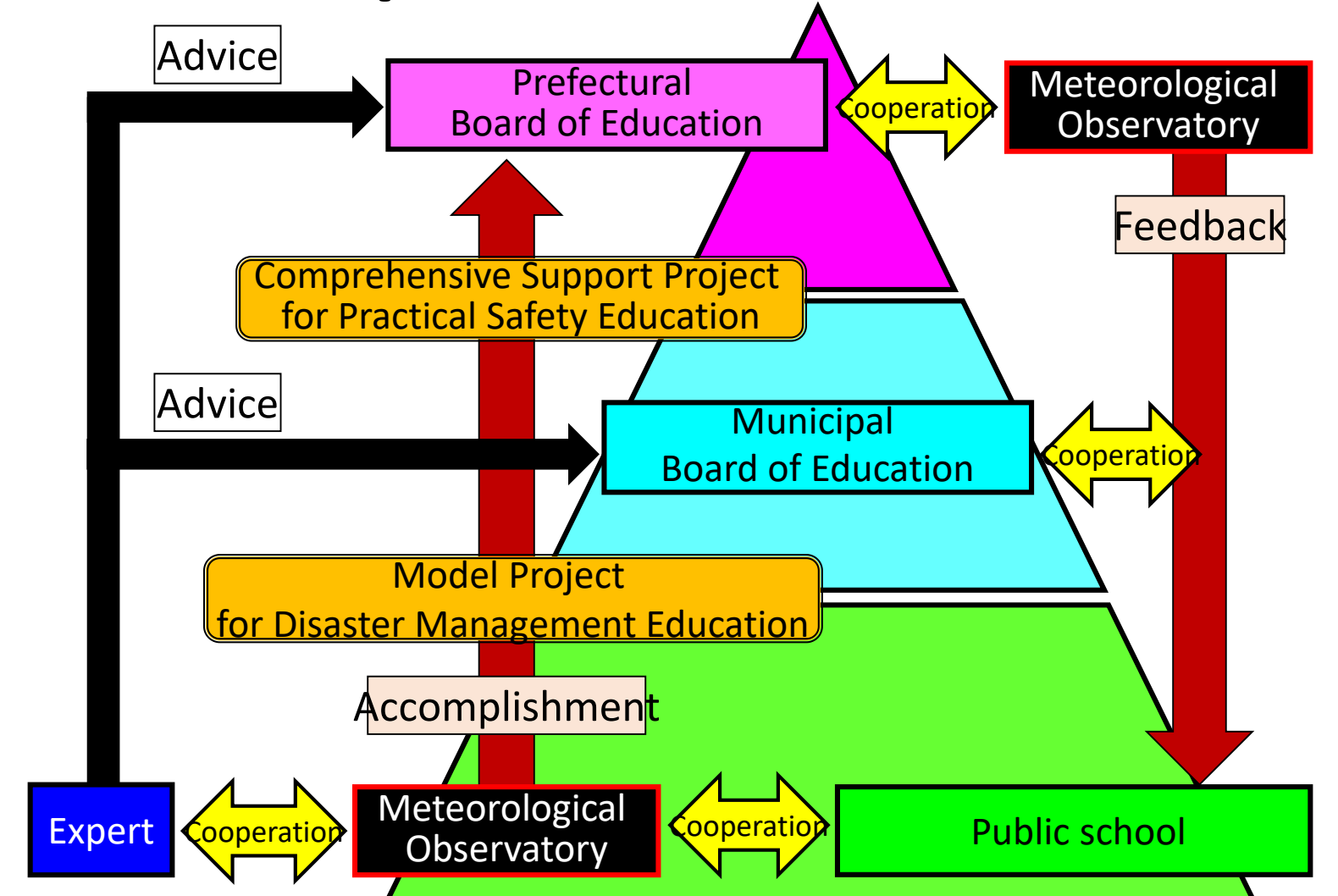
Formal Disaster Risk Reduction Education

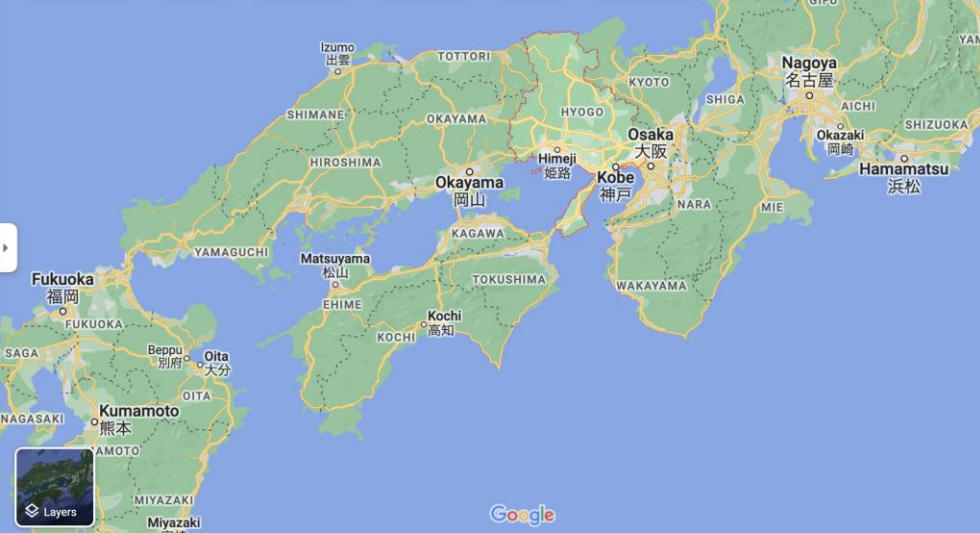
Collaboration of Public Elementary School Teachers, a Local Meteorological Observatory Scientist & a Social Psychologist

Menua Elementary School, Kumagaya City, Saitama Prefecture

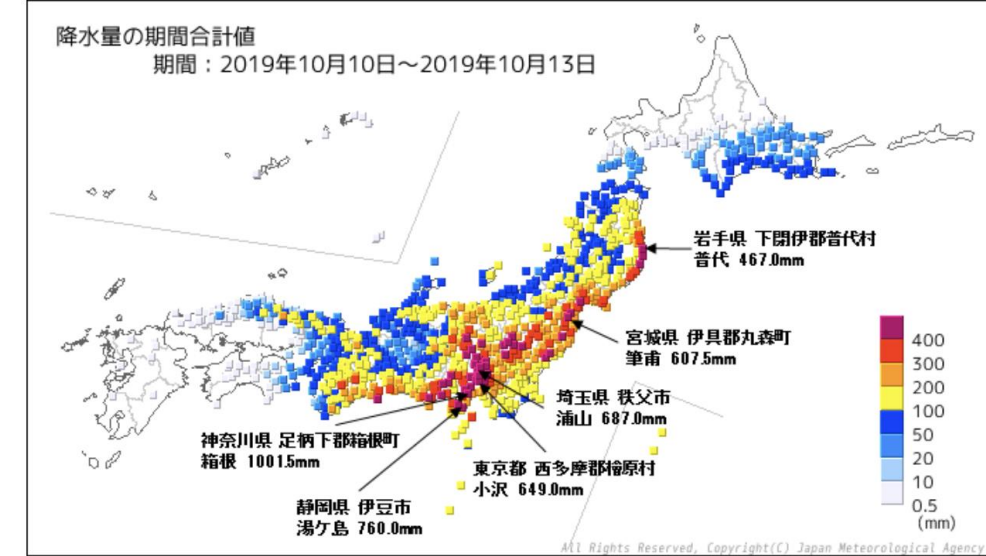


School, Meteorological Observatory & DRR Expert Collaboration





The 2015 Hyogo Prefecture Survey on Preparedness
(N=1,103)



The 2019 Typhoon Hagibis (#19) Survey
(40 municipalities in affected 12 prefectures)

Empirical Evidence #4

Formal Disaster Risk Reduction Education

Collaboration of Public Elementary School Teachers, a Local Meteorological Observatory Scientist & a Social Psychologist

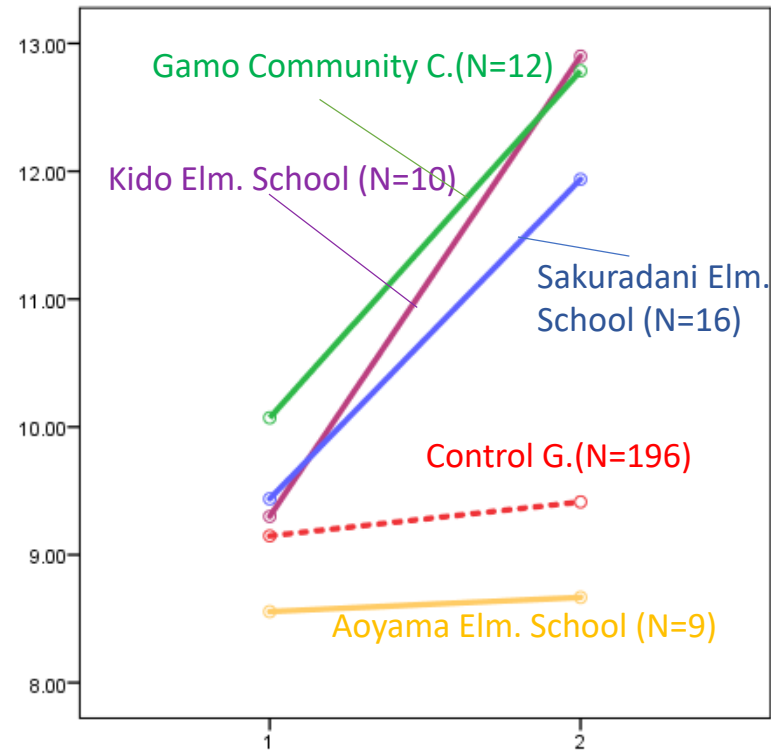


Community-based Disaster Risk Reduction Camp

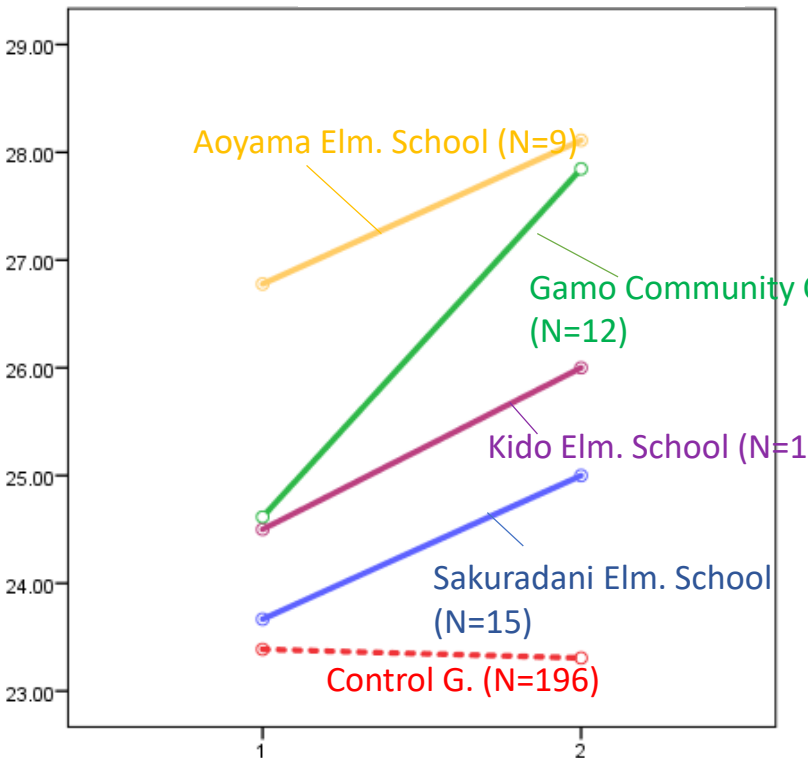
July 30-31, 2016	Aoyama Elementary School, Otsu
August 6-7, 2016	Kido Elementary School, Otsu
November 10-12, 2016	Sakuradani Elementary School, Hino
August 5-6, 2017	Gamo Community Center, Higashi-Omi



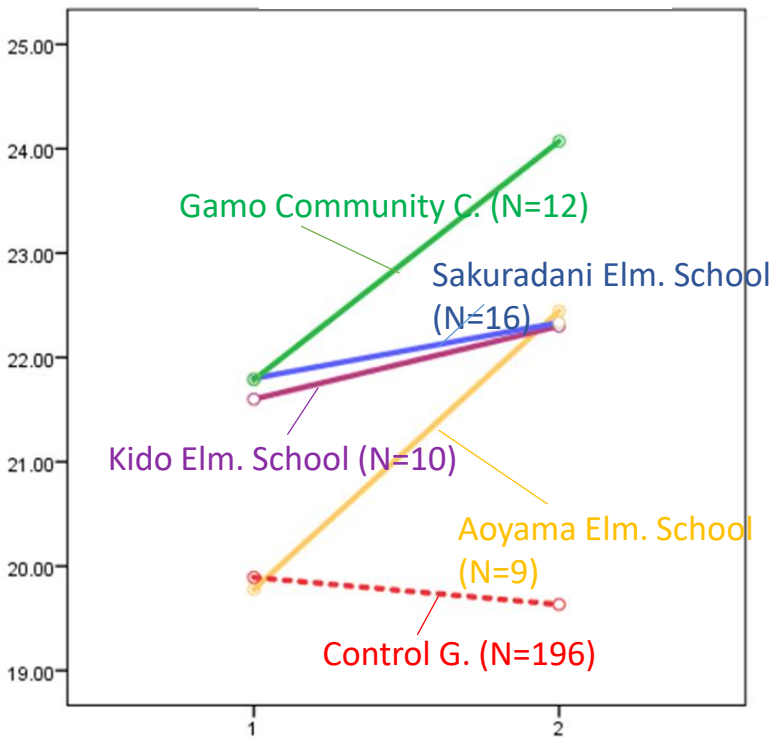
Understanding of Hazards & Vulnerability



Awareness of Self-help, Community help & Public Help



Confidence in Immediate Action





DRR Literacy Tools for i-BOSAI Implementation

Hazard Maps

BOSAI Security Notebook

BOSAI Time-Lines

Use of Hazard Maps

Hazard Map Portal Site



<https://disaportal.gsi.go.jp/>

Your Town's Earthquake Risk



<https://nied-weblabo.bosai.go.jp/amcj/>

Warning/Alert

Understanding
of Hazards &
Vulnerability

Confidence
in
Immediate
Action

Awareness
of Self-
help,
Community
help &
Public Help

Protective
Action

Hazard Map Portal Site



Your Town's Earthquake Risk



©防災科学技術研究所 鈴木進吾研究員

<https://nied-weblabo.bosai.go.jp/amcj/>

<https://disaportal.gsi.go.jp/>

BOSAI Security Notebook



BOSAI Time-Lines

Warning/Alert

Understanding
of Hazards &
Vulnerability

Confidence
in
Immediate
Action

Awareness
of Self-
help,
Community
help &
Public Help

Protective
Action

Approximate Hourly Date	Weather Warning Level	My Action	Community Action
3 Days prior	•LEVEL 1 早期注意警報 災害への心構えを高める	☐ 家の周りの点検と片付け ☐ 気象情報の確認を始める ☐ 避難先・避難経路の確認 ☐ 水・食料・ガソリン・服用薬などの準備 ☐ 避難先（親戚、知人宅）に連絡 ☐ ☐ ☐	☐ 地区内の役割分担・連絡体制の確認 ☐ 避難経路の状況確認 ☐ 避難所の防災用品・備蓄品の確認 ☐ 要支援者と支援者の予定を確認 ☐ ☐ ☐
2 Days prior 1 Day prior Half a Day prior	•LEVEL 2 避難行動を確認 大雨洪水警報等	☐ 気象情報の確認 ☐ 避難経路の確認 ☐ 非常用持ち出し袋の準備 ☐ 地域の支援者への連絡 ☐ ☐ ☐	☐ 要支援者の所在確認 【誰が：】 ☐ 避難所の開設確認 【誰が：】 ☐ 要支援者に避難準備呼びかけ 【誰が：】 ☐ ☐ ☐
7 hours prior	•LEVEL 3 Vulnerable People Evacuate		☐ 要支援者に避難呼びかけ 【誰が：】 ☐ 要支援者の避難誘導開始 【誰が：】 ☐
3 hours prior	•LEVEL 4 危険な場所から避難		
0 hour	•LEVEL 5 命を守る行動を！		

Approximate Hours/ Day	Weather Warning	My Action	Community Action
3 Days prior	Level •LEVEL 1	☐ 家の周りの点検と片付け ☐ 気象情報の確認を始める ☐ 避難先・避難経路の確認 ☐ 水・食料・ガソリン・服用薬などの準備 ☐ 避難先（親戚、知人宅）に連絡 ☐ ☐ ☐	☐ 地区内の役割分担・連絡体制の確認 ☐ 避難経路の状況確認 ☐ 避難所の防災用品・備蓄品の確認 ☐ 要支援者と支援者の予定を確認 ☐ ☐ ☐ ☐
	早期注意情報 災害への心構えを高める		
	•LEVEL 2	☐ 気象情報の確認 ☐ 避難経路の確認 ☐ 非常用持ち出し袋の準備 ☐ 地域の支援者への連絡 ☐ ☐ ☐ ☐	☐ 要支援者の所在確認【誰が：】 ☐ 避難所の開設確認【誰が：】 ☐ 要支援者に避難準備呼びかけ【誰が：】 ☐ ☐ ☐ ☐ ☐
2 Days prior 1 Day prior Half a Day prior	避難行動を確認		
7 hours prior	大雨洪水警報等 •LEVEL 3	Vulnerable People Evacuate	☐ 要支援者に避難呼びかけ【誰が：】 ☐ 要支援者の避難誘導開始【誰が：】 ☐
3 hours prior	•LEVEL 4	危険な場所から避難	☐ ☐ ☐
0 hour	•LEVEL 5	命を守る行動を！	☐ ☐ ☐