

Lessons learned for disaster mitigation,
“Kakekomi-dera” or sanctuaries in 311 Tsunami
- Heritage sites used as temporary shelters -

Utilization of cultural heritages for human life safety

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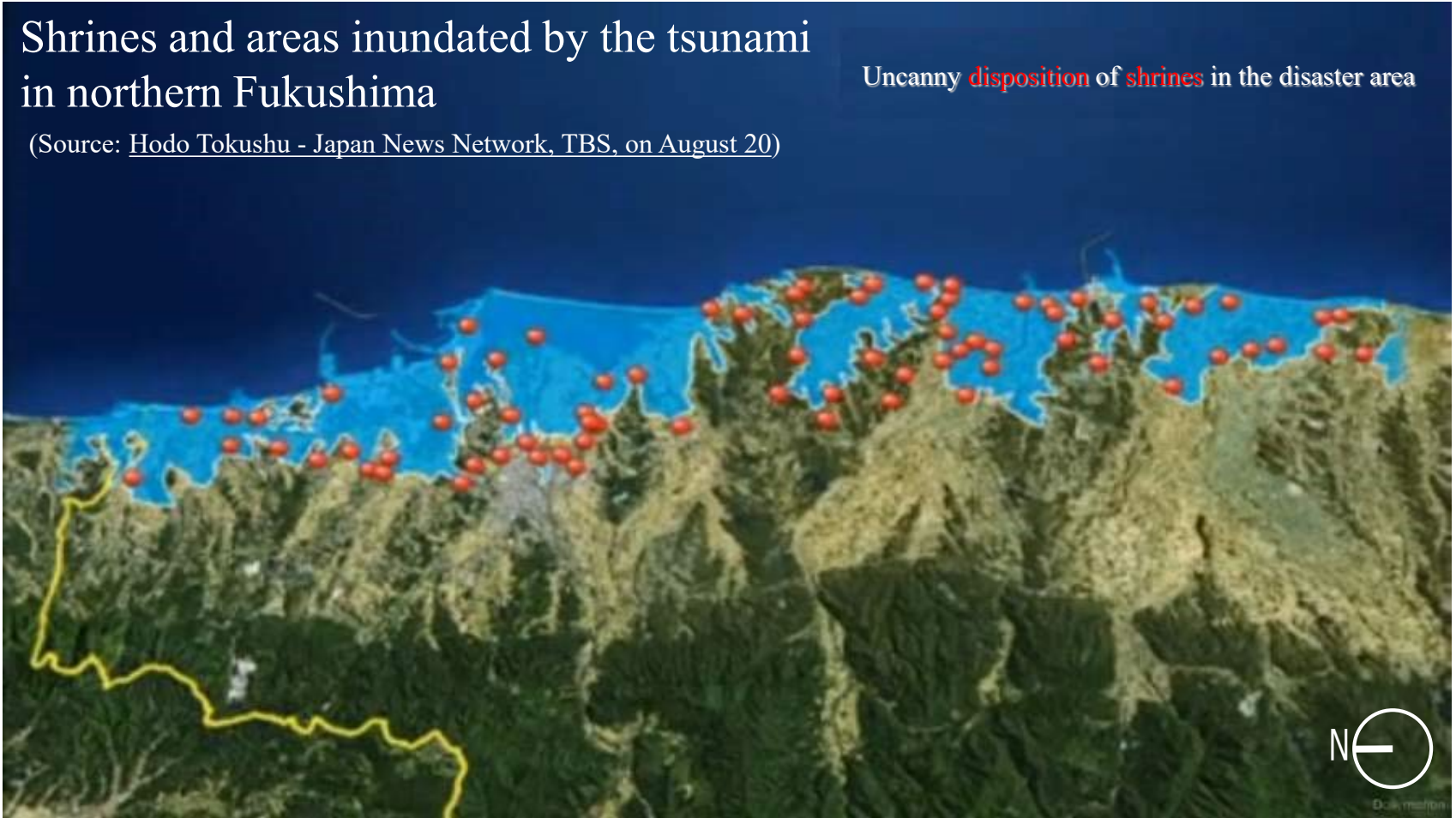
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Background of research

Shrines and areas inundated by the tsunami
in northern Fukushima

(Source: [Hodo Tokushu - Japan News Network, TBS, on August 20](#))

Uncanny **disposition** of **shrines** in the disaster area



Many shrines and temples seem to be located
in places which are rarely hit by tsunamis.

Historical background of research

- In “Fu-zoku Gaho” (Manners and Customs in Pictures), some descriptions of utilization of shrines and temples as evacuation centers for the **1896 Meiji-Sanriku Tsunami** can be found.



圖の「埋小舟」出版と浪津の中幸民者被の可思久

Figure 1. Wrapping evacuees in Buddhist flags in Kuji Town

It is said that evacuees were temporarily wrapped in Buddhist flags out of **an temple used as an office**.



圖の所清救時臨

Figure 2. Temporary sanctuary

Using **an building left before the gate on higher ground as a temporary office**, county officials, police officials, and town officials visited it in night and day shifts to aid the victims with money and goods.

It is pitiful to see women with a bowl in hand given two rice balls and leave with delight and gratitude.

Aim of research

In the Great East Japan Earthquake, shrines and temples were used as:

- Temporary shelters (to save people's lives from the tsunami) and
- Evacuation centers (to protect evacuees' living).

We have done:

- A study into actual use of shrines and temples in disaster, and
- A study on use possibility of shrines and temples in the future,



Aiming at **formulating guidelines to complement**
disaster risk management plans with local heritages in future

Case of temporary shelters in Tsuki-hama



Isuzu Shrine

Cho-kan-ji
Temple



Case of temporary shelters in Tsuki-hama

- Residents in Tsuki-hama were not informed of the tsunami warning due to breakdown of the wireless communication system for disaster prevention.



- Local residents visually detected the tsunami and urgently escaped to Isuzu Shrine on higher ground behind the village.



- After the tsunami, about 100 evacuees took refuge in the neighboring Cho-kan-ji Temple.

They could quickly evacuate to the shrine and temple on higher ground.

Actual condition as evacuation centers

- The 2011 Tohoku-Pacific Ocean Earthquake and tsunami struck even designated public evacuation centers.
→ **Lack of evacuation centers**
- Undesignated private facilities, including shrines and temples, were utilized.
→ Fact that **region heritage sites supported refugee life**



We have done a study into actual use of shrines and temples as evacuation centers in terms of:

- Space and equipment (hardware) and
- Operation (software).

Photo 1. Scene of refugee life at Murasaki Hall, Murasaki Shrine in Kesenuma City, Miyagi



Shrines and temples to research

- **Broad Ishinomaki Area**
- In **19** out of 20 target shrines or temples, a hearing was conducted.
- **17** functioned as evacuation centers.
- * 3 of them coordinated with other centers.
- **2** functioned as supply bases.

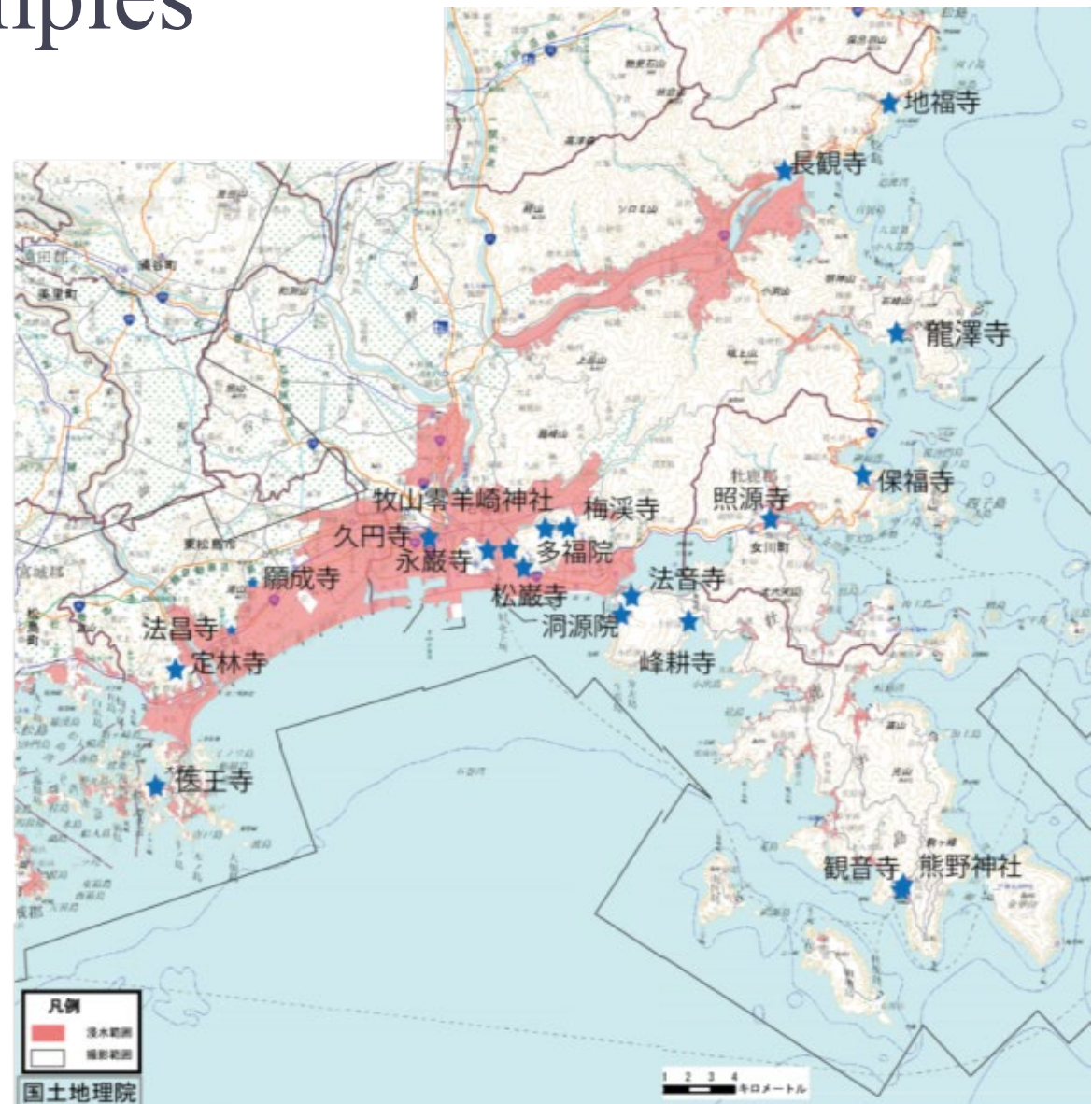


Figure 2. Areas inundated by the tsunami and locations of target shrines and temples in Miyagi

Method of research

- **Hearing by interview** with the operators of evacuation centers in shrines and temples (priests, neighborhood association chiefs, etc.)
- Schedule: June 8-12, 2011
- Research contents
 - (1) How the evacuation center was opened
 - (2) How the space and equipment was used
 - (3) How the evacuation center was operated
 - (4) Regular activity status of the shrine or temple and local communities

Characteristics and challenges in terms of space and equipment

Case: Floor plan of the main hall and hall of Baikei-ji Temple

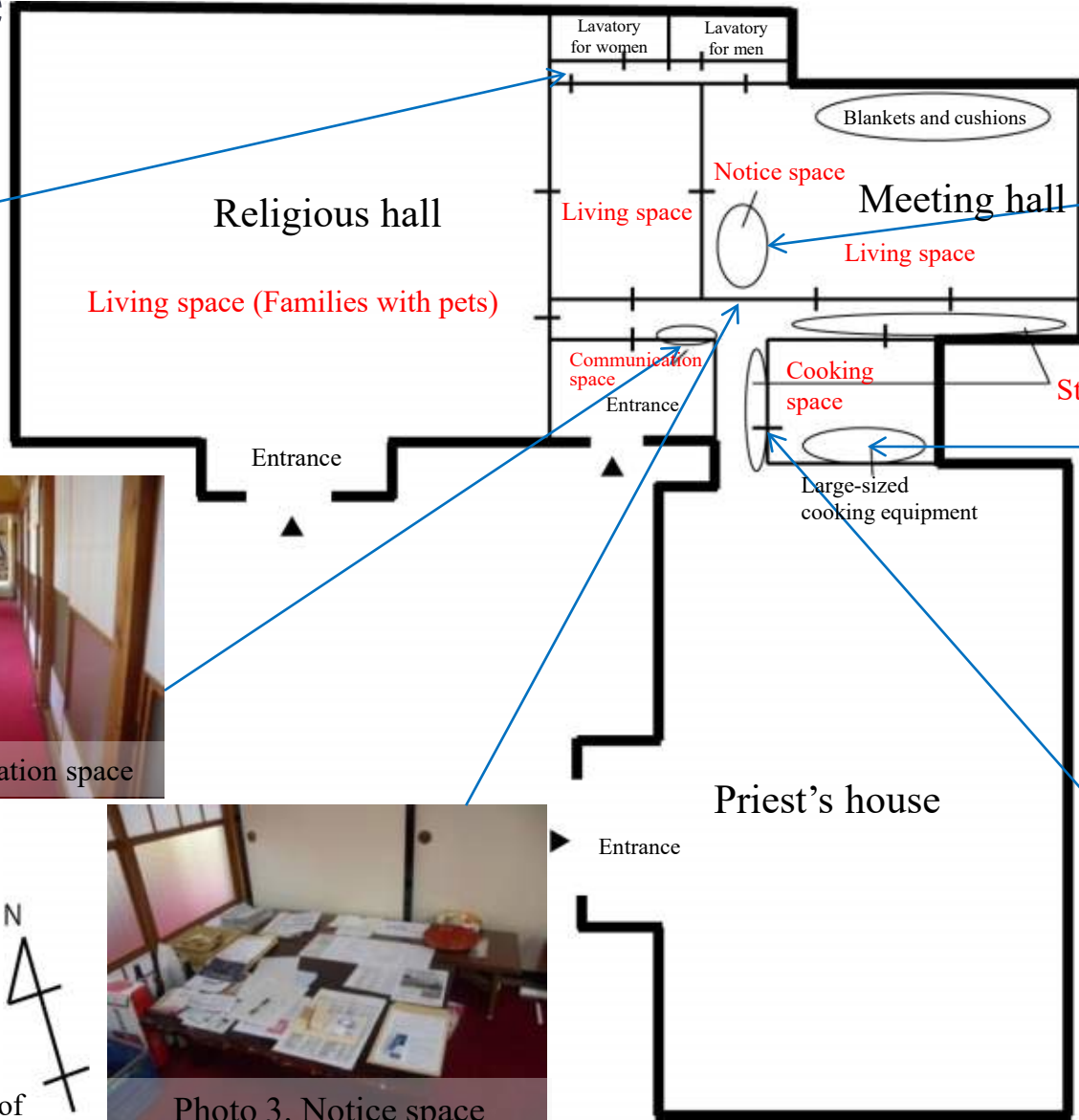


Figure 2. Floor plan of Baikei Temple

3-3. Indoor conditions

- For **Lighting**: Thick candles for ceremonies (in 12 cases out of 17)
- For **Heating**: Kerosene stoves (in 12 cases out of 17), clothes including blankets (in 14 cases out of 17) and cushions (in 4 cases out of 17)



Photo 8. Candles in the main hall of Baikei Temple



Photo 9. Heater in Baikei Temple

- 3 cases offered candles and heaters **to other evacuation centers.**
- **It is a challenge that shrines and temples have to bear the costs** of maintenance and repair of equipment and facilities after recovery.

3-4. Cooking space

- In most cases, the **hall kitchen** or house kitchen was used.
- On a regular basis, dinners for a large group **have been cooked at ceremonies**.

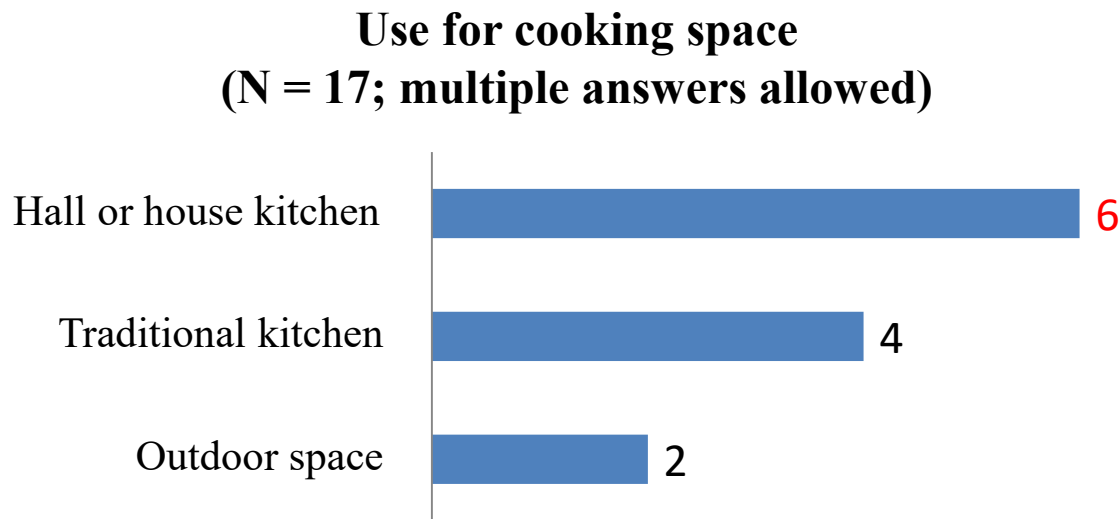


Figure 4. Use for cooking space



→ Shrines and temples are originally equipped with large **cooking spaces that can cope with a large group of people**.

3-7. Utilities: Electricity, gas, and daily life water

- **Electricity:** **Generators** brought in (in 5 cases out of 17)
- **Gas:** **Propane gas** of the shrine or temple (in 9 cases out of 17) or propane gas brought in (in 4 cases out of 17)
- **Daily life water:** Use of **mountain runoff and well water** (in 13 cases out of 17)

Daily life water (N = 17; multiple answers allowed)

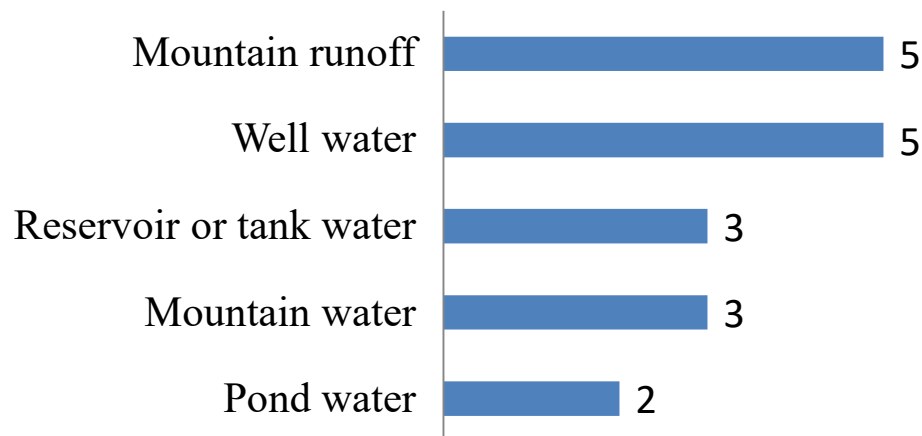


Figure 7. Daily life water



Photo 13. Mountain runoff at Ryutaku Temple

- **Electricity could not be covered by existing equipment.**
- The utilities of shrines and temples were used after recovery of lifelines.
Challenge is how **the financial burden on shrines and temples** should be covered.

3-8. Supplies

- **Food:** Foods brought in, **the shrine's or temple's stock**, and **offerings (供物)**
- **Extra clothes:** The priest's belongings offered (in 4 cases out of 17)

Food supplies (N = 17; multiple answers allowed)

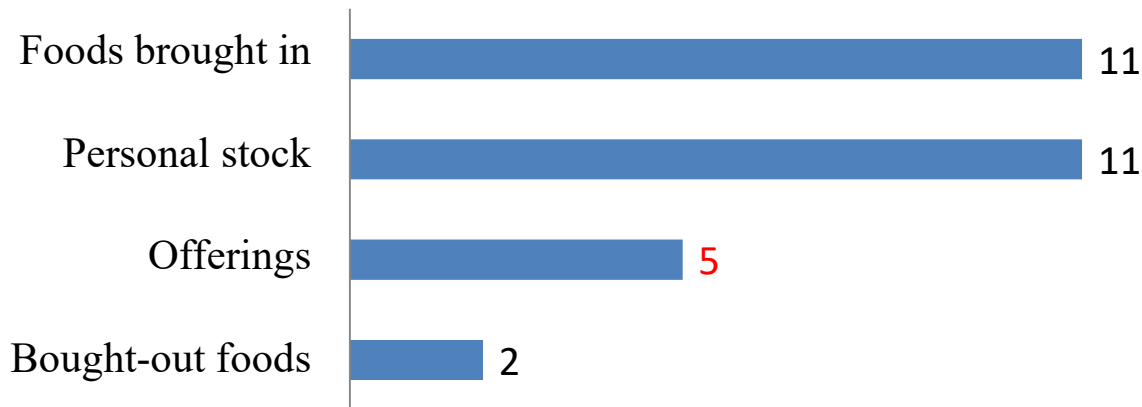


Figure 8. Food supplies



Photo 14. Storage space at Makiyama Shrine

- In many cases, **the shrine's or temple's stock and foods brought in were supplied in combination.**
- **Concerning drinking water, administration gave sanitation guidance later, and measures such as “boiling” and “reduction in use” were taken.**

3-10. Review on space and equipment

Merits

- Living space and cooking space that can cope with a large group of people
- Consideration for privacy by partitioning space
- Lighting, heating, and large cooking equipment
- So large a number of candles that they can be offered to others
- Regular stock of supplies

Demerits

- **Financial burden** of utilities after recovery of lifelines
- **Maintenance and repair costs** for space and equipment
- **Difficulty in getting information** in comparison with other public evacuation centers
- Necessity to take into account **hygiene for well water**, etc.

Characteristics and challenges in terms of operation

3-11. Operation systems in urban areas and fishing villages

There was a **difference in operation systems** between urban areas and fishing villages.
Cases: Houon Temple in an urban area and Ryutaku Temple in a fishing village

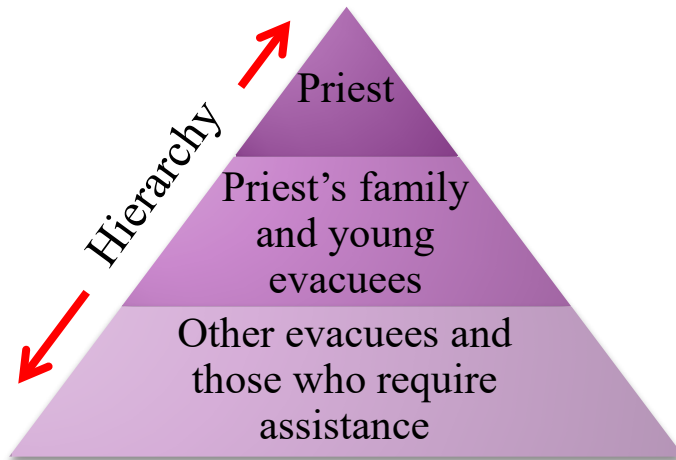


Figure 1. Operation system at Houon-ji Temple in **an urban area**

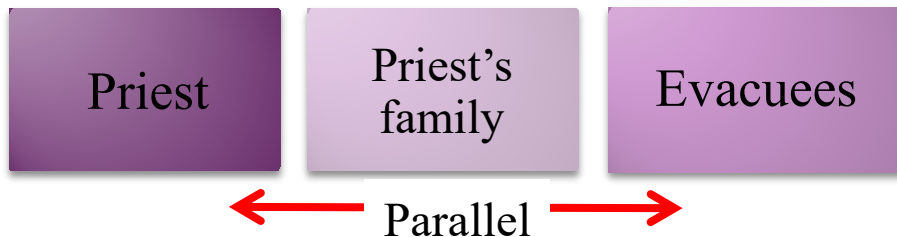


Figure 2. Operation system at Ryutaku-ji Temple in **a fishing village**

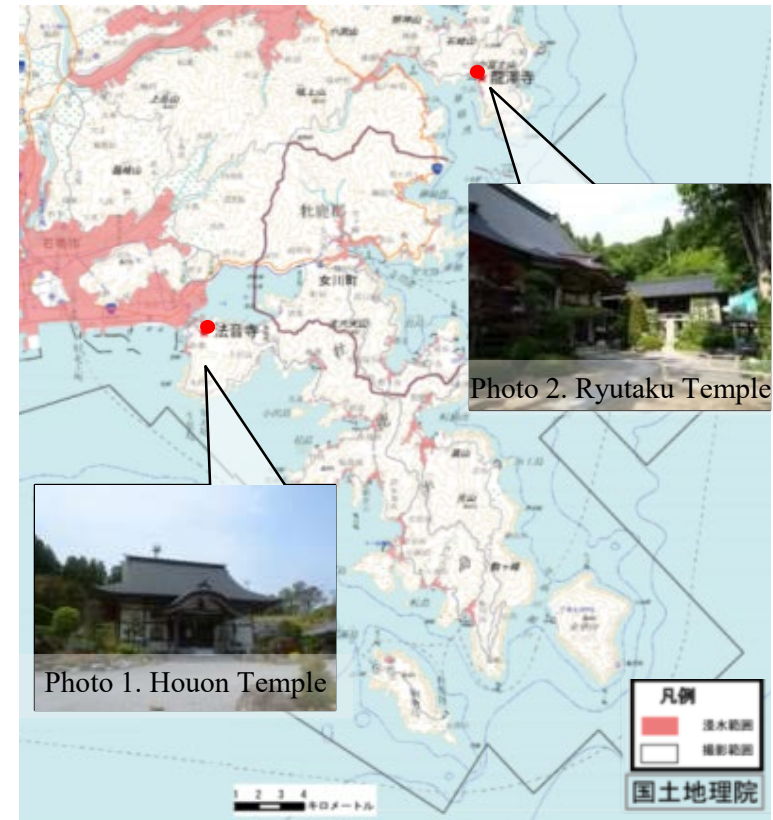


Figure 3. Locations of Houon Temple and Ryutaku Temple

3-12. Operation services in urban areas and fishing villages

Service classification	Service at evacuation center	Priest	Priest's family	Evacuees
Administrative operation	避難所のリーダー			
	避難所の開設			
	避難所の集約			
	避難所の閉鎖			
	避難空間の確保			
	適体安置空間確保指定			
	避難者の受入を誘導			
	避難者名簿の作成			
	避難所の施設設備の管理			
	避難者の役割分担振り分け			
	避難所運営ルールの作成			
Volunteer coordination	ボランティアの要請受け入れ			
	ボランティアとの連携			
Evacuee support	災害時要援護者の配慮			
	在宅避難者の生活支援			
	避難者の生活支援			
	避難所運営サービス窓口業務の執行			
Information	行政、外部への情報提供			
	避難所における情報把握収集			
	避難所外の情報収集			
	情報の整理			
Rescue	記録の整理			
	医療機関との連携			
	応急救護			
	救出、救護活動の補助			
Living environment	救出救護活動の推進			
	避難者の健康管理			
	生活用水の確保			
	環境衛生の維持			
Food and other supplies	避難所内の秩序の維持			
	避難所内のルール作成			
	避難所備蓄物資の確認等			
	救援物資の要請受入保管			
Others	食料の管理			
	炊き出し			
	食料の配布			
	消火活動			
Others	避難者への協力要請			
	自主防災組織の結成			
	自主運営組織との連携			
	応援員の連携			
	イベント開催			
	周辺の片づけ			

Table 1. Operation service at Houon Temple in an urban area

Service classification	Service at evacuation center	Priest	Priest's family	Evacuees
Administrative operation	避難所のリーダー			
	避難所の開設			
	避難所の集約			
	避難所の閉鎖			
	避難空間の確保			
	適体安置空間確保指定			
	避難者の受入を誘導			
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	在宅避難者の生活支援			
	避難者の生活支援			
	避難所運営サービス窓口業務の執行			
Information	避難者への情報提供			
	行政、外部への情報提供			
	避難所における情報把握収集			
	避難所外の情報収集			
Rescue	情報の整理			
	記録の整理			
	医療機関との連携			
	応急救護			
Living environment	救出、救護活動の補助			
	救出救護活動の推進			
	避難者の健康管理			
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Food and other supplies	環境衛生の維持			
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	食料の管理			
	炊き出し			
	食料の配布			
Others	消火活動			
	避難者への協力要請			
	自主防災組織の結成			
	自主運営組織との連携			
	応援員の連携			
	イベント開催			
	周辺の片づけ			

Table 2. Operation service at Ryutaku Temple in a fishing village

At **Houon Temple**, the burden on the priest and his family was great.

→ There is a challenge of **strain** on parties concerned with the shrines or temples.

Ryutaku Temple operated the evacuation center **in cooperation with evacuees**.

Characteristic of shrines and temples

- Some operation activities were **characteristic of shrines and temples.**

Projects carried out in operation (N = 17; multiple answers allowed)

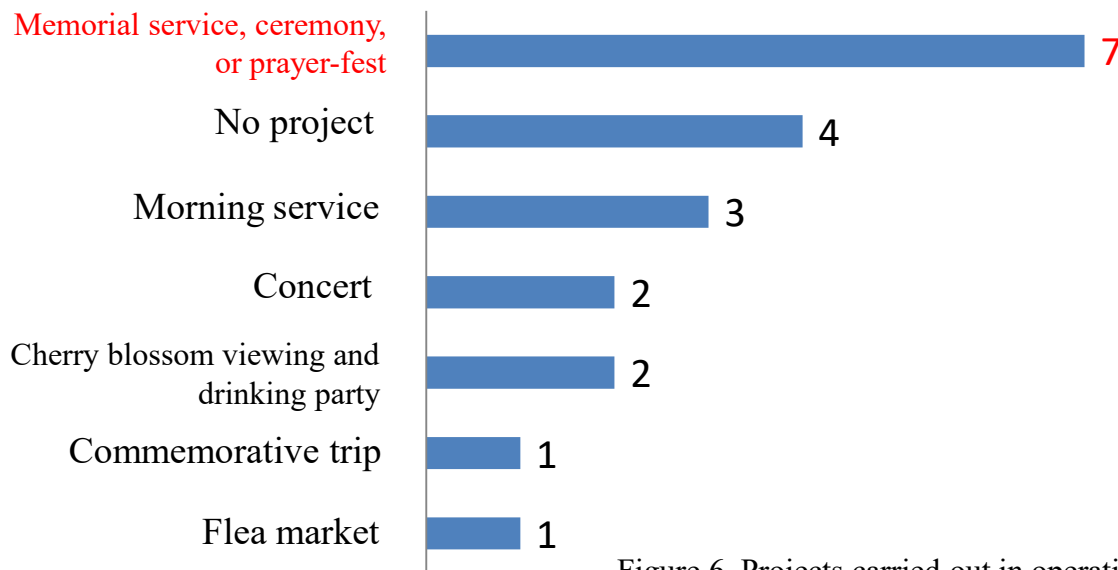


Photo 3. Scene of morning service at Dougenin Temple

Figure 6. Projects carried out in operation

→ After **memorial services for the dead**, some evacuees said, “**I felt soothed.**”

Summary on operation

Results

- In some **urban areas**, parties concerned with the shrines or temples served as operating leaders.
- In some **fishing villages**, community representatives served as operating leaders and shared roles with evacuees.

Merits

- Psychological care for evacuees through memorial services
- Networks with other shrines or temples and the patrons

Demerits (Minority opinions)

- Strain on parties concerned with the shrines or temples
- Incompatibility between funerals and evacuees' lives
- Difficulty in encouraging evacuees' independence