

Supplementary Material for
Rescue Plan Intelligent Generation for Natural Disasters:
An integrated approach based on Large Language Models

1 Disaster Case Database

Table 1: Detailed Information of C_1

Framework	Facet name	Facet value
Case P:<Problem description>	Facet P ₁ : <Time of earthquake occurrence>	202
	Facet P ₂ : <Richter magnitude scale>	6.6
	Facet P ₃ : <Whether it triggers a tsunami>	0
	Facet P ₄ : <Epicenter altitude>	2695
	Facet P ₅ : <Number of collapsed houses>	2754
	Facet P ₆ : <Affected population>	582000
	Facet P ₇ : <Population density at the time of earthquake occurrence>	120
	Facet P ₈ : <Number of deaths>	95
Case S:<Solution>	Facet S ₁ : <Rescue objectives>	<p>Protect lives: Immediately launch search and rescue operations, give priority to the rescue of trapped people, and set up temporary shelters.</p> <p>Restoration infrastructure: Rapidly assess and repair critical infrastructure such as hospitals, schools, transportation networks.</p>

Table 1: Detailed Information of C_1

Framework	Facet name	Facet value
	Facet S_2 : <Composition of rescue teams>	<p>Search and rescue teams: Composed of firefighters, police, soldiers and volunteers, carrying life detectors and heavy demolition equipment.</p> <p>Medical rescue team: Including doctors, nurses, psychological counselors, and the establishment of mobile medical stations to provide emergency treatment and psychological support.</p> <p>Engineering and technical support team: Engineers and technicians are responsible for assessing building safety and restoring water supply and communication networks.</p>
	Facet S_3 : <Emergency action steps>	<p>Preliminary assessment: Use drones and satellite images to assess the scope of the disaster and identify key rescue areas.</p> <p>Search and rescue operations: Mobilize all available resources for search and rescue, and give priority to rescuing personnel in key buildings such as schools and hospitals.</p> <p>Medical assistance: Temporary medical centers are set up in safe areas to provide emergency medical assistance to the injured.</p> <p>Water supply and power supply restoration: Emergency repair of the main water supply lines and power grid to ensure adequate drinking water and electricity in the rescue area.</p>
	Facet S_4 : <Resource allocation>	<p>Personnel: Mobilize rescue workers across the country, including the military, medical teams and volunteers.</p> <p>Supplies: Mobilize food, tents, blankets, medical supplies and other relief supplies to give priority to ensuring the basic living needs of the affected people.</p> <p>Transportation: To ensure the smooth transportation of rescue vehicles and materials, and to set up special rescue channels to speed up the transportation of rescue materials and personnel.</p>

Table 1: Detailed Information of C_1

Framework	Facet name	Facet value
	Facet S_5 : <Coordination and cooperation>	<p>Cooperation mechanism: Establish a close cooperation mechanism between the government, the military, civil society organizations and international aid agencies.</p> <p>Unified command of rescue operations: The emergency management department of the government shall uniformly command and coordinate the rescue forces of all parties to avoid the waste of resources and repeated labor.</p>
	Facet S_6 : <Follow-up actions>	<p>Continuous assessment: To continuously monitor the situation of the disaster areas and adjust the rescue plan according to the actual needs.</p> <p>Psychological assistance and community reconstruction: Providing mental health support, helping victims to resume normal life, and rebuild community facilities and public services.</p>

Table 2: Detailed Information of C_2

Framework	Facet name	Facet value
Case P:<Problem description>	Facet P_1 : <Time of earthquake occurrence>	260
	Facet P_2 : <Richter magnitude scale>	6.9
	Facet P_3 : <Whether it triggers a tsunami>	0
	Facet P_4 : <Epicenter altitude>	1500
	Facet P_5 : <Number of collapsed houses>	6000
	Facet P_6 : <Affected population>	600000
	Facet P_7 : <Population density at the time of earthquake occurrence>	82
	Facet P_8 : <Number of deaths>	111

Table 2: Detailed Information of C_2

Framework	Facet name	Facet value
Case S:<Solution>	Facet S ₁ : <Rescue objectives>	<p>Protect lives: Quickly assess the injured and provide emergency assistance.</p> <p>Restoration of infrastructure: To assess and repair damaged transportation networks and public facilities.</p>
	Facet S ₂ : <Composition of rescue teams>	<p>Search and rescue teams: Composed of firefighters and volunteers, carrying light rescue equipment for search and rescue.</p> <p>Medical rescue team: Including doctors and nurses, set up temporary medical centers to provide basic medical services.</p> <p>Engineering and Technical Support Team: The Engineer is responsible for assessing the building safety and restoring the infrastructure.</p>
	Facet S ₃ : <Emergency action steps>	<p>Preliminary assessment: The scope and extent of disaster impact are assessed through ground inspection and drone photography.</p> <p>Search and rescue operations: Give priority to the rescue of people trapped in collapsed buildings to ensure safe evacuation.</p> <p>Medical assistance: Provide medical assistance in safe areas and classify the treatment of the injured.</p> <p>Water supply and power supply restoration: Check and repair the damaged water supply and power supply facilities to restore the normal supply as soon as possible.</p>
	Facet S ₄ : <Resource allocation>	<p>Personnel: Mobilize local rescue workers and volunteers to participate in the rescue operations.</p> <p>Supplies: Prepare enough medical supplies, food and drinking water for the affected people.</p> <p>Transportation: To ensure the smooth passage of rescue vehicles, and the rapid transport of rescue personnel and supplies.</p>

Table 2: Detailed Information of C_2

Framework	Facet name	Facet value
	Facet S_5 : <Coordination and cooperation>	<p>Cooperation mechanism: Establish a cooperation mechanism between the government, civil society organizations and communities to participate in rescue operations.</p> <p>Unified command of rescue operations: The emergency management department of the local government shall coordinate all forces and effectively organize rescue operations.</p>
	Facet S_6 : <Follow-up actions>	<p>Continuous assessment: Continuous monitoring of the disaster areas and adjusting the rescue strategies as needed.</p> <p>Psychological assistance and community reconstruction: Providing mental health support services to help the victims return to normal life and rebuild the community and public facilities.</p>

Table 3: Detailed Information of C_3

Framework	Facet name	Facet value
Case P:<Problem description>	Facet P_1 : <Time of earthquake occurrence>	242
	Facet P_2 : <Richter magnitude scale>	5.9
	Facet P_3 : <Whether it triggers a tsunami>	0
	Facet P_4 : <Epicenter altitude>	2300
	Facet P_5 : <Number of collapsed houses>	600
	Facet P_6 : <Affected population>	120000
	Facet P_7 : <Population density at the time of earthquake occurrence>	118
	Facet P_8 : <Number of deaths>	5

Table 3: Detailed Information of C_3

Framework	Facet name	Facet value
Case S:<Solution>	Facet S ₁ : <Rescue objectives>	<p>Protecting lives: Keeping people safe, providing emergency shelters and psychological support.</p> <p>Infrastructure restoration: Quickly repair the slightly damaged infrastructure to ensure the normal operation of the city.</p>
	Facet S ₂ : <Composition of rescue teams>	<p>Search and rescue teams: Local firefighters and police, with basic rescue tools for onsite rescue.</p> <p>Medical rescue team: Medical staff in local hospitals to provide initial medical assistance for minor injuries.</p> <p>Engineering and technical support team: Urban maintenance personnel and engineers, responsible for the assessment and repair of the damaged infrastructure.</p>
	Facet S ₃ : <Emergency action steps>	<p>Preliminary assessment: To assess the affected area and extent of earthquake information released through local emergency management departments and media.</p> <p>Search and rescue operations: Focus on inspections of old building areas to ensure that no one is trapped.</p> <p>Medical assistance: Temporary medical sites shall be set up in the affected areas to provide treatment for minor injuries.</p> <p>Water supply and power supply restoration: Check and quickly repair damaged water and electricity facilities to ensure basic living supply.</p>
	Facet S ₄ : <Resource allocation>	<p>Personnel: Use local rescue teams and volunteers to carry out onsite rescue and safety inspection.</p> <p>Supplies: Allocate the necessary medical supplies and living supplies to meet the basic needs of the affected residents.</p> <p>Transportation: Keep the traffic smooth and ensure the rapid transport of rescue vehicles and supplies.</p>

Table 3: Detailed Information of C_3

Framework	Facet name	Facet value
	Facet S_5 : <Coordination and cooperation>	Cooperation mechanism: Local governments, community organizations and volunteer groups work together to cope with the impact of the earthquake.
	Facet S_6 : <Follow-up actions>	<p>Unified command of rescue operations: The local emergency management department is responsible for coordinating the rescue forces of all parties.</p> <p>Continuous assessment: Continuous monitoring of aftershocks to prevent possible secondary disasters.</p> <p>Psychological assistance and community reconstruction: Providing mental health services, helping residents return to normal life, and strengthening community education and training on disaster prevention and mitigation.</p>

Table 4: Detailed Information of C_4

Framework	Facet name	Facet value
Case P:<Problem description>	Facet P_1 : <Time of earthquake occurrence>	295
	Facet P_2 : <Richter magnitude scale>	7.2
	Facet P_3 : <Whether it triggers a tsunami>	1
	Facet P_4 : <Epicenter altitude>	1750
	Facet P_5 : <Number of collapsed houses>	5739
	Facet P_6 : <Affected population>	300000
	Facet P_7 : <Population density at the time of earthquake occurrence>	244
	Facet P_8 : <Number of deaths>	604

Table 4: Detailed Information of C_4

Framework	Facet name	Facet value
Case S:<Solution>	Facet S ₁ : <Rescue objectives>	<p>Protecting lives: Give priority to rescuing people in trapped in historic buildings to ensure the safety of residents.</p> <p>Protection of cultural heritage: To assess and protect damaged historic buildings and cultural sites.</p> <p>Restoration of infrastructure: Focus on the restoration of water, power and transportation networks.</p>
	Facet S ₂ : <Composition of rescue teams>	<p>Search and rescue teams: Professional rescue teams carry advanced equipment and focus on the rescue and protection of historic buildings.</p> <p>Medical aid team: Including emergency medical personnel and psychological counselors, providing medical assistance and psychological support.</p> <p>Cultural Heritage Protection Group: Cultural heritage experts and engineers to assess and protect the damaged cultural heritage.</p>
	Facet S ₃ : <Emergency action steps>	<p>Initial assessment: Use of drones and professional teams to assess cultural heritage damage and personnel safety risk.</p> <p>Search and rescue operations: Give priority to rescuing trapped people in historic buildings and cultural sites</p> <p>Medical assistance: Temporary medical centers are set up in safe areas to provide emergency medical assistance to the injured.</p> <p>Protection of cultural heritage: Take emergency measures to stabilize and protect damaged historic buildings and cultural sites.</p>
	Facet S ₄ : <Resource allocation>	<p>Personnel: Mobilize domestic and foreign rescue teams and cultural heritage protection experts.</p> <p>Materials: Deployment of rescue equipment, medical supplies, and cultural heritage protection materials.</p>

Table 4: Detailed Information of C_4

Framework	Facet name	Facet value
		Transportation: Ensure the rapid arrival and transportation of rescue vehicles and specialized equipment.
	Facet S_5 : <Coordination and cooperation>	Cooperation mechanism: To establish a cooperation mechanism between the government, international cultural organizations and nongovernmental organizations. Unified command of rescue operations: Unified command of government emergency management departments to coordinate rescue and cultural heritage protection operations.
	Facet S_6 : <Follow-up actions>	Continuous assessment: Monitor the status of the damaged area and cultural heritage and adjust the rescue plan. Psychological assistance and community reconstruction: Providing longterm mental health support, rebuilding the community and cultural heritage, and restoring residents' lives and cultural activities.

Table 5: Detailed Information of C_5

Framework	Facet name	Facet value
Case P:<Problem description>	Facet P_1 : <Time of earthquake occurrence>	329
	Facet P_2 : <Richter magnitude scale>	5.7
	Facet P_3 : <Whether it triggers a tsunami>	0
	Facet P_4 : <Epicenter altitude>	146
	Facet P_5 : <Number of collapsed houses>	8712
	Facet P_6 : <Affected population>	420000

Table 5: Detailed Information of C_5

Framework	Facet name	Facet value
Case S:<Solution>	Facet P ₇ : <Population density at the time of earthquake occurrence>	261
	Facet P ₈ : <Number of deaths>	14
	Facet S ₁ : <Rescue objectives>	<p>Protect lives: Immediately launch search and rescue operations to rescue trapped people and set up temporary shelters.</p> <p>Return agricultural production: Assess and repair damaged farmland and agricultural facilities.</p> <p>Rebuild communities: Repair damaged homes and public facilities and restore normal life order.</p>
	Facet S ₂ : <Composition of rescue teams>	<p>Search and rescue teams: Composed of local firefighters, police and volunteers, carrying basic rescue tools.</p> <p>Medical rescue team: Composed of medical personnel from local hospitals and neighboring cities to provide emergency medical assistance.</p> <p>Agricultural recovery team: Agricultural experts and technicians are responsible for assessing and restoring damaged farmland and guiding farmers in postdisaster reconstruction.</p>
	Facet S ₃ : <Emergency action steps>	<p>Preliminary assessment: Identify rescue priorities through community organizations and local governments.</p> <p>Search and rescue operations: Mobilize all available resources for search and rescue, giving priority to rescuing trapped people in residential and commercial areas.</p> <p>Medical assistance: Temporary medical centers are set up in safe areas to provide treatment for the injured.</p> <p>Agricultural recovery: To assess farmland damage, provide support for agricultural materials such as seeds and fertilizers, and assist farmers to resume production.</p>

Table 5: Detailed Information of C_5

Framework	Facet name	Facet value
	Facet S_4 : <Resource allocation>	<p>Personnel: Mobilize local rescue teams and volunteers to request support from neighboring cities.</p> <p>Supplies: Deployment of rescue equipment, medical supplies, food, water and temporary accommodation facilities.</p> <p>Traffic: Clean up and repair damaged roads to ensure smooth transport of rescue vehicles and supplies.</p>
	Facet S_5 : <Coordination and cooperation>	<p>Cooperation mechanism: Establish a close cooperation mechanism between local governments, community organizations and neighboring cities.</p> <p>Unified command of the rescue operations: The local government is responsible for the unified command and coordination of the rescue forces of all parties.</p>
	Facet S_6 : <Follow-up actions>	<p>Continuous assessment: To continuously monitor the situation of the disaster areas and adjust the rescue plan according to the actual needs.</p> <p>Community reconstruction: Rebuild housing and public facilities, restore normal life order, provide mental health support, and strengthen community cohesion and disaster response capacity.</p>

Table 6: Detailed Information of C_6

Framework	Facet name	Facet value
Case P:<Problem description>	Facet P_1 : <Time of earthquake occurrence>	61
	Facet P_2 : <Richter magnitude scale>	5.5
	Facet P_3 : <Whether it triggers a tsunami>	0
	Facet P_4 : <Epicenter altitude>	1950

Table 6: Detailed Information of C_6

Framework	Facet name	Facet value
	Facet P_5 : <Number of collapsed houses>	2108
	Facet P_6 : <Affected population>	140000
	Facet P_7 : <Population density at the time of earthquake occurrence>	115
	Facet P_8 : <Number of deaths>	0
Case S:<Solution>	Facet S_1 : <Rescue objectives>	<p>Protect lives: Rescue the trapped people in time to ensure the safety of residents.</p> <p>Assessment and repair damaged buildings: Focus on old homes and public facilities.</p> <p>Return daily life: Quickly restore basic services and business activities.</p>
	Facet S_2 : <Composition of rescue teams>	<p>Search and rescue teams: Composed of local firefighters, police and volunteers to conduct initial search and safety assessments.</p> <p>Medical rescue team: Composed of medical staff of local hospitals to provide emergency medical assistance.</p> <p>Building Safety Assessment Team: Professional engineers and architects assess the safety status of the building and determine whether evacuation or emergency repair is required.</p>
	Facet S_3 : <Emergency action steps>	<p>Preliminary assessment: Use local governments and community networks to quickly assess disasters and prioritize rescue efforts.</p> <p>Search and rescue operations: Launch search and rescue operations, focusing on old buildings and public places such as schools</p> <p>Medical assistance: Set up temporary rescue stations to provide medical services for the injured residents.</p> <p>Building safety assessment: conduct safety inspection of damaged buildings to guide residents to return to their homes safely.</p>

Table 6: Detailed Information of C_6

Framework	Facet name	Facet value
	Facet S_4 : <Resource allocation>	<p>Personnel: Mobilize local rescue workers and volunteers, and request support from neighboring cities if necessary.</p> <p>Supplies: Dispensing of medical supplies, food, water and temporary accommodation facilities.</p> <p>Transportation: Ensure smooth transportation of rescue vehicles and materials, and give priority to clearing important traffic routes.</p>
	Facet S_5 : <Coordination and cooperation>	<p>Cooperation mechanism: Establish cooperation mechanisms for local governments, community organizations and neighboring cities.</p> <p>Unified command of rescue operations: Local governments are responsible for coordinating all forces and effectively organizing rescue operations.</p>
	Facet S_6 : <Follow-up actions>	<p>Continuous assessment: Adjust the rescue and recovery plans according to the disaster changes.</p> <p>Community reconstruction: Repair damaged buildings, restore public services, provide mental health support, and strengthen community disaster resistance training.</p>

Table 7: Detailed Information of C_7

Framework	Facet name	Facet value
Case P:<Problem description>	Facet P_1 : <Time of earthquake occurrence>	36
	Facet P_2 : <Richter magnitude scale>	6.7
	Facet P_3 : <Whether it triggers a tsunami>	1
	Facet P_4 : <Epicenter altitude>	105
	Facet P_5 : <Number of collapsed houses>	15000

Table 7: Detailed Information of C_7

Framework	Facet name	Facet value
	Facet P_6 : <Affected population>	500000
	Facet P_7 : <Population density at the time of earthquake occurrence>	368
	Facet P_8 : <Number of deaths>	74
Case S:<Solution>	Facet S_1 : <Rescue objectives>	<p>Protect lives: Rapid search and rescue operations to rescue trapped villagers and provide temporary shelters.</p> <p>Return agricultural production: Assess and repair damaged farmland and agricultural facilities to ensure food security.</p> <p>Rebuild infrastructure: Repair damaged roads, Bridges and Wells and restore basic living conditions.</p>
	Facet S_2 : <Composition of rescue teams>	<p>Search and rescue teams: Composed of local villagers, volunteers and professional rescue teams, carrying basic rescue tools.</p> <p>Medical rescue team: Composed of medical personnel and volunteer doctors near the town to provide emergency medical assistance.</p> <p>Agricultural recovery team: Agricultural experts and technicians to assist in the assessment of farmland damage and guide the postdisaster agricultural reconstruction.</p>
	Facet S_3 : <Emergency action steps>	<p>Preliminary assessment: Use the community network and villagers' selforganization to conduct disaster assessment and determine the focus of rescue.</p> <p>Search and rescue operations: Mobilize villagers to search and rescue, giving priority to helping villagers trapped in collapsed houses.</p> <p>Medical assistance: Set up temporary medical centers in safe areas to provide treatment for the injured and prevent the spread of the disease.</p> <p>Agricultural recovery: To assess farmland damage, distribute seeds and fertilizers, and help farmers resume production.</p>

Table 7: Detailed Information of C_7

Framework	Facet name	Facet value
	Facet S_4 : <Resource allocation>	<p>Personnel: Mobilize villagers to participate in rescue and reconstruction work, and request support from neighboring towns and external rescue teams.</p> <p>Supplies: Deployment of rescue tools, medical supplies, food, water and temporary accommodation facilities.</p> <p>Traffic: Clean up and repair damaged roads to ensure smooth transport of rescue vehicles and supplies.</p>
	Facet S_5 : <Coordination and cooperation>	<p>Cooperation mechanism: Establish a cooperation mechanism between village committees, government agencies and nongovernmental organizations.</p> <p>Unified command of the rescue operations: The village committee is responsible for the overall planning and coordination to ensure the orderly conduct of the rescue and reconstruction work.</p>
	Facet S_6 : <Follow-up actions>	<p>Continuous assessment: Continuous monitoring of the disaster areas and adjustment of rescue and reconstruction plans according to actual needs.</p> <p>Community reconstruction: Rebuilding houses and public facilities, restoring agricultural production, providing mental health support, and strengthening disaster response capacity training.</p>

Table 8: Detailed Information of C_8

Framework	Facet name	Facet value
Case P:<Problem description>	Facet P_1 : <Time of earthquake occurrence>	232
	Facet P_2 : <Richter magnitude scale>	5
	Facet P_3 : <Whether it triggers a tsunami>	0

Table 8: Detailed Information of C_8

Framework	Facet name	Facet value
	Facet P_4 : <Epicenter altitude>	2783
	Facet P_5 : <Number of collapsed houses>	191
	Facet P_6 : <Affected population>	20000
	Facet P_7 : <Population density at the time of earthquake occurrence>	41
	Facet P_8 : <Number of deaths>	0
Case S:<Solution>	Facet S_1 : <Rescue objectives>	<p>Protecting lives: Ensure the safety of the villagers and provide necessary medical assistance.</p> <p>Assessment and repair damaged buildings: Focus on the safety of farmhouses and public facilities.</p> <p>Restoration of agricultural activities: Rapid recovery of productive capacity on damaged farmland.</p>
	Facet S_2 : <Composition of rescue teams>	<p>Search and rescue teams: Rescue teams organized by the villagers to conduct preliminary search and rescue and safety assessment.</p> <p>Medical rescue team: Composed of village health workers and medical staff from nearby medical institutions to provide basic medical services.</p> <p>Agricultural recovery team: Composed of agricultural instructors and experienced farmers in the village to guide the postdisaster agricultural recovery.</p>
	Facet S_3 : <Emergency action steps>	<p>Preliminary assessment: Use the communication network in the village to quickly assess the disaster and determine the damage.</p> <p>Search and rescue operations: Organize villagers to conduct selfrescue and mutual rescue to ensure that no one is trapped.</p> <p>Medical assistance: Set up temporary rescue points in the village clinics to provide treatment for the villagers with minor injuries.</p>

Table 8: Detailed Information of C_8

Framework	Facet name	Facet value
		Agricultural recovery: Rapid repair of damaged farmland to ensure continued agricultural production.
	Facet S ₄ : <Resource allocation>	<p>Personnel: Mainly rely on the villagers for self-rescue and mutual rescue, and request external rescue forces when necessary.</p> <p>Supplies: Allocate basic medical supplies, living supplies and supplies needed for agricultural recovery.</p> <p>Transportation: Ensure the smooth roads in the village for the transportation of rescue workers and supplies.</p>
	Facet S ₅ : <Coordination and cooperation>	<p>Cooperation mechanism: Establish a close cooperation mechanism between village committees, adjacent villages and government departments.</p> <p>Unified command of the rescue operations: The village committee is responsible for the overall planning and coordination to ensure the effective implementation of the rescue work.</p>
	Facet S ₆ : <Follow-up actions>	<p>Continuous assessment: Adjust the rescue and recovery plans according to the disaster changes.</p> <p>Community reconstruction: Repair the damaged buildings and public facilities, restore the normal life order, and strengthen the villagers' awareness of disaster prevention and emergency response ability.</p>

Table 9: Detailed Information of C_9

Framework	Facet name	Facet value
Case P:<Problem description>	Facet P ₁ : <Time of earthquake occurrence>	69

Table 9: Detailed Information of C_9

	Facet P_2 : <Richter magnitude scale>	9
	Facet P_3 : <Whether it triggers a tsunami>	1
	Facet P_4 : <Epicenter altitude>	207
	Facet P_5 : <Number of collapsed houses>	12165
	Facet P_6 : <Affected population>	2500000
	Facet P_7 : <Population density at the time of earthquake occurrence>	115.4
	Facet P_8 : <Number of deaths>	15900
Case S:<Solution>	Facet S_1 : <Rescue objectives>	<p>Protect lives: Rapid search and rescue operations to rescue trapped people and provide temporary shelters.</p> <p>Preventing secondary disasters: Monitoring and preventing a possible tsunami and evacuating coastal residents.</p> <p>Recovery economic activity: Restore port facilities and commercial areas as soon as possible to ensure the recovery of tourism.</p>
	Facet S_2 : <Composition of rescue teams>	<p>Search and rescue teams: Composed of professional rescue teams, troops and volunteers, carrying heavy rescue equipment.</p> <p>Medical rescue team: Including doctors, nurses, psychological counselors, and set up mobile medical stations to provide emergency treatment and psychological support.</p> <p>Tsunami warning and evacuation team: Responsible for monitoring potential tsunami risk and organizing emergency evacuation in coastal areas.</p>
	Facet S_3 : <Emergency action steps>	<p>Preliminary assessment: Use satellite images and field reports to assess the disaster scope and identify key rescue areas.</p> <p>Search and rescue operations: Mobilize all available resources for search and rescue, and give priority to rescuing trapped people in ports and coastal areas.</p>

Table 9: Detailed Information of C_9

Facet S_4 : <Resource allocation>	<p>Medical assistance: Temporary medical centers are set up in safe areas to provide emergency medical assistance to the injured.</p> <p>Tsunami warning and evacuation: According to the information of the tsunami warning system, timely evacuate the coastal residents to the safe area.</p> <p>Personnel: Mobilize domestic and foreign rescue teams and medical teams, and organize a large number of volunteers to participate in the rescue.</p> <p>Supplies: Mobilization rescue equipment, medical supplies, food, water and temporary accommodation facilities.</p> <p>Transportation: Ensure smooth transportation of rescue vehicles and supplies, and give priority to repairing roads leading to ports and coastal areas.</p>
Facet S_5 : <Coordination and cooperation>	<p>Cooperation mechanism: Establish a close cooperation mechanism between the government, the military, civil organizations and international aid agencies.</p> <p>Unified command of rescue operations: The government emergency management department shall uniformly command and coordinate the rescue forces of all departments.</p>
Facet S_6 : <Follow-up actions>	<p>Continuous assessment: Continuous monitoring of disaster areas and adjustment of rescue and recovery plans according to actual needs.</p> <p>Economic and community reconstruction: Rebuild port facilities and commercial areas, restore tourist attractions, provide mental health support, and strengthen the disaster prevention and mitigation capacity in the coastal area.</p>

Table 10: Detailed Information of C_{10}

Framework	Facet name	Facet value
Case P:<Problem description>	Facet P ₁ : <Time of earthquake occurrence>	103
	Facet P ₂ : <Richter magnitude scale>	7.1
	Facet P ₃ : <Whether it triggers a tsunami>	0
	Facet P ₄ : <Epicenter altitude>	4285
	Facet P ₅ : <Number of collapsed houses>	15000
	Facet P ₆ : <Affected population>	200000
	Facet P ₇ : <Population density at the time of earthquake occurrence>	27
	Facet P ₈ : <Number of deaths>	2698
Case S:<Solution>	Facet S ₁ : <Rescue objectives>	<p>Protecting lives: Ensuring the safety of the people and providing the necessary rescue and support.</p> <p>Assessment and repair of damaged buildings: Focus on the safety of tourist facilities and residential areas.</p> <p>Maintaining economic stability: To resume business activities as soon as possible to ensure the continuous operation of tourism.</p>
	Facet S ₂ : <Composition of rescue teams>	<p>Search and rescue teams: Composed of local firefighters, police and volunteers to conduct initial search and safety assessments.</p> <p>Medical rescue team: Composed of medical staff of local hospitals to provide emergency medical assistance.</p> <p>Building Safety Assessment Team: Professional engineers and architects assess the safety status of the building and determine whether evacuation or emergency repair is required.</p>

Table 10: Detailed Information of C_{10}

Framework	Facet name	Facet value
	Facet S ₄ : <Resource allocation>	Preliminary assessment: Use local governments and media to release earthquake information to assess the areas and extent of impact.
		Search and rescue operations: Launch search and rescue operations, focusing on tourist areas and dense residential areas.
		Medical assistance: Set up temporary rescue stations to provide medical services for the injured residents.
	Facet S ₅ : <Coordination and cooperation>	Building safety assessment: Conduct safety inspection of damaged buildings to guide residents to return to their homes safely.
		Personnel: Mobilize local rescue workers and volunteers, and request support from neighboring cities if necessary.
	Facet S ₆ : <Follow-up actions>	Supplies: Dispensing of medical supplies, food, water and temporary accommodation facilities.
		Transportation: Ensure smooth transportation of rescue vehicles and materials, and give priority to clearing important traffic routes.
		Cooperation mechanism: Establish cooperation mechanisms for local governments, community organizations and neighboring cities.
		Unified command of rescue operations: Local governments are responsible for coordinating all forces and effectively organizing rescue operations.
		Continuous assessment: Adjust the rescue and recovery plans according to the disaster changes.
		Economic and community reconstruction: Restoring damaged buildings, restoring public services, providing mental health support, and strengthening community resilience training.

Table 11: Detailed Information of C_{11}

Framework	Facet name	Facet value
Case P:<Problem description>	Facet P ₁ : <Time of earthquake occurrence>	109
	Facet P ₂ : <Richter magnitude scale>	7
	Facet P ₃ : <Whether it triggers a tsunami>	0
	Facet P ₄ : <Epicenter altitude>	2240
	Facet P ₅ : <Number of collapsed houses>	26411
	Facet P ₆ : <Affected population>	1520000
	Facet P ₇ : <Population density at the time of earthquake occurrence>	88
	Facet P ₈ : <Number of deaths>	196
Case S:<Solution>	Facet S ₁ : <Rescue objectives>	<p>Protect lives: Rapid search and rescue operations to rescue trapped people and provide temporary shelters.</p> <p>Preventing secondary disasters: Monitoring volcanic activity to prevent possible eruptions and ashes.</p> <p>Restore urban operation: Repair the damaged infrastructure as soon as possible to ensure residents' life and the normal operation of the city.</p>
	Facet S ₂ : <Composition of rescue teams>	<p>Search and rescue teams: Composed of professional rescue teams, troops and volunteers, carrying heavy rescue equipment.</p> <p>Medical rescue team: Including doctors, nurses, psychological counselors, and set up mobile medical stations to provide emergency treatment and psychological support.</p> <p>Volcanic monitoring and warning team: Composed of geologists and volcanologists, responsible for monitoring volcanic activity and providing warning information.</p>

Table 11: Detailed Information of C_{11}

Facet S_3 : <Emergency action steps>	<p>Preliminary assessment: Use satellite images and geological monitoring data to assess the disaster scope and determine the key rescue areas.</p> <p>Search and rescue operations: Mobilize all available resources for search and rescue, and give priority to rescuing trapped people in residential areas and tourist attractions.</p> <p>Medical assistance: Temporary medical centers are set up in safe areas to provide emergency medical assistance to the injured.</p> <p>Volcanic monitoring and early warning: Strengthen the monitoring of volcanic activities, timely release of early warning information, and guide evacuation plans.</p>
Facet S_4 : <Resource allocation>	<p>Personnel: Mobilize domestic and foreign rescue teams and medical teams, and organize a large number of volunteers to participate in the rescue.</p> <p>Supplies: Mobilization rescue equipment, medical supplies, food, water and temporary accommodation facilities.</p> <p>Transportation: Ensure smooth transport of rescue vehicles and supplies, and give priority to restoring roads leading to volcanic monitoring stations and residential areas.</p>
Facet S_5 : <Coordination and cooperation>	<p>Cooperation mechanism: Establish a close cooperation mechanism between the government, the military, civil organizations and international aid agencies.</p> <p>Unified command of rescue operations: The government emergency management department shall uniformly command and coordinate the rescue forces of all departments.</p>
Facet S_6 : <Follow-up actions>	<p>Continuous assessment: Continuous monitoring of disaster areas and volcanic activities, and adjustment of rescue and recovery plans according to</p>

Table 11: Detailed Information of C_{11}

	actual needs.
	Urban reconstruction and volcanic disaster prevention: Rebuilding damaged infrastructure, strengthening volcanic disaster preparedness, providing mental health support, and enhancing community preparedness and response capacity.

Table 12: Detailed Information of C_{12}

Framework	Facet name	Facet value
Case P:<Problem description>	Facet P ₁ : <Time of earthquake occurrence>	57
	Facet P ₂ : <Richter magnitude scale>	8.8
	Facet P ₃ : <Whether it triggers a tsunami>	1
	Facet P ₄ : <Epicenter altitude>	193
	Facet P ₅ : <Number of collapsed houses>	30142
	Facet P ₆ : <Affected population>	800000
	Facet P ₇ : <Population density at the time of earthquake occurrence>	26
	Facet P ₈ : <Number of deaths>	521
Case S:<Solution>	Facet S ₁ : <Rescue objectives>	<p>Protect lives: Rapid search and rescue operations to rescue trapped villagers and provide temporary shelters.</p> <p>Prevent secondary disasters: Monitor and prevent possible landslides and debris flows.</p> <p>Restoration of infrastructure: Repair damaged roads, bridges and utilities as soon as possible and restore traffic and electricity supply.</p>

Table 12: Detailed Information of C_{12}

Facet S_2 : <Composition of rescue teams>	<p>Search and rescue teams: Composed of professional rescue teams, troops and volunteers, carrying heavy rescue equipment and mountaineering equipment.</p> <p>Medical rescue team: Including doctors, nurses, psychological counselors, and set up mobile medical stations to provide emergency treatment and psychological support.</p> <p>Geological disaster assessment team: Composed of geologists and engineers, responsible for assessing the risk of landslides and debris flows, guiding evacuation and disaster prevention measures.</p>
Facet S_3 : <Emergency action steps>	<p>Preliminary assessment: Use drones and satellite images to assess the disaster range and identify key rescue areas.</p> <p>Search and rescue operations: Mobilize all available resources for search and rescue, and give priority to rescuing trapped people in mountain villages and highrisk areas of landslides.</p> <p>Medical assistance: Temporary medical centers are set up in safe areas to provide emergency medical assistance to the injured.</p> <p>Geological disaster assessment: Assess the stability of mountains and formulate measures to prevent landslides and debris flow.</p>
Facet S_4 : <Resource allocation>	<p>Personnel: Mobilize domestic and foreign rescue teams and medical teams, and organize a large number of volunteers to participate in the rescue.</p> <p>Supplies: Mobilization rescue equipment, medical supplies, food, water and temporary accommodation facilities.</p> <p>Transportation: Ensure smooth transport of rescue vehicles and materials, and give priority to repairing roads leading to mountain villages and severely affected areas.</p>

Table 12: Detailed Information of C_{12}

Facet S_5 : <Coordination and cooperation>	<p>Cooperation mechanism: Establish a close cooperation mechanism between the government, the military, civil organizations and international aid agencies.</p> <p>Unified command of rescue operations: The government emergency management department shall uniformly command and coordinate the rescue forces of all departments.</p>
Facet S_6 : <Follow-up actions>	<p>Continuous assessment: Continuous monitoring of disaster areas and geological disaster risks, and adjustment of rescue and recovery plans according to actual needs.</p> <p>Infrastructure reconstruction and disaster prevention: Rebuild damaged infrastructure, strengthen the capacity to prevent and control landslides and debris flows, provide mental health support, and strengthen community preparedness and response capabilities.</p>

2 Relief Plans Generated by LLM Based on Different Prompting Methods

2.1 Plan1: Basic Prompt

Table 13: Rescue plan generated based on Basic Prompt

Facet name	Facet value
Rescue objectives	Protect lives: Quickly rescue trapped people and provide temporary shelter. Prevent secondary disasters: Monitor secondary disasters such as tsunami and evacuate the affected people in time. Restoration basic order: Repair damaged infrastructure and provide basic living materials and services.
Composition of rescue teams	Search and rescue teams: Professional rescue teams, military and volunteers. Medical rescue team: Doctors, nurses, psychological counselors. Infrastructure restoration team: Engineers and technicians.
Emergency action steps	Preliminary assessment: Using satellite images and field reports. Search and rescue operations: Give priority to rescue the trapped people. Medical assistance: Set up a temporary medical center to provide first aid and psychological support. Infrastructure repair: The repair of the damaged infrastructure.
Resource allocation	Personnel: Mobilize domestic and foreign rescue teams and medical teams. Supplies: Deployment of rescue equipment, medical supplies, food, water and temporary accommodation facilities. Transportation: Ensure smooth rescue passage.
Coordination and cooperation	Cooperation mechanism: Establish a cooperation mechanism between the government, the military, nongovernmental organizations and international aid institutions. Unified command: Unified command and coordination by the emergency management department.
Follow-up actions	Continuous assessment: Continuous monitoring of the disaster situation and adjustment of the rescue plan. Community reconstruction: Rebuilding damaged communities and providing mental health support.

2.2 Plan 2: Role-playing

Prompt: Imagine you are an emergency management expert reviewing the structured cases of two earthquake disasters, which introduce the pre-disaster response strategies of two regions. Based on these structured cases, please develop a comprehensive rescue plan for the

major earthquake in Hualien, Taiwan.

Table 14: Detailed Information of P_2

Facet name	Facet value
Rescue objectives	<p>Protect lives: Conduct rapid search and rescue operations to rescue trapped people and provide temporary shelters.</p> <p>Preventing secondary disasters: Monitor and prevent possible tsunamis and aftershocks, and evacuate residents in coastal and dangerous areas.</p> <p>Restoration infrastructure: Restore traffic, communications and energy facilities as soon as possible to ensure rescue operations and the restoration of life order.</p>
Composition of rescue teams	<p>Search and rescue teams: Composed of professional rescue teams, fire brigade, army and volunteers, carrying heavy rescue equipment and life detectors.</p> <p>Medical rescue team: Including doctors, nurses, psychological counselors, and the establishment of mobile medical stations to provide emergency treatment and psychological support.</p> <p>Tsunami warning and evacuation team: Responsible for monitoring potential tsunami risk and organizing emergency evacuation in coastal areas.</p>
Emergency action steps	<p>Immediately launch the emergency response mechanism and set up a rescue command center.</p> <p>Satellite images and field reports were used to assess the scope of the disaster and identify key areas for rescue.</p> <p>We will mobilize all available resources for search and rescue, and priority will be given to rescuing trapped people in the worst-hit areas and coastal areas.</p> <p>Temporary medical centers shall be set up in safe areas to provide emergency medical assistance to the injured.</p> <p>According to the information of the tsunami warning system, evacuate the coastal residents to the safe areas in time.</p>
Resource allocation	<p>Personnel: Mobilize domestic and foreign rescue teams and medical teams, and organize a large number of volunteers to participate in the rescue.</p> <p>Supplies: Mobilization of rescue equipment, medical supplies, food, water, and temporary accommodation facilities.</p> <p>Transportation: To ensure the smooth transportation of rescue vehicles and materials, and give priority to repairing the roads leading to the worst-hit areas.</p>
Coordination and cooperation	<p>Establish a close cooperation mechanism between the government, the military, nongovernmental organizations and international aid agencies.</p>

Table 14: Detailed Information of P_2

Facet name	Facet value
	The rescue operation shall be uniformly directed and coordinated by the government emergency management department to coordinate all rescue forces.
Follow-up actions	Continue to assess the situation in the disaster areas and adjust our rescue and recovery plans according to our actual needs. Rebuild infrastructure, such as transportation, communications and energy facilities, to restore normal life order. Provide mental health support and strengthen the disaster prevention and mitigation capacity in the coastal areas.

2.3 Plan 3: Chain-of-Thought Prompting

Prompt: Based on the structured cases of two earthquake disasters, which introduce the pre-disaster response strategies of two regions, please develop a comprehensive rescue plan for the major earthquake in Hualien, Taiwan. I will guide you step by step through the task; first, you only need to explain your reasoning and thinking in as much detail as possible. Then, based on the cases and your reasoning and thinking, generate the final rescue plan.

Table 15: Detailed Information of P_3

Facet name	Facet value
Rescue objectives	<p>Protect lives: Launch rapid search and rescue operations to rescue trapped people and provide temporary shelters.</p> <p>Preventing secondary disasters: Monitoring and preventing a possible tsunami and evacuating coastal residents in time.</p> <p>Recovery economic activities: Restore port facilities and tourist attractions as soon as possible to ensure the recovery of fisheries and tourism.</p> <p>Community reconstruction: Repair damaged houses and public facilities, restore normal life order, and provide mental health support.</p>
Composition of rescue teams	<p>Search and rescue teams: Composed of professional rescue teams, troops and volunteers, carrying heavy rescue equipment.</p> <p>Medical rescue team: Including doctors, nurses, psychological counselors, and the establishment of mobile medical stations to provide emergency treatment and psychological support.</p>

Table 15: Detailed Information of P_3

Facet name	Facet value
Emergency action steps	Tsunami warning and evacuation team: Responsible for monitoring potential tsunami risk and organizing emergency evacuation in coastal areas.
	Economic Recovery Team: Focus on the rapid recovery of fisheries and tourism, coordinating resources to restore port facilities and tourist attractions.
	Community reconstruction team: Responsible for the restoration of residential and public facilities, providing mental health support and enhancing community cohesion.
	Preliminary assessment: Use satellite images and field reports to assess the disaster scope and identify key rescue areas.
	Search and rescue operations: Mobilize all available resources for search and rescue, and give priority to rescuing trapped people in ports and coastal areas.
	Medical assistance: Temporary medical centers are set up in safe areas to provide emergency medical assistance to the injured.
	Tsunami warning and evacuation: According to the information of the tsunami warning system, evacuate the coastal residents to a safe area in time.
Resource allocation	Recovery of economic activity: To assess the damage to fisheries and tourism, to develop rapid recovery plans, and to repair key facilities.
	Community reconstruction: Rebuilding homes and public facilities, providing mental health support, and strengthening community cohesion.
	Personnel: Mobilize domestic and foreign rescue teams and medical teams, and organize a large number of volunteers to participate in the rescue.
	Supplies: Mobilization of rescue equipment, medical supplies, food, water, and temporary accommodation facilities.
Coordination and cooperation	Transportation: Ensure the smooth transportation of rescue vehicles and materials, and give priority to repairing the roads leading to the ports and coastal areas.
	Cooperation mechanism: Establish a close cooperation mechanism between the government, the military, civil society organizations and international aid agencies.
	Unified command of rescue operations: The emergency management department of the government shall uniformly command and coordinate the rescue forces of all parties.

Table 15: Detailed Information of P_3

Facet name	Facet value
Follow-up actions	<p>Continuous assessment: Continuously monitor the situation of disaster areas and adjust rescue and recovery plans according to actual needs.</p> <p>Economic and community reconstruction: Rebuilding port facilities and commercial areas, restoring tourist attractions, providing mental health support, and strengthening the disaster prevention and mitigation capacity in the coastal area.</p>

2.4 Plan 4: Reverse Thinking

Prompt: Review the structured cases of the two earthquake disasters, which introduce the pre-disaster response strategies of two regions. Based on these structured cases, please develop a comprehensive rescue plan for the major earthquake in Hualien, Taiwan. Consider the worst-case scenarios in the rescue process. How would you modify the initial rescue plan? Consider alternative strategies and backup plans to ensure effective response to challenges.

Table 16: Detailed Information of P_4

Facet name	Facet value
Rescue objectives	<p>Protect lives: Quickly start search and rescue operations, rescue trapped people, and provide temporary shelters in need.</p> <p>Preventing secondary disasters: Strengthen monitoring and prevention of possible tsunamis and establish multiple evacuation routes to deal with possible traffic congestion.</p> <p>Restof economic activity: Develop a flexible restoration plan, prioritize restoration of key port facilities and commercial areas, while considering temporary solutions to support the tourism recovery.</p>
Composition of rescue teams	<p>Search and rescue teams: Add backup teams to call in to major rescue teams in trouble.</p> <p>Medical rescue team: Multiple mobile medical stations are set up to meet the medical needs of different regions.</p> <p>Tsunami warning and evacuation team: Strengthen early warning facilities in coastal areas and establish a rapid response mechanism.</p>

Table 16: Detailed Information of P_4

Facet name	Facet value
Emergency action steps	<p>Preliminary assessment: Disaster assessment using multisource information, including satellite images, drone reconnaissance, and field reporting.</p> <p>Search and rescue action: Implement a phased search and rescue strategy, give priority to rescue key areas, and launch search and rescue in surrounding areas.</p> <p>Medical assistance: Flexibly allocate medical resources according to the situation of the injured, and give priority to the handling of the seriously injured.</p>
	<p>Tsunami warning and evacuation: Implement a dynamic evacuation plan and adjust the evacuation strategy according to the realtime tsunami risk.</p>
Resource allocation	<p>Personnel: Establish a reserve pool of rescue personnel in case of emergency.</p> <p>Materials: Establish multiple material reserve centers, scattered layout to reduce the transportation pressure.</p> <p>Transportation: Develop multiple rescue routes to prevent major roads.</p>
Coordination and cooperation	<p>Cooperation mechanism: Establish a more flexible cooperation mechanism to quickly adjust cooperation strategies in different situations.</p> <p>Unified command of rescue operations: Establish a multilevel command system to ensure the rapid transfer of the command center when the main command is damaged.</p>
Follow-up actions	<p>Continuous assessment: Implement a dynamic assessment mechanism and adjust rescue and recovery plans according to changes in disaster.</p> <p>Economic and community reconstruction: To develop diversified reconstruction programs, including temporary solutions and longterm reconstruction plans.</p> <p>Postdisaster recovery: Strengthen mental health support and community cohesion construction to promote the rapid recovery of residents in disaster areas.</p>

2.5 Plan 5: Iterative Refinement

Prompt: Based on the structured cases of the two earthquake disasters, which introduce the pre-disaster response strategies of two regions,

and the case you have just generated, find their shortcomings and develop a comprehensive rescue plan to address the current situation for the major earthquake in Hualien, Taiwan.

Table 17: Detailed Information of P_5

Facet name	Facet value
Rescue objectives	<p>Protect lives: Launch rapid search and rescue operations to rescue trapped people and provide temporary shelters.</p> <p>Preventing secondary disasters: Monitoring and preventing a possible tsunami and evacuating coastal residents in time.</p> <p>Restore infrastructure: Repair public facilities and transportation networks as soon as possible to restore the normal order of life.</p> <p>Provide psychological support: To provide mental health support and intervention for the victims and rescue workers.</p>
Composition of rescue teams	<p>Search and rescue teams: Composed of professional rescue teams, troops and volunteers, carrying heavy rescue equipment.</p> <p>Medical rescue team: Including doctors, nurses, psychological counselors, and the establishment of mobile medical stations to provide emergency treatment and psychological support.</p> <p>Tsunami warning and evacuation team: Responsible for monitoring potential tsunami risk and organizing emergency evacuation in coastal areas.</p> <p>Infrastructure Recovery Team: Engineers and technicians are responsible for assessing and repairing the damaged infrastructure.</p> <p>Communication and information sharing team: Establish and maintain emergency communication systems to ensure the timely and accurate sharing of information.</p>
Emergency action steps	<p>Preliminary assessment: Use satellite images and field reports to assess the disaster scope and identify key rescue areas.</p> <p>Search and rescue operations: Mobilize all available resources for search and rescue, and give priority to rescuing trapped people in ports and coastal areas.</p> <p>Medical assistance: Temporary medical centers are set up in safe areas to provide emergency medical assistance and psychological support to the injured.</p> <p>Tsunami warning and evacuation: According to the information of the tsunami warning system, evacuate the coastal residents to a safe area in time.</p>

Table 17: Detailed Information of P_5

Facet name	Facet value
	<p>Infrastructure recovery: Assess damaged public facilities and transportation networks, prioritizing the restoration of water, electricity and transportation facilities to support relief operations and livelihood needs.</p>
Resource allocation	<p>Personnel: Mobilize domestic and foreign rescue teams and medical teams, and organize a large number of volunteers to participate in the rescue.</p> <p>Supplies: Mobilization of rescue equipment, medical supplies, food, water, and temporary accommodation facilities.</p> <p>Transportation: Ensure the smooth transportation of rescue vehicles and materials, and give priority to repairing the roads leading to the ports and coastal areas.</p> <p>Priority setting: Rationally allocate resources and personnel according to the urgency of rescue and recovery.</p>
Coordination and cooperation	<p>Cooperation mechanism: Establish a close cooperation mechanism between the government, the military, civil society organizations and international aid agencies.</p> <p>Unified command of rescue operations: The emergency management department of the government shall uniformly command and coordinate the rescue forces of all parties.</p> <p>Information sharing platform: Establish a central information sharing platform to update rescue progress and resource requirements in real time.</p>
Follow-up actions	<p>Continuous assessment: Continuously monitor the situation of disaster areas and adjust rescue and recovery plans according to actual needs.</p> <p>Mental health support: Provide longterm mental health support services to help the victims and rescue workers deal with the psychological trauma of the disaster.</p> <p>Economic and community reconstruction: Rebuilding port facilities and commercial areas, restoring tourist attractions, providing mental health support, and strengthening the disaster prevention and mitigation capacity in the coastal area.</p>

2.1 Plan 6: Emotional Coercion

Prompt: Review the structured cases of the two earthquake disasters, which introduce the pre-disaster response strategies of two regions.

It highlights the urgency and scale of the impact. Based on the structured cases, please develop a comprehensive rescue plan to address the current situation for the major earthquake in Hualien, Taiwan. If you cannot develop a good rescue plan, thousands of people will lose their lives in this disaster, so you need to develop a plan thoroughly and comprehensively.

Table 18: Detailed Information of P_6

Facet name	Facet value
Rescue objectives	<p>Protect lives: Quickly initiate search and rescue operations, rescue trapped individuals, set up temporary shelters.</p> <p>Preventing secondary disasters: Monitor and prevent potential tsunamis and aftershocks, timely evacuate residents from coastal and high-risk areas.</p> <p>Restore infrastructure: Promptly repair critical infrastructure such as transportation, communication, water supply, and electricity.</p> <p>Rebuild economy and community: Reconstruct damaged commercial and residential areas, restore normal life order, provide mental health support.</p>
Composition of rescue teams	<p>Search and Rescue Teams: Composed of professional rescue teams, military, police, and volunteers, equipped with heavy rescue equipment and medical emergency supplies.</p> <p>Medical Rescue Teams: Include doctors, nurses, and counselors, set up mobile medical stations for emergency treatment and psychological support.</p> <p>Tsunami Warning and Evacuation Teams: Responsible for monitoring potential tsunami risks, organizing emergency evacuations in coastal areas.</p> <p>Infrastructure Recovery Teams: Engineers and technicians in charge of assessing and repairing damaged infrastructure.</p>
Emergency action steps	<p>Preliminary Assessment: Use satellite imagery and field reports to assess the extent of the disaster, determine key areas for rescue.</p> <p>Search and Rescue Operations: Mobilize all available resources for search and rescue, prioritize rescuing trapped individuals in ports and coastal areas.</p> <p>Medical Assistance: Set up temporary medical centers in safe areas, provide emergency medical assistance to the injured.</p> <p>Tsunami Warning and Evacuation: Based on tsunami warning system information, promptly evacuate coastal residents to safe areas.</p>

Table 18: Detailed Information of P_6

Facet name	Facet value
	<p>Infrastructure Recovery: Assess and repair key infrastructure such as transportation, communication, water supply, and electricity.</p>
Resource allocation	<p>Personnel: Mobilize domestic and international rescue teams and medical teams, organize a large number of volunteers for rescue.</p>
	<p>Supplies: Mobilize rescue equipment, medical supplies, food, water, and temporary accommodation facilities.</p> <p>Transportation: Ensure smooth transportation of rescue vehicles and supplies, prioritize repairing roads leading to ports and coastal areas.</p>
Coordination and cooperation	<p>Cooperation Mechanism: Establish a close cooperation mechanism between government, military, civil organizations, and international aid agencies.</p> <p>Unified Command of Rescue Operations: Emergency management departments of the government to command and coordinate all parties' rescue efforts.</p>
Follow-up actions	<p>Continuous Assessment: Continue monitoring the situation in the disaster area, adjust rescue and recovery plans according to actual needs.</p> <p>Economic and Community Reconstruction: Rebuild port facilities and commercial areas, restore tourist attractions, provide mental health support, strengthen disaster prevention and mitigation capabilities in coastal areas.</p> <p>Social Support System: Establish a long-term social support system, including mental health services, economic assistance, and community reconstruction projects, to help affected residents return to normal life.</p> <p>Disaster Prevention and Mitigation Education: Strengthen disaster prevention and mitigation education, raise public awareness and capabilities in disaster response, especially in coastal and high earthquake-risk areas.</p> <p>Disaster Prevention and Mitigation Measures: Assess lessons from this earthquake, strengthen earthquake monitoring and early warning systems, improve building standards and urban planning to reduce the impact of future disasters.</p> <p>International Cooperation and Experience Sharing: Cooperate with the international community, share experiences and technologies in rescue and recovery, and improve global disaster response capabilities.</p>

3 Relief Plans Generated by LLM Based on Cases of Varying Quality

3.1 Rescue Plan Generated Based on No Case

Table 19: Rescue Plan Generated Based on No Case

Facet name	Facet value
Situation assessment	The impact of a comprehensive assessment of the earthquake, including the magnitude of the earthquake, the epicenter location, the scope of the disaster, casualties, building damage, etc.
Emergency rescue	Immediately launch rescue operations, including search and rescue of trapped people, treatment of the injured, evacuation of the affected people, to ensure the safety of life.
Material supply	Transport food, drinking water, medicine, tents and other urgently needed materials to the disaster areas to ensure the basic living needs of residents in the disaster areas.
Communication and information management	Restore the communication network in disaster areas, establish an information release system, and timely release rescue information and security warning to residents in disaster areas.
Postdisaster reconstruction	Formulate postdisaster reconstruction plans, repair damaged infrastructure, rebuild houses, restore order in production and life, and help residents in the disasterhit areas to resume normal life as soon as possible.
Psychological assistance	Provide psychological assistance services for the residents in the disaster areas, to help them cope with the psychological trauma caused by the disaster.
International cooperation	Seek international rescue and support, access to more assistance resources, and speed up the rescue and reconstruction process.

3.2 Rescue Plan Generated Based on Low-quality Cases

Table 20: Rescue Plan Generated Based on Low-quality Cases

Facet name	Facet value
Rescue objectives	Protect life: Prompt search and rescue operations to rescue trapped people, provide temporary shelter; ensure the safety of villagers and provide necessary medical assistance. Assessment and repair damaged buildings: Focus on the safety of farmhouses and public facilities.

Table 20: Rescue Plan Generated Based on Low-quality Cases

Facet name	Facet value
Composition of rescue teams	Restoration of agricultural activities: A rapid recovery of productive capacity in damaged farmland.
	Prevent secondary disasters: Monitor volcanic activity to prevent possible eruptions and ashes.
	Restore urban operation: Repair the damaged infrastructure as soon as possible to ensure residents' life and the normal operation of the city.
	Search and rescue teams: Rescue teams organized by villagers conduct preliminary search and rescue and safety assessment; search and rescue teams composed of professional rescue teams, military and volunteers carrying heavy rescue equipment.
	Medical rescue team: Composed of village health workers and nearby medical staff to provide basic medical services, including doctors, nurses and psychological counselors, and establish mobile medical stations to provide emergency treatment and psychological support.
Emergency action steps	Agricultural recovery team: Composed of agricultural instructors and experienced farmers in the village to guide the postdisaster agricultural recovery.
	Volcano monitoring and early warning team: Composed of geologists and volcanologists, responsible for monitoring volcanic activity and providing early warning information.
	Preliminary assessment: Use the village communication network to quickly assess the disaster situation and determine the damage situation; use satellite images and geological monitoring data to assess the disaster scope and determine the key rescue areas.
	Search and rescue action: Organize villagers for self-rescue and mutual rescue to ensure that no people are trapped; mobilize all available resources for search and rescue, and give priority to the rescue of trapped people in residential areas and tourist attractions.
	Medical assistance: Temporary rescue centers shall be set up in village clinics to provide treatment for villagers with minor injuries; temporary medical centers shall be set up in safe areas to provide emergency medical assistance for the injured.
	Agricultural recovery: Rapid repair of damaged farmland to ensure continued agricultural production.
	Volcanic monitoring and early warning: Strengthen the monitoring of volcanic activities, release early warning information in time, and guide evacuation plans.

Table 20: Rescue Plan Generated Based on Low-quality Cases

Facet name	Facet value
Resource allocation	<p>Personnel: Rely on the villagers and external rescue forces.</p> <p>Supplies: Allocate medical supplies, living supplies and supplies needed for agricultural recovery.</p> <p>Traffic: To ensure that the road is smooth.</p>
Coordination and cooperation	<p>Cooperation mechanism: Cooperation between village committees, government departments and rescue agencies.</p> <p>Unified command: Unified command and coordination by the village committee or government departments.</p>
Follow-up actions	<p>Continuous assessment: Adjust the plan according to the disaster changes.</p> <p>Community reconstruction and disaster prevention: Repair buildings and infrastructure, and strengthen disaster prevention capacity.</p>