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Disaster Diplomacy in Developed and Developing Countries:

Comparative perspectives on the 2004 Indian Ocean Tsunami and the 2011 Tōhoku Earthquake and Tsunami

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Abstract

This article examines the role of disaster diplomacy in developed and developing countries through a comparative analysis of two major natural disasters: the 2004 Indian Ocean tsunami and the 2011 Tōhoku earthquake and tsunami in Japan. Both events were among the most devastating natural disasters in modern history, causing massive human casualties, displacement, infrastructure destruction, and significant humanitarian crises. The 2004 Indian Ocean tsunami resulted in approximately 250,000 deaths and affected multiple countries, particularly Aceh in Indonesia and Sri Lanka, while the 2011 disaster in Japan caused extensive destruction and was further complicated by the Fukushima Daiichi Nuclear Power Plant accident.

The aim of this study is to analyse the relationship between natural disasters, humanitarian assistance, and diplomatic activity in different political and developmental contexts. The research applies a qualitative comparative case study approach based on secondary sources, including academic literature, reports of international organisations, and governmental data. Particular attention is devoted to the organisation of humanitarian aid, international cooperation, crisis management, and the influence of domestic political conditions on the effectiveness of relief efforts.

Findings indicate that, despite major differences in economic development and institutional capacity, both developing and highly developed countries faced significant challenges in responding to disasters of such magnitude. In Aceh, the tsunami contributed to political transformation and peacebuilding processes, whereas in Sri Lanka political tensions affected the distribution of humanitarian aid and diplomatic engagement. In Japan, although state institutions and infrastructure were highly advanced, the scale of the disaster and the nuclear crisis exposed vulnerabilities in national preparedness and crisis coordination.

In this article, the study demonstrates that natural disasters can significantly influence diplomatic relations, humanitarian and domestic political dynamics. Furthermore, it highlights the importance of international assistance, strategic coordination and disaster preparedness in mitigating the consequences of large-scale catastrophes. The article contributes to the broader discussion on disaster diplomacy by comparing how developed and developing countries

respond to extreme natural disasters as well as how such events shape international and domestic political processes.

Keywords

tsunami 2011, Japan, humanitarian aid, disaster management, disaster preparedness, tsunami 2004, humanitarian aid, disaster diplomacy, Aceh, Sri Lanka

Introduction to Indian Ocean Tsunami 2004

Tsunamis are among the most destructive natural disasters, usually caused by undersea earthquakes or volcanic eruptions. This creates huge waves travelling at breakneck speed, which grow in height as they approach land. Some of them can travel across the ocean at the speed of a jet plane. Tsunami waves are often referred to as tidal waves, but experts point out that this is a mistaken association between these two different phenomena (National Oceanic and Atmospheric Administration, n.d.). On 26 December 2004, one of the most devastating natural disasters occurred. A tsunami was caused by an earthquake beneath the surface of the Indian Ocean. The earthquake occurred at the boundary between the Indo-Australian and Eurasian tectonic plates, where the Indo-Australian plate is sliding beneath the Sunda plate. This process, known as subduction, involves the gradual build-up of stress, which is eventually suddenly released, causing a powerful earthquake. In 2004, the movement of the seabed lifted and displaced huge amounts of water, causing a tsunami (U.S. Geological Survey, 2018). The strength of the earthquake itself varied between 9.1 and 9.3 on the Richter scale, depending on the report. It was the largest and longest earthquake in the last 40 years, resulting, among other things, in the ocean floor rising by at least three metres. This natural disaster resulted in the deaths of 250,000 people, the displacement of over 2 million people, and enormous damage to the environment. Among those who died in this disaster, in addition to residents of 10 countries in Southeast Asia and five countries in East Africa, there were also many citizens of other countries, including many tourists who were vacationing near the coast of Sumatra at the time. (World Health Organization, 2013).

The key issue seems to be the lack of awareness and knowledge about tsunamis among the society at that time, mainly due to the rarity of this natural disaster. Currently, countries and their citizens are much more aware and prepared for the arrival of a tsunami than they were during the 2004 event. Another problem, apart from insufficient knowledge about this natural disaster, is the warning systems, including tsunami sensors. At that time, there were none in the Indian Ocean, only devices for measuring water levels, known as water gauges, which transmitted data via satellite in real time. One such device was located near the Australian island of Cocos and three in the Maldives. Importantly, all of them were located more than 1,700 kilometres from the epicentre of the earthquake. The Indian Ocean was also not equipped with any warning centres

for such situations, unlike the Pacific Ocean, where tsunamis occurred much more frequently. For this reason, the data reaching the warning centre, located far from the epicentre and the Indian Ocean, was difficult to analyse in such a short time due to the lack of sufficient data, making it difficult to determine the scale of the event (World Health Organization, 2013). The tsunami and earthquake had a huge impact on the state of the cadastre, while the lack of preparation and awareness among the population, as well as gaps in monitoring equipment, definitely contributed to a higher number of deaths than if evacuation and warning measures had been in place. This shows how important the human factor is during natural disasters, where the effects of the tsunami could have been mitigated.

Introduction to Tōhoku Earthquake and Tsunami 2011

The forces of nature have always been, and will continue to be, a huge threat to humanity. Some can be controlled to a greater or smaller extent or rather monitored and responded to at the right moment. A tsunami is a powerful force that has demonstrated its capabilities or rather, the consequences of its arrival on more than one occasion. The scale of the problem can be reduced, not necessarily neutralised, but certainly mitigated depending on human preparedness and knowledge at the time of its arrival. An important aspect of assessing the impact of a tsunami is the specific geographical context, namely the location, the country and its internal conditions, political, economic and social. The situation in the Indian Ocean in 2004 highlights the catastrophic problems associated with a tsunami, however, it is worth comparing it with another location, one with a completely different structure and resources. One of the key aspects of disaster diplomacy is not only the nature of the disaster itself, but also the internal situation of the state, its economic development, and its preparedness for a natural strike. In this case, the earthquake and tsunami in Japan in 2011 is an example of a country in which high economic development as well as preparatory infrastructure for the arrival of a disaster shows how important these factors are, yet they do not always seem to be sufficient. In the March 11 disaster, 15,729 people died as a result of 9.0 magnitude earthquake and the subsequent tsunami, which not only claimed thousands of lives but also affected nuclear infrastructure. Despite the enormous potential and preparedness for similar critical situations, stemming from previous

experiences as well as Japan's geographical location, it did not guarantee sufficient safety. Humanitarian and diplomatic aid, despite its vast scope and international impact, also encountered many problematic factors that influenced the development and resolution of issues after this disaster. All conclusions drawn from this event show that a high level of a country's development and proper preparedness is not always sufficient in the face of natural disasters.

Case study: Indian Ocean tsunami 2004

1.1 Humanitarian and Diplomatic Responses

Humanitarian and diplomatic efforts were an important part of the immediate response to the tsunami. Many people, including tourists, lost their lives in the disaster, and the economies of the affected countries suffered severe losses. Millions of people lost their homes, businesses and livelihoods, and key infrastructures such as schools, hospitals and transport networks were completely destroyed or damaged. Immediately after the waves receded, the rescue of victims or those who remained in danger began. This was mainly done by people who had been involved in the disaster. Most of the rescue operations carried out shortly after the tsunami were provided by the local community, with the support of national communities or institutions. However, the assistance provided by those at the epicentre of the tragedy, where no outside help could reach so quickly, is invaluable. The dominant presence of international agencies sometimes marginalised local capacities, as many agencies focused on rapid disbursement and control of resources rather than fully supporting national and local efforts. Supporting local and national ownership remains a fundamental principle of humanitarian assistance. The most important issue for communities' access to reliable information for communities affected by the 2004 tsunami was access to verified and reliable information, as this enabled them to plan reconstruction and hold aid organisations accountable. However, many international agencies failed to provide accurate and timely information to residents, which led to frustration and limited the ability to carry out local reconstruction projects. Aid was often delivered without coordination and without taking into account the needs of the community, housing programmes and livelihoods were sometimes

inadequate. The reconstruction process is specific to the local context and should be led by the communities affected by the disaster, but in practice, the dominance of international agencies hindered the full involvement of local structures. This often reinforced the position of the better-off, marginalising the poorest and women (Telford & Cosgrave, 2006, pp. 42–64).

The funding for aid after the 2004 tsunami was the largest and fastest humanitarian response in history. The total amount reached USD 13.5 billion for rescue and reconstruction, including over USD 5.5 billion from the public in developed countries. However, the sheer scale of the funds available also had negative effects. The excess of funds exceeded the absorption capacity of humanitarian organisations, leading to the involvement of inexperienced actors and activities outside the normal remit of existing organisations. Funding often did not correspond to actual needs, and decisions on the allocation of funds were sometimes motivated by politics or donor preferences. Lack of coordination, poor monitoring of fund flows and a variety of reporting formats made it difficult to track and control expenditure. Information about funds rarely reached local communities in their own languages, limiting their participation in reconstruction planning. Despite record donations, average financial support amounted to 7,100 USD per person affected by the disaster, while in other crises, such as the floods in Bangladesh in the same year, it was only 3 USD. The excess of funds often discouraged accurate needs assessment, coordination of efforts, and use of joint analysis results, hindering effective recovery (Telford & Cosgrave, 2006, pp. 80-86). It is also worth noting that following the 2004 tsunami, the United States helped establish the so-called ‘Core Group’, comprising the US, India, Japan and Australia. As Secretary of State Colin Powell pointed out, this initiative was aimed at coordinating the initial phase of humanitarian aid. These countries held high-level consultations to organise a joint response to the disaster, which serves as an example of practical crisis diplomacy (U.S. Department of State, 2004).

1.2 Aceh, Indonesia

To understand the enormous scale of the disaster and the subsequent humanitarian and diplomatic aid, it is worth looking at the case of the Aceh coast. The series of waves that struck the area reached heights of up to 30 metres, destroying 2,500 villages along an 800-kilometre

stretch of coastline. Initial estimates of the death toll following the tsunami in this area stood at 234,000, whilst subsequent studies put the figure at 167,000 according to the Badan Rehabilitasi dan Rekonstruksi (BRR), the agency responsible for coordinating Aceh's reconstruction. It is also worth noting that many people lost their homes, approximately 500,000 people. The 2004 disaster was not the first tragedy to strike Aceh. According to the database of the Centre for Research on the Epidemiology of Disasters (2006), nine other disasters were recorded between 1907 and 2002. Each of these resulted in the deaths of at least ten people, affected a minimum of 100 people, led to the declaration of a state of emergency, or required international assistance. Nevertheless, the impact of the 2004 tsunami far exceeded that of previous events, partly due to the intensification of the armed conflict after 2003 and its long-term impact on the local population. This conflict has deep roots, dating back to before Indonesia gained independence in 1949. The separatist movement, led by Gerakan Aceh Merdeka (GAM), was founded in 1976 due to dissatisfaction with the policies of the government in Jakarta and the region's lack of economic development. Since then, the conflict has intensified, and between 1989 and 1998, the Indonesian army conducted intensive military operations, accompanied by numerous human rights violations, such as violence, torture and kidnappings. In 1998, following the fall of President Suharto, attempts were made to resolve the conflict peacefully, but these did not bring lasting results. In 2003, a state of emergency was declared, and military operations were intensified once again, leading to an escalation of violence and a deterioration in living conditions for the population just before the 2004 tsunami. This conflict exacerbated the effects of the tsunami, as it led to the displacement of people towards the coast, poverty, limited access to resources and violence. The disaster affected both sides, but the Indonesian army (TNI) suffered particularly badly, losing around 2,700 soldiers, which significantly weakened its response capacity and forced the redeployment of troops from other regions. GAM fighters, hiding in the mountains, suffered fewer casualties and quickly came to the aid of local communities, although many prisoners in the flooded detention centres died. Soon, the response to the disaster took on an unprecedented, international character (Gaillard et al., 2008, pp. 515–517).

It took the Indonesian government three days after the tsunami to request international assistance, as Aceh had previously been closed off and controlled by the military. Prior to the disaster, only two international non-governmental organisations were operating in the region,

employing local staff. Within a few weeks of the government's appeal, over 500 humanitarian organisations, aid agencies and foreign military forces arrived in Aceh to carry out rescue operations, provide medical aid, distribute food and rebuild infrastructure. The government restricted their activities outside the main cities, citing the threat posed by GAM, but most organisations operated in a 'conflict-neutral' manner, providing support to both civilians and members of the warring parties. The humanitarian crisis created an opportunity for peace negotiations, as the scale of the needs and international cooperation reduced violence to almost zero. Numerous studies and field reports indicate that aid was provided regardless of the victims' political affiliation, although there were instances of discrimination where support was channelled through military structures. Peace negotiations in Aceh had been ongoing since 2004, with the support of mediators from the EU and ASEAN countries, as well as leaders from Indonesia and GAM. Finally, in August 2005, an MOU was signed in Helsinki, providing for the demilitarisation of Aceh and its political integration into the Republic of Indonesia. The tsunami accelerated the peace process, but the earlier talks, the personal commitment of the leaders and international support were crucial. The political integration of Aceh following the signing of the MOU proved difficult. GAM renounced its claims to independence in exchange for greater provincial autonomy and a larger share of revenues from local resources, which were to be enshrined in the Aceh Governance Law. The law was not passed until 11 July 2006, much later than anticipated, and did not meet all the expectations of GAM or local NGOs. Disputes arose concerning, among other things, the curtailment of Aceh's sovereignty and the prosecution of human rights violations. Delays in the legislation postponed the local elections until December 2006. The victory of I. Yusuf and M. Nazar confirmed the will of the people, despite divisions among GAM leaders. The organisation had to transform its structure from a military to a political one, competing with new local parties and facing hostile militias supported by the army and influential businessmen from Jakarta. The process showed that, although the tsunami had accelerated the negotiations, lasting peace depended on political, social and economic factors and the effective implementation of the law, and not only on the disaster itself (Gaillard et al., 2008, pp. 515–521).

The case of the Aceh region following the tsunami of 26 December 2004 shows that disaster diplomacy operates in a similar way both between and within states; namely, it can accelerate peace processes in the short term, but in the longer term, political, social and economic factors

are decisive. The tsunami acted as a catalyst, facilitating international aid and supporting negotiations, whilst local networks of contacts bolstered the peace process. However, unresolved political and economic problems, as well as other disasters in Indonesia, undermined the long-term effects of diplomacy. Disaster diplomacy helps to understand the links between disaster and negotiations but does not guarantee lasting peace. In Aceh, prior negotiations, the involvement of leaders and the effective implementation of the law were crucial. The long-term effects depended on Aceh's openness to international scrutiny and the cooperation of all parties (Gaillard et al., 2008, pp. 523–524).

1.3 Sri Lanka

Looking at the case of Aceh province, we can see the impact the tsunami had not only in terms of the tragedy itself, the loss of life, and other damage, but also in social and political terms. It is worth taking a broader view of the issue, highlighting another aspect of the same disaster. Sri Lanka faced a completely different situation when this natural disaster struck.

Sri Lanka was one of the hardest-hit countries in the region. The tsunami claimed the lives of over 31,000 people, with around 4,000 reported missing and nearly half a million displaced. The disaster destroyed coastal infrastructure, homes, roads and livelihoods, particularly in the fishing sector. This destruction caused a massive humanitarian crisis and, in the short term, necessitated massive international aid (Nishikiori et al., 2006, p. 73). It is also important to highlight the nature of the decades-long conflict between the Sri Lankan government and the Liberation Tigers of Tamil Eelam - a guerrilla organisation whose aim was to establish an independent Tamil state, Eelam, in the north and east of Sri Lanka (Encyclopaedia Britannica, n.d.). Initially, the disaster presented an opportunity for cooperation, as the government invited the LTTE to participate in joint relief efforts, and LTTE leaders offered their condolences to the Sinhalese and Muslim communities. However, humanitarian cooperation soon gave way to political rivalry as the parties to the conflict and other actors used aid to gain political legitimacy. An attempt to establish a joint reconstruction management mechanism (P-TOMS) met with political resistance and was suspended by the Supreme Court, squandering the tsunami's potential as a catalyst for peace. The peace process following the 2001 elections, which had previously led to a ceasefire,

revealed similar problems where elite negotiations and the linking of peace with humanitarian aid and development proved difficult to implement in practice. The LTTE demanded autonomy and a say in reconstruction, the Sinhalese opposition feared steps towards secession, and the neoliberal development model imposed by the government and donors exacerbated social inequalities. As a result, although the disaster and reconstruction could have provided an impetus for peace, the process stalled, and political conflicts continued to hamper cooperation (Stokke et al., 2009, pp. 132-136). Sri Lanka's political system was highly centralised and majoritarian, and the government relied on a fragile coalition, which limited the scope for implementing significant reforms. In areas controlled by the LTTE, authoritarian rule prevailed, with no mechanisms for democratic representation, which further hindered broad public participation in the peace process. Humanitarian aid and reconstruction, although important for the normalisation of daily life, were not effectively linked to institutional reforms, and priority was given to technocratic control and a neoliberal development model, which exacerbated social inequalities. As a consequence, the peace process in Sri Lanka was characterised by a prioritisation of development over politics; consequently, reconstruction served as a means for political negotiations but did not lead to lasting institutional changes or genuine democratisation (Stokke et al., 2009, pp. 136-142).

1.4 Cross-Case Analysis: Aceh and Sri Lanka

If we compare the two regions, we can see a fundamental difference in the effectiveness of political change in both regions following the disaster. In Sri Lanka, the LTTE did not experience a significant political transformation, despite the fact that the ceasefire allowed for partial power-sharing with the government, the peace process was limited, and the nature and militant approach of the LTTE hindered the development of a political movement oriented towards democracy. In Aceh, by contrast, in the context of the transition from authoritarianism and war to peace and liberal democracy, the GAM transformed itself into a reform movement emphasising democracy and human rights. These differences stem both from the nature of the armed movements themselves, their objectives, means and organisational structures, as well as the available political spaces and the leaders' ability to utilise them. In Sri Lanka, reconstruction and

humanitarian aid were used as a substitute for political conflict resolution, which limited genuine democratisation, whilst in Aceh the peace process was able to draw on the democratic mechanisms of the Indonesian state, enabling broader political transformation and prospects for democratisation based on civil rights. In Aceh, the peace process fostered a genuine transformation of the rebel movement and democratisation, whereas in Sri Lanka changes were limited, and the peace process and reconstruction did not lead to lasting democratisation (Stokke et al., 2009, pp. 146-147).

1.5. Global Impact of the 2004 Indian Ocean Tsunami

During major natural disasters, media coverage can strongly influence how events are understood around the world. The 2004 Indian Ocean tsunami is a clear example, as Western media did not always present the situation accurately or equally. Considerable attention was given to Western tourists and victims, despite their small share of the total number of deaths, while Sumatra, the most severely affected area, received less attention than Thailand and Sri Lanka. Non-Western survivors were often portrayed as helpless victims, whereas Westerners appeared as brave rescuers. This reinforced existing stereotypes and overlooked the resilience of local communities. For example, Indonesian media highlighted the courage and solidarity of the people of Aceh, while BBC coverage rarely emphasised their ability to act independently. As a result, Western media encouraged sympathy and donations but also reinforced the perception of non-Western societies as dependent on Western assistance (Bradley, 2023, pp. 112-113).

However, the consequences of the 2004 tsunami extended beyond its media coverage. The disaster changed approaches to tsunami risk and preparedness and challenged previous assumptions about the scale of earthquakes in subduction zones. It also highlighted the importance of warning systems, evacuation plans and public awareness. The 2011 tsunami in Japan demonstrated that effective preparedness can significantly reduce the number of casualties, even during extremely powerful disasters. The experience of 2004 also encouraged greater international cooperation in disaster risk reduction, including the development of early warning systems and vulnerability assessments. However, technology alone is not enough; local communities must also be prepared and able to respond effectively. Overall, the 2004 tsunami

had a lasting influence on international disaster preparedness and contributed to a broader understanding of how societies can reduce the impact of extreme natural events (Løvholt et al., 2014, pp. 16-17).

The 2004 tsunami also had political consequences, which varied depending on the situation in each country. In Aceh, the disaster created conditions conducive to negotiations between the Indonesian government and the GAM movement and contributed to the launch of the peace process. The presence of international humanitarian organisations and the influx of foreign aid further created an environment conducive to cooperation and negotiations. In Sri Lanka, however, the political consequences were different, as the tsunami exacerbated existing political and ethnic tensions, and undermined the peace process. These examples show that the consequences of a natural disaster depend not only on its scale, but also on the political context in which it occurs (Le Billon & Waizenegger, 2007, pp. 422-423).

Ultimately, the 2004 tsunami had global significance, influencing perceptions of disasters, the development of early-warning systems, international cooperation, and the political situation in the affected countries. This demonstrates that the effects of natural disasters can extend far beyond their immediate consequences.

Case study: The 2011 Tōhoku Earthquake and Tsunami

2.1 An Overview of the 2011 Japan Disaster

On 11 March 2011, a magnitude 9.0 earthquake struck north-eastern Japan, with its epicentre located near the axis of the Japan Trench. The tsunami was a two-stage event, in which the sea level first rose gradually by around 2 m, followed by a sudden wave 3–5 m high. The greatest tectonic plate displacements, exceeding 40 m, occurred along the trench axis; in the southern Sanriku-oki and Miyagi-oki regions, the displacements were 30 m and 17 m respectively, which caused the flooding of the Sendai Plain. In the Fukushima-oki region, the displacement was 10 m, and in Ibaraki-oki less than 3 m. The scale and intensity of this event were significantly

greater than in the case of earlier historical earthquakes, such as the Sanriku in 1896 or 869 Jogan earthquakes, demonstrating what a serious challenge it is to prepare for and coordinate rescue operations even in a highly developed country. This disaster resulted in the deaths of 15,729 people and left 4,539 missing in the regions of Hokkaido, Tohoku, and Kanto. It is important to note that the Pacific coast of the Tohoku region had already experienced major tsunamis in the past. The Sanriku earthquakes of 1896 and 1933 generated waves up to 38 m and 29 m high respectively, causing tens of thousands of casualties, although the wave height was significantly lower on the Sendai Plain. The Jogan earthquake of 869 caused flooding over several kilometres, resulting from an inter-plate earthquake (Fujii et al., 2011, p. 815). In response to recurring threats in the Sanriku region, advanced tsunami countermeasures were introduced, combining coastal defences with non-structural measures such as rapid evacuation. Nevertheless, these defences proved insufficient against mega-tsunamis on the scale of the 2011 disaster. In order to understand the course of the tsunami and the scale of the damage in Tohoku in 2011, extensive field surveys were conducted. Scientific data on the tsunami had previously been limited because tide gauge stations, sea floor pressure sensors and GPS buoys covered only a small part of the coastline. Therefore, rapid and coordinated post-disaster research was essential to supplement information on wave behaviour in the coastal zone and on land. This research required the collaboration of numerous teams from different institutions, disciplines and countries. As part of the Tohoku Tsunami Joint Survey Group, over 300 scientists and engineers carried out run-up measurements and documented inundation levels across the region. This data was made available online in real time, supporting scientific research as well as rescue operations, reconstruction and coastal protection planning. Analysis of the collected data showed that maximum tsunami run-ups reached almost 40 m above sea level, covering over 500 km of coastline. The 2011 tsunami exhibited two characteristic types of impact, one was locally high waves in the Sanriku region, and the other was extensive inundation of a large area with a wide source zone, resembling the tsunami of 869. The recurrence interval for such events is estimated at approximately 100 years for the Sanriku type and 1,000 years for the Jogan type, which highlights the uniqueness of the Tohoku tsunami in terms of both scale and rarity (Sato, 2015, pp. 262-272).

Significantly, two days before the main quake, on 9 March, a strong foreshock with a magnitude of 7.5 occurred, triggering a small tsunami with waves reaching a height of up to 0.6 m.

Following the main earthquake, numerous aftershocks occurred, including one on 7 April which caused fatalities, injuries, and a small tsunami, as well as one on 11 April which led to further deaths. The National Geophysical Data Centre has compiled data illustrating the immense scale of the event. By 3 October 2011, thousands of eyewitness accounts and hundreds of measurements from tide gauges and DART (Deep-ocean Assessment and Reporting of Tsunamis) is a deep-ocean tsunami monitoring system consisting of a bottom pressure recorder (BPR) and a surface buoy, which enables the detection of tsunami waves and the transmission of data in real time (National Data Buoy Center, n.d.) In Japan, the tsunami was recorded at over 60 measuring points, with wave heights exceeding 9 metres in some locations. The waves spread across the entire Pacific Ocean and were recorded in around 30 countries, as well as in Antarctica and along the coasts of the Americas. In places thousands of kilometres away from Japan, wave heights reached over 2 metres. This phenomenon highlights the global nature of the disaster and the immense reach of one of the strongest earthquakes in recorded history (Dunbar et al., 2011, pp. 310-314).

2.2 Nuclear Consequences of the 2011 Tsunami

The earthquake and subsequent tsunami were not the only major problems Japan faced on March 11, 2011. Concerns arose about potential damage at four nuclear power plants on Japan's northeastern coast. Fukushima Daiichi and Fukushima Daini, owned by the Tokyo Electric Power Company; Onagawa, owned by the Tohoku Electric Power Company; and Tokai, owned by the Japan Atomic Power Company (International Atomic Energy Agency, 2011, p. 1). The reactors at the Fukushima Daiichi Nuclear Power Plant were designed to shut down in the event of any malfunction. This is exactly what happened following the earthquake on March 11, unfortunately, about 50 minutes later, a tsunami flooded the plant, causing a loss of cooling and power. Within three days, the cores of Units 1-3 overheated and partially melted, and chemical reactions produced hydrogen, which led to explosions and structural damage to some of the units. The accident was classified as Level 7 on the International Nuclear Event Scale. It is a fact that analyses showed that radiation had no direct impact on human health, however, evacuation, limited access to medical care, stress, and other factors affected the lives and well-being of over

150,000 people and disrupted the daily lives of residents and businesses. The consequences of this event prompted the Japanese authorities to take measures to address them, as well as to undertake the economic and social reconstruction of the regions affected by the earthquake, tsunami, and nuclear accident. The international community also became involved, offering assistance and sharing expertise to improve nuclear safety. In response to the accident, the Japanese government reformed the nuclear regulatory system and established an independent Nuclear Regulation Authority, which introduced new safety requirements and amended laws regarding emergency preparedness and liability for damages (Organisation for Economic Co-operation and Development, 2021, pp. 11-13). In response to the accident at the Fukushima Daiichi Nuclear Power Plant following the earthquake and tsunami in March 2011, The Nippon Foundation organised an international symposium of experts in the field of radiation and health. More than 40 specialists from institutions such as the IAEA, WHO, and ICRP discussed the health effects of radioactive fallout, the need for monitoring the situation, and methods for protecting residents of contaminated areas. The symposium concluded with the development of a consensus in the form of eight-point recommendations, emphasising the importance of continued monitoring and cooperation among all stakeholders (The Nippon Foundation, 2011). Nevertheless, the events that followed the earthquake and tsunami caused the most serious nuclear emergency since Chernobyl (Dunbar et al., 2011, p. 317).

2.3 Government, Humanitarian and Diplomatic Responses

Following the Great East Japan Earthquake on March 11, 2011, the Japanese government took immediate legislative and financial measures and established the Reconstruction Agency in 2012. The reconstruction period was set at 10 years, with the first five years allocated a budget of approximately $250 billion and the following five years a budget of approximately $65 billion. Most of the infrastructure in the disaster-affected regions has been rebuilt, and the reconstruction of housing is largely complete. The number of evacuees has fallen from approximately 470,000 to 30,000. The Agency also supports industrial reconstruction, the restoration of residents' livelihoods, and health and social initiatives. The government conducts systematic radiation monitoring and ensures food safety by testing for radioactive materials according to some of the

strictest standards in the world. Since 2015, all batches of rice produced in Fukushima have met safety standards, as have seafood products approved for sale (Reconstruction Agency, n.d.). Japan viewed the reconstruction following the Great East Japan Earthquake as a process open to international cooperation, as defined in the government's "Basic Policy on Reconstruction following the Great East Japan Earthquake" of July 2011. The plans of the government included, among other things, countering harmful rumours about Japan, attracting foreign investment, supporting the participation of foreigners in the reconstruction, promoting products from the disaster-affected regions, and sharing experiences and knowledge with other countries, which was intended to strengthen the bonds of friendship, the so-called kizuna-with the international community (Ministry of Foreign Affairs of Japan, 2012, section H1-03).

Humanitarian aid during a natural disaster is one of the most critical issues that must be addressed quickly. In the aftermath of the 2011 disaster, the International Medical Corps arrived at the crisis site within 24 hours. The emergency response team provided assistance in the first days and weeks following the tragedy. Subsequently, working with local partners, they supported the reconstruction and provided aid to communities and families affected by the disaster. This assistance went beyond saving lives to include meeting basic needs, ranging from hot meals to psychological support. Financial support provided by the organisation was also a key aspect of the Fukushima Japanese NGO Cooperation Center, which facilitated information exchange, cooperation, and coordination of activities between local and international aid organizations. Local partnerships and collaboration with authorities and communities enabled the International Medical Corps to respond effectively to subsequent earthquakes as well, such as the one in Kumamoto in 2016 (International Medical Corps, n.d.).

In the wake of the disaster, the Japan Earthquake Local NPO Support Fund was established at the initiative of the Japan Nonprofit Organization Center to support local NGOs in their reconstruction and humanitarian aid efforts. The fund was intended to strengthen NPOs to ensure the continuity of their operations, and its funding came from both companies and corporate-NGO partnerships as well as private individuals. Initiatives such as the Nissan Smile Support Fund also emerged, focusing on children affected by the disaster by offering them opportunities for play as well as educational and recreational trips. The fund was later incorporated into Nissan Motor Company's CSR activities. At the national level, the Japan Civic Network - a coalition of

NPOs, NGOs, companies, and volunteers-coordinated support for evacuees and collaborated with authorities to ensure the exchange of information and the effective organisation of relief efforts in the disaster-affected areas (Japan NPO Center, n.d.). Another example of charitable activity can be found in organizations such as Caritas. In this case, Caritas Poland organized a fundraiser for those affected by the disaster. The campaign began on March 12 and included bank transfers marked “JAPAN”, SMS donations, and collections in churches throughout Poland. Additionally, a “Solidarity Concert, Tokyo-Warsaw” was organised, along with a fundraising campaign at the Wileńska Shopping Center in Warsaw, resulting in a total of over 3 million PLN raised. The funds were transferred directly to Caritas Japan, and the director of Caritas Poland assured that their distribution would be monitored and reported (Catholic Information Agency, 2011).

2.4 State Preparedness versus Crisis Response

Japan is an example of a developed nation and one of the best-prepared countries in terms of seismic and tsunami risks. To mitigate the effects of such disasters, measures such as breakwaters and coastal embankments have been constructed, evacuation procedures have been drawn up, and warning systems based on loudspeakers and radio broadcasts have been implemented. The painful experiences of 2011 show that these measures made a real difference, for example in the city of Kamaishi, where around 3,000 schoolchildren were successfully evacuated. Nevertheless, the scale of the disaster revealed their limited effectiveness in the face of extreme events. The earthquake of 11 March 2011 was the strongest in Japan’s history and the fourth largest in the world. The resulting tsunami caused record-breaking inundation levels and the highest recorded readings in monitoring systems such as DART and tide gauges. It was also the first event in which an earthquake and tsunami led to a serious nuclear power plant accident. Although the greatest damage occurred in Japan, the effects of the tsunami were also felt beyond its borders, with isolated fatalities reported in places such as Indonesia and the United States. This makes it the first Japanese tsunami to have caused deaths at a considerable distance from the source (Dunbar et al., 2011, pp. 306-307).

Nevertheless, despite the high level of preparedness and well-developed emergency response procedures of Japan, the natural disaster exposed its weaknesses, for example in the area of accepting foreign humanitarian aid. Highly developed regulations and procedures concerning health, safety, and public order slowed down the accreditation of foreign rescue teams and the acceptance of aid supplies, which required them to be self-sufficient in terms of water, food, fuel, and shelter. It was also necessary to apply national norms and standards regarding aid equipment and tools, including transport and logistics facilities, in a flexible manner. In practice, this included, amongst other things, temporary work permits for foreign doctors and nurses, the simplification of veterinary procedures for rescue dogs based on an assessment of the risk of epidemics, the flexible recognition of foreign driving licences, and the reduction of customs formalities relating to the transport of relief supplies. Furthermore, to ensure the smooth conduct of rescue operations, the use of temporary immunities or limited legal liability for foreign rescue workers was considered, as was the provision of consular assistance in crisis situations. The case of Japan demonstrates that effective crisis diplomacy where encompassing rapid agreements between states, international organisations, and domestic institutions is crucial for enabling efficient and swift responses to natural disasters, while simultaneously ensuring safety and compliance with the regulations of the receiving state (Kodama, 2021, pp. 19–20).

2.5. Global Consequences and the Nuclear Crisis

The tsunami that struck Japan in 2011 had consequences that extended beyond the region directly affected. The disaster highlighted the importance of international cooperation in the field of hazard monitoring and early warning. One example is the CTBTO network, whose main task is to detect nuclear tests, but which can also record earthquakes and other events that may lead to the formation of a tsunami. Following the 2004 disaster, the CTBTO began cooperating with UNESCO on the use of data for early warning systems. During the 2011 earthquake in Japan, data from this network contributed to the rapid issuance of warnings for Japan and other countries in the Pacific region. This demonstrates that the development of monitoring technologies and the exchange of information between countries and international organisations

have become a key element in mitigating the effects of tsunamis (Comprehensive Nuclear-Test-Ban Treaty Organization, n.d.).

The Fukushima accident also had an impact on international cooperation in the field of nuclear safety. In response to this disaster, the International Atomic Energy Agency (IAEA) established a knowledge-sharing platform to collate the lessons learnt and insights gained from the accident at the Fukushima Daiichi power station. This platform makes this information available to member states and international organisations, enabling the lessons learnt from the disaster to contribute to wider efforts to strengthen nuclear safety (International Atomic Energy Agency, n.d.). The consequences of the Fukushima disaster were also felt beyond Japan, particularly in energy policy and nuclear safety regulations. Many countries carried out detailed inspections of their power stations, and the European Union required formal safety tests to be conducted on all reactors in its Member States. However, the responses of individual countries varied. Germany and Belgium accelerated their phase-out of nuclear power, whilst other countries decided to continue or even expand their nuclear programmes. This shows that Fukushima influenced the global debate on nuclear energy, although its long-term impact on energy policy also depended on the economic, environmental and political circumstances of individual countries (OECD, 2017, pp. 59-60).

In conclusion, the 2011 tsunami and the Fukushima Daiichi accident had a significant impact beyond the immediate area of the disaster. They highlighted the importance of international cooperation in tsunami monitoring, early warning and nuclear safety, while also encouraging the exchange of knowledge and experience between countries. Fukushima also influenced nuclear energy policies around the world, although individual countries responded differently depending on their own political and economic circumstances. Overall, these events showed that the effects of a major natural disaster can reach far beyond physical destruction, influencing international cooperation, safety policies and approaches to future risks.

Discussion

The comparative analysis of the 2004 Indian Ocean tsunami and the 2011 Tōhoku earthquake and tsunami demonstrates that natural disasters affect both developed and developing countries

regardless of their level of economic and institutional advancement. However, the political context, state capacity, and preparedness significantly influence the effectiveness of humanitarian response and the broader diplomatic consequences of such events.

In both cases, the sudden onset and immense scale of the disasters exposed limitations in preparedness and crisis management systems. During the 2004 Indian Ocean tsunami, both local populations and tourists were severely affected by the lack of tsunami awareness, insufficient early warning mechanisms, and limited disaster detection systems. Although humanitarian aid and international diplomatic support were mobilised rapidly, serious challenges related to aid distribution and coordination emerged. In Aceh and Sri Lanka, pre-existing political conditions strongly shaped the effectiveness of relief efforts. In Aceh, the disaster contributed to political transformation and accelerated peace negotiations, demonstrating the potential of disaster diplomacy to facilitate political dialogue and cooperation. In contrast, in Sri Lanka ongoing political tensions and internal divisions constrained the equitable distribution of aid and reduced the effectiveness of diplomatic engagement.

The Japanese case presents a different perspective on disaster diplomacy in a highly developed country. Despite the unprecedented scale of destruction caused by the earthquake, tsunami, and Fukushima Daiichi nuclear disaster, Japan’s advanced infrastructure, disaster preparedness systems, and institutional capacity significantly reduced dependence on external assistance. International humanitarian and technical support played an important but complementary role rather than becoming essential to the functioning of the state. Cooperation related to nuclear safety and crisis management highlighted the importance of international expertise and transnational coordination in responding to complex technological and environmental crises.

A comparison of these cases suggests that the impact of disaster diplomacy is strongly conditioned by the domestic political environment and the level of state development. In developing regions, disasters may create opportunities for political transformation, peacebuilding, and increased international engagement. In highly developed countries, disaster diplomacy tends to focus more on technical cooperation and short-term humanitarian coordination rather than producing lasting political change. In both cases, however, the effects of disaster diplomacy appear to be largely temporary and pragmatic.

Conclusion

The comparative analysis of the 2004 Indian Ocean tsunami and the 2011 Tōhoku earthquake and tsunami demonstrates that natural disasters can significantly influence humanitarian cooperation, crisis management, and diplomatic relations, regardless of a country's level of development. At the same time, the cases show that the scale and long-term impact of disaster diplomacy depend heavily on domestic political conditions, institutional capacity, and the broader international context.

A review of these cases suggests that disaster diplomacy most often leads to practical, short-term forms of cooperation rather than lasting changes in international relations. Although natural disasters may temporarily strengthen diplomatic engagement and humanitarian solidarity, their long-term political consequences remain dependent on existing institutional structures and the political will for sustained cooperation.

The global impact of both disasters also extended beyond their immediate humanitarian consequences. The 2004 Indian Ocean tsunami contributed to the development of international tsunami warning systems and strengthened cooperation in disaster risk reduction. The 2011 Tōhoku disaster, particularly the Fukushima accident, further highlighted the importance of international cooperation in tsunami monitoring, nuclear safety, and the exchange of knowledge and experience. It also influenced nuclear energy policies in several countries, although the scale of these changes varied according to national circumstances. Together, these cases demonstrate that major natural disasters can have long-term effects on international safety policies, preparedness, and cooperation, extending well beyond the initial crisis.

In summary, this study highlights the importance of comprehensive disaster preparedness, effective governance, and strategic coordination between domestic and international actors. At the same time, a comparison of the impacts of the tsunamis in Japan and the Indian Ocean showed that the level of public preparedness can significantly affect the number of casualties, even in the case of disasters of similar magnitude. It also demonstrates that the relationship between natural disasters and diplomacy is complex, shaped not only by the scale of the disaster itself but also by the political, social, and institutional contexts in which such disasters occur.

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