Exploring Sustainability in State Governance during Crises: A Case Study of Japan and New Zealand

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Abstract

The purpose of this study was to analyse effective practices of sustainable public governance in crisis management, with a particular focus on Japan and New Zealand. The study was based on public administration in Japan and New Zealand. For the Japanese government, the 2011 earthquake was a crisis event, and for New Zealand government, the COVID-19 pandemic was a crisis event. The study analysed how the Sendai city authorities have been actively involved in modernizing critical infrastructure and residential buildings since the 2011 earthquake and promoting renewable energy programs. In November 2023, within the Sendai Framework for Disaster Risk Reduction 2015-2030, a lecture on earthquake safety was held for Kyoto University students. The Ministry of Education, Culture, Sports, Science and Technology of Japan has been strengthening the earthquake resistance of educational institutions and as of 2024, 100% of schools have been modernized. After the outbreak of the coronavirus pandemic, New Zealand authorities introduced a system of 4 levels of warning, according to which different rules for staying in public places were applied depending on the level of epidemiological danger. The vaccination rate reached more than 80% in a brief period, which enabled the introduction of a traffic light system, according to which, if the population had a vaccination certificate, they could return to their pre-pandemic lifestyle. The study explores how sustainable approaches – such as infrastructure modernization, disaster risk reduction, renewable energy promotion, and inclusive health governance – contributed to long-term societal well-being. The findings emphasize that sustainability-oriented

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strategies in public administration strengthen crisis resilience and enhance national preparedness for future challenges.

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1. Introduction

In the modern world, effective public management is the key to the sustainable development of society. Society's dependence on effective public administration becomes even more pronounced in times of crisis. The key to effective anti-crisis management is the preliminary preparedness of government agencies for emergencies. Such preliminary actions may include careful planning, regular training of both civil servants and civilians in responding to certain emergency events, and modelling potential emergencies.

Effective public administration is a foundational element of sustainable development, particularly in times of crisis (Aliyev et al., 2024a; Işık et al., 2024; 2025). The integration of sustainability principles – such as long-term resilience, resource efficiency, and inclusive governance – ensures that state institutions not only respond to emergencies, but also contribute to systemic transformation in line with the UN Sustainable Development Goals (SDGs).

The very notion of a crisis involves a certain amount of chaos and, in some cases, the inability to build effective vertical communication. For this reason, the effectiveness of public administration relies not least on the ability of local communities to act and respond in a coordinated manner (What role does the…, 2024). If the crisis occurred due to an unpredictable epidemiological situation, the main tasks of the authorities may include, for instance, building an "institution of trust" in the authorities, increasing the confidence of the local population in the anti-epidemic measures taken and the quality of the reasoning behind these actions (Responding to COVID-19…, 2024).

One example of a serious challenge for national governments in recent years has been the coronavirus pandemic, the effectiveness of governments' responses to the pandemic can already be observed. Governments with strong institutions and a prominent level of public trust in them coped much better with the pandemic and proved to be more resilient, as they were able to manage many processes in a coordinated manner (To respond to crises…,

2022). In the context of investigating the international practices of effective public management in emergencies and crises, the study analysed the existing sets of strategies, procedures, and mechanisms aimed at rapid response, development of relevant measures, and their coordination for recovery and adaptation to the conditions created by the crisis, which were also covered by O. Odyntsova and H. Kuzmenko (2023). O. Hudyma (2021) investigated the introduction of organizational and technical situational centres in the system of public authorities, which should aim to predict and detect crises, including military ones.

The study also reviewed the findings of S. Khalatur et al. (2020) and the practice of enterprise management during crises in the USA, Japan, China, and the European Union to find effective global experience in solving economic and financial problems. The study conducted a thorough analysis of the mechanisms of technical support for security forces in crises in advanced countries, specifically among the member states of the North Atlantic Treaty Organisation; this issue was also investigated by V. Yemanov (2023). A. Terentieva (2023) addressed the management of the security of the Israeli civilian population in crises and highlighted that the civil defense system requires quality cooperation between central and local authorities to respond effectively to emergency and crisis events. The study analyzed the world experience of investigating the characteristics of healthcare system resilience based on the study of the consequences of the Ebola and COVID-19 epidemics by O.L. Korolchuk (2021). The study reviewed the recommendations of O. Havva (2023) for Ukrainian healthcare institutions, considering the practices of Israel and Japan in meeting the medical needs of territorial communities, and outlining the main challenges of the medical sector in emergencies. L. Danylenko (2022) covered the issue of public administration of educational institutions based on the generalization of international practices in responding to crises, specifically, with the provision of practical cases from Europe, Asia, and the United States, with the relevant consideration of the response of higher state and local government bodies to certain emergencies.

Considering the above, the purpose of this study was to analyse the international practices in responding to, counteracting, and overcoming the consequences of crises through effective public administration.

2. Materials and Methods

The study was based on articles, monographs, and other types of scientific publications, the analysis of which helped to identify the key aspects of

public administration, the typology of crises, as well as the most vulnerable areas of socio-political life. The countries analysed in this study were Japan and New Zealand. Japan is geographically located in a region of active volcanic and seismic activity, and therefore its experience is essential.

In Japan Basic Act No. 223 "On disaster countermeasures" (1961) was adopted. The analysis of this document helped to identify the main aspects of public administration in crisis that are most common in the Pacific region. The Sendai Framework for Disaster Risk Reduction 2015–2030 by the United Nations Office for Disaster Risk Reduction (2015) was important for the analysis, as its provisions helped to identify the activities set out in it that had a qualitative impact on public risk management and disaster recovery in Japan and in developing countries that are located in seismically active regions. An analysis of the Japanese government's actions under subsidy programs has made it possible to trace the extent to which educational institutions have been modernized to strengthen the earthquake resistance of buildings (Ikeda, 2023). An analysis of the actions taken by the local authorities of Sendai after the 2011 earthquake has helped to outline the key aspects of overcoming the consequences and preventing analogous damage to infrastructure. Attention was drawn to the modernization of sewerage facilities and the strengthening of residential buildings (Earthquake countermeasures in…, 2024; Improvements in the…, 2024).

The study of the New Zealand government's actions to counter the spread of COVID-19 infection focused on different strategies to overcome the epidemic. In terms of the vaccination rate, it was essential to analyse the messages from the New Zealand Ministry of Health and the information and statistics published by it, COVID-19 Vaccine Data (2024). The New Zealand Government introduced the 'traffic light' regime in 2021 to understand the differences between the two strategies, explore the approved reasons for switching from one strategy to the other, and delve into the specifics of social distancing and staying in crowded places across the 4 alert levels (COVID-19: New Zealand…, 2021; Explained: What the..., 2021). To compare the effectiveness of national governments' actions during the pandemic, it was useful to consider the statistics provided by the World Health Organization, which specifically addressed the number of deaths per 100,000 people in "Number of COVID-19 deaths reported to WHO, New Zealand" (2024a) and "Number of COVID-19 deaths reported to WHO, Ireland" (2024b). The analysis also addressed the significance of the New Zealand government having an active dialogue with the country's population. The survey "Royal Commission of Inquiry into COVID-19 pandemic response: What you need to know" (2022) played a major role in this.

3. Results

3.1. Prevention and management of natural disasters in Japan

Japan, located in a region prone to volcanic and seismic activity, has developed a robust governance framework to address natural disasters (Recount with digital…, 2023). This experience is pivotal in understanding how effective public administration practices can enhance crisis resilience and sustainability. The Japanese government's commitment to disaster risk reduction and recovery is demonstrated through its institutional frameworks and proactive policies, such as the Sendai Framework for Disaster Risk Reduction 2015-2030 (United Nations Office…, 2015). These measures emphasise resilience-building, risk-informed planning, and community engagement, key components of sustainability-orientated governance (Caputo and Fasiello, 2024; Murtezaj et al., 2024).

Japan is located within an area with volcanic activity and frequent earthquakes. Generally, up to 90% of earthquakes and 75% of volcanic eruptions occur in this region. Tsunamis and typhoons are not uncommon in Japan (Reza, 2019). In March 2011, a strong tremor occurred near the north-eastern part of Japan, which triggered one of the strongest earthquakes in recent decades and the tsunami. Apart from the thousands of people who died and hundreds of thousands of people who lost their homes, the tsunami triggered an accident at three nuclear reactors at the Fukushima nuclear power plant (NPP), which led to the release of massive amounts of toxic and radioactive substances (Mar 11, 2011, CE…, 2023).

GlobalData's World Risk Report (2023) notes that Japan is among the ten most vulnerable countries to natural disasters and ranks third, behind only China and Mexico. The Basic Act No. 223 "On disaster countermeasures" (1961) adopted by the Japanese authorities has also come into force. Its main tasks were to formulate a public administration action plan for the aftermath, rescue planning, disaster prevention and preparedness. The 2011 tsunami came as a surprise to the Japanese government. Since then, the Japanese parliament has passed a law on creating safe during natural disasters cities (Disaster Management in Japan, 2015).

The implementation of a range of security measures is also related to the adoption of the Sendai Framework for Disaster Risk Reduction 2015-2030 of the United Nations Office for Disaster Risk Reduction (2015) during the Third United Nations World Conference on Disaster Risk Reduction in Sendai, Japan, in March 2015. Under this program, 5 main risk reduction priorities were identified: understanding risks, strengthening risk management, investing in disaster reduction measures, enhancing disaster

preparedness, and implementing of "Build Back Better" during recovery. The modernization of wastewater systems and the implementation of energy-efficient technologies as part of post-disaster recovery can be viewed as integral to environmental sustainability strategies (Karlilar Pata et al., 2025; Nakashydze et al., 2021; Niyazbekova et al., 2021). These efforts represent not just reconstruction, but also transformation.

The program introduced by the United Nations Office for Disaster Risk Reduction (2015) contains many useful provisions. One of them is awareness should be raised among government officials at all levels. For instance, a seminar "Disaster Prevention Training Held for International Students" (2023) was held for Kyoto University with the mediation of the Kyoto Prefectural International Centre and the Sakyo Fire Department. Specifically, the Japanese expert Mr. Seiya Yamamoto from the Kansai Centre of the Japan International Cooperation Agency explained how to obtain truthful and reliable information and what actions should be taken to evacuate to a safe place. Firefighters explained how to respond to an earthquake, and the seminar participants had the opportunity to feel tremors of magnitude six to seven on the Japanese seismic scale. Educational initiatives in this domain enhance individual awareness and foster collective adaptability (Rexhepi et al., 2024b; Umair and Guliyeva, 2025).

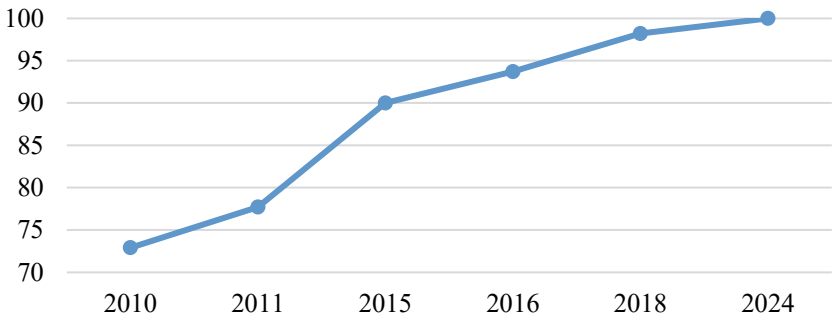
Apart from national and local measures, the United Nations Office for Disaster Risk Reduction (2015) also calls for increased international cooperation with scientists, parliamentarians, and other stakeholders outside Japan. In February 2024, a workshop on improving understanding and management of disaster risks was held in Sofia (Results of the survey…, 2015). The event was organized by the Government of Japan and attended by representatives of all countries of the Balkan Peninsula. One of the cities that suffered the most from natural disasters in Japan in 2011 was Sendai. Sendai city authorities began implementing disaster prevention measures including the rehabilitation of wastewater treatment facilities and the strengthening of buildings. By prioritizing renewable energy, environmental safety, and inclusive education, Japan's recovery strategy following the 2011 earthquake contributes directly to sustainability at multiple levels (Artykbaev et al., 2024; Markhaba et al., 2024).

Construction of sewerage facilities in Sendai City began in 1899. The importance of earthquake-resistant sewerage structures lies in the fact that their damage caused by lithospheric plate movements can lead to loss of flow functions and complete collapse of traffic (Cholponbek et al., 2025). After being damaged during the Great East Japan Earthquake, the Minami-Gamo wastewater treatment plant, which is crucial for Sendai City, was destroyed

and rebuilt to meet modern earthquake resistance standards. (Earthquake countermeasures in sewage facilities, 2024).

Since the mid-1990s, the city of Sendai has been strengthening seismic insulation of both residential and municipal buildings, carrying out seismic diagnostic measures, and providing subsidies for the repair of wooden houses. From 2004-2022, over 2,400 wooden houses in the city were modernized and strengthened (Improvements in the…, 2024). In line with the experience of damage caused by numerous earthquakes, the Japanese authorities have been actively promoting seismic resilience in public schools over the years. (Figure 1).

Figure 1 - Percentage of Japanese schools by year with enhanced earthquake resistance



Source: Results of the survey on refurbishment of the earthquake resistance of public-school facilities (2015), M. Ikeda (2023).

The above data shows that even before one of the most destructive earthquakes in 2011, the Japanese authorities were concerned with the issue of protection, adaptation, and strengthening of earthquake resistance in schools. Accordingly, as of 2010, 72.9% of Japanese schools already had the necessary technological basis to withstand the effects of the earthquake (Results of the survey…, 2015). In subsequent years, the Japanese government's programs have been rapidly strengthening the educational institutions, and as of 2024, 100% of schools in Japan are already earthquake-resistant. The Ministry of Education, Culture, Sports, Science, and Technology continues to work actively and cooperate with victims of natural disasters in the most damaged areas of the country (Ministry of Education…, 2022).

World Bank regularly and systematically collects data on the Japanese government's efforts in recent decades to improve disaster resilience. World Bank experts reviewed Japan's national school modernization programs,

earthquake-resistant school buildings program, and other regulations and technical acts to apply this knowledge to developing countries (Integrating Japan's experience…, 2023).

Consequently, the organisation of Japanese disaster management methods has facilitated the creation of two global instruments for disaster control in developing nations. One of them is the Roadmap for Safer and Resilient Schools (2020). This guide is a step-by-step set of recommendations designed to support governments in developing countries. The purpose of the roadmap is to increase cooperation between stakeholders, government agencies, financial institutions, and organizations. The second tool is the "Global Programme for Safer Schools: Library" (2024), which is a unique tool with open access for all stakeholders to information such as taxonomy, catalogue of building types, information on possible vulnerabilities, and data collection tools.

3.2. Responding to the COVID-19 pandemic in New Zealand

Between the end of 2019 and April 2024, more than 775 million cases of COVID-19 were detected worldwide. The lowest number was in Africa, with about 9.5 million, and the highest number in Europe with almost 280 million cases (Number of COVID-19 cases…, 2024). In February 2020, New Zealand confirmed the first case of the disease (Agence France-Presse, 2020). A little later, in March 2020, New Zealand announced that from that moment on, state borders would be closed to anyone who was not a citizen or resident (Roy, 2020). The Prime Minister of New Zealand, Jacinda Ardern, said that she did not want to take any risks, as all 28 cases of the disease were due to people who had arrived from abroad.

A crucial part of New Zealand's pandemic response was the 4-level alert system (COVID-19: New Zealand, 2021). This balanced approach shows how emergency measures can fit into sustainable development. First level: country has coronavirus infection. Up to 100 people can congregate on the second floor. Healthcare recommends public access to businesses, hotels, sports, and entertainment. The second level of alert is safe for children to attend school. Under the third alert level, residents should only leave their houses when required. Businesses could not provide direct consumer service (Bisenovna et al., 2024). Libraries, museums, cafés, restaurants, and sports facilities were closed. The 4th level of alert banned people from leaving their houses unless in emergencies, and schools and other educational institutions went fully remote (Kubiczek et al., 2023).

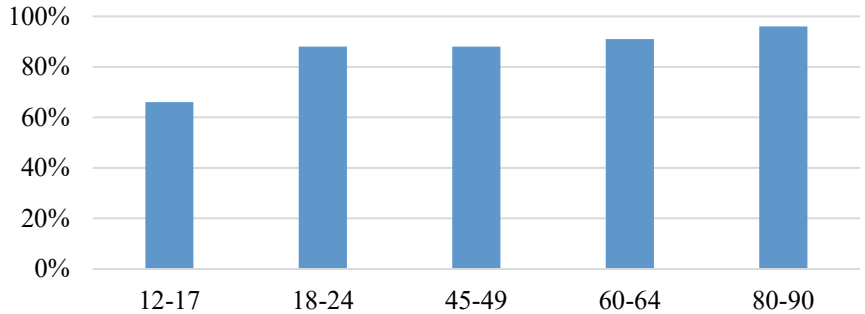
The time gained by the New Zealand government during the severe lockdowns allowed it to improve the system of checking for possible

infection, and the healthcare system could conduct 10,000 tests a day, and in case of a positive result, specialists could warn everyone who had contact with that person (Jones, 2020). Population of New Zealand (83%) was positive about the restrictions (Manhire, 2020). These results are in stark contrast in the G7 countries, where only 54% of the population trusted the actions of public authorities. As the population of New Zealand became increasingly more active in adapting to the reality of the time and increasingly vaccinated, the government introduced a system of "traffic lights", replacing the lockdown system according to 4 levels of epidemiological danger alerts. Thus, in 2021, certain rules were introduced in the country, according to which the vaccinated population could continue to live as they did before the pandemic (Explained: What the…, 2021). At the red level, hospitality establishments such as bars, cafés, restaurants, and hotels were allowed to open with a vaccination certificate, but restrictions such as wearing masks and a ban on mass gatherings of more than 100 people still applied. People were advised to work from home, schools could only operate if health precautions were followed. At the orange level, the limit of gatherings of up to 100 people was lifted, and hospitality establishments that decided not to use vaccination certificates were closed. The green level means that there are several cases of coronavirus among the population of a community, but fully vaccinated people can live as they did before the pandemic (Ismayilzade et al., 2021; Rexhepi et al., 2024a).

The reported number of coronavirus cases in New Zealand was around 2.5 million between the end of 2020 and April 2024 (Number of COVID-19 deaths…, 2024a). In the same period, Ireland recorded 1.7 million cases of coronavirus (Number of COVID-19 deaths…, 2024b). It appears that Ireland, with a population almost identical to that of New Zealand, has fared much better in the epidemic. However, looking at the number of recorded deaths from the coronavirus, for New Zealand this figure was 3,944 cases, while in Ireland there were almost 10 thousand cases (Number of COVID-19 deaths…, 2024a; 2024b). The epidemiological measures taken by the New Zealand authorities were focused on achieving "zero COVID", and the key task was to vaccinate the country's most vulnerable population (Figure 2).

According to statistics provided by the Ministry of Health of New Zealand, the number of coronavirus cases among the population aged 1 to 29 years was about 1 million, while the number of hospitalizations due to the extremely complicated course of the disease was about 7.5 thousand cases (COVID-19: New Zealand…, 2021). For people aged 50 and over 70, the number of cases was about 820 thousand. However, compared to the number of hospital admissions for this age group, it already amounted to more than 26 thousand cases.

Figure 2 - Percentage of vaccination coverage by age group in New Zealand



Source: Compiled by the authors of this study based on COVID-19: New Zealand has 4 alert levels, here's how they work (2021).

In September 2022, the New Zealand authorities cancelled the restrictions that were applied during the so-called "traffic light" regime (Manhire, 2020). Latest medical research and recommendations showed a sharp decline in the number of illnesses and hospitalizations (COVID-19 traffic light…, 2022). This approach underscores the importance of institutional learning and long-term planning in achieving sustainability in crisis response. The number of cases continued to be volatile, there were no dramatic peaks as there were in 2022 (Bornemann et al., 2024).

Members of the Faculty of Public Health at the University of Otago in Wellington and epidemiologists M. Baker and N. Wilson (2022) noted that most indicators of how the New Zealand authorities responded to the spread of the epidemic were among the most successful in the world. Another aspect is the constructive dialogue between the government and the population. In December 2022, the New Zealand government announced the establishment of a Royal Commission of Inquiry into the response to the coronavirus pandemic (Royal Commission of…, 2022). The purpose of the institution was to help both the government and the population prepare for possible future pandemics.

In June 2023, the commission was to move on to face-to-face meetings with healthcare workers, teachers, and others involved in anti-epidemic measures. The chairman of the commission, epidemiologist and professor T. Blakely, said that such actions could be interpreted as election campaigning, and therefore the commission's work would continue after the elections, in early 2024 (Quinn, 2023). As of February 2024, Minister of the Interior B. van Felden stated that the government wanted to expand the scope of the commission and engage the public in discussions about the measures taken during the pandemic (Government mulls expanding…, 2024). The public

consultation period started on 8 February 2024 and lasted until 24 March 2024 (Consultation process timelines, 2024).

The Royal Commission of Inquiry into the Coronavirus Response had received more than 13 thousand responses from New Zealanders from all levels of society sharing their experiences. (Blakely, 2024). New Zealand authorities were approaching an investigation into the impact of the pandemic and the effectiveness of the measures taken. The investigation into the consequences differed markedly from the effectiveness of the measures taken due to the conflict-free form of the commission's work with respondents. New Zealand's inclusive consultation process – via the Royal Commission – demonstrated a sustainability-focused approach to governance by integrating public feedback into institutional learning. The establishment of the Royal Commission of Inquiry and its inclusive consultation process reflect a commitment to transparent, participatory, and accountable governance.

Therefore, the decisions taken by the New Zealand government in the field of public administration contributed to the fastest possible reduction in the number of deaths from coronavirus. Measures proved to be effective in 2020-2021, although they did not help protect against the Omicron coronavirus strain in February 2022 (COVID-19 vaccine data, 2024; COVID-19: Current cases, 2024).

4. Discussion

For Japan one of the most pressing issues is natural disasters. N. Mori et al. (2021) also investigated this issue, they also noted the role of active climate change and its impact on tropical cyclones. However, the adoption of relevant legislation that would allow the government to make urgent decisions in the field of security took place only in 1962 with the adoption of Basic Act No. 23 "On disaster countermeasures" (1961). Exploring the issue of natural disasters and the Japanese government's experience in this area, T. Nakasu (2023) also addresses the consequences of the largest typhoon in Japanese history in 1959, which became the catalyst for the adoption of the above act. Findings highlight that sustainability in disaster risk governance cannot be reduced to infrastructural or institutional preparedness alone. It requires multilateral cooperation and long-term strategies (Hadasik et al., 2025; Karlilar Pata and Pata, 2025).

The primary task of the governance was to inform the public about how to behave during natural disasters. M.T. Chaudhary and A. Piracha (2021) explored this issue, noting that disaster management training and education

is an essential part of the curricula in Japan. Japanese government has continued its preferential subsidy programs for local communities. Thus, as of 2024, absolutely all schools in Japan are earthquake-resistant. In the study of K. Shirai et al. (2022), the researchers concluded that previously modernized schools on the island of Hokkaido withstood a seismic activity of 6 points after the 2018 earthquake, with only cracks in columns and walls. K. Kusunoki (2021) reached analogous results, noting the role of the Japanese Ministry of Education, Culture, Sports, Science and Technology in the development of nationwide projects for seismic assessment and rehabilitation of school buildings.

The authorities of Sendai, which was severely affected by natural disasters in 2011, began to develop and implement security measures and projects. O. Murao (2020) noted that government and local disaster recovery strategies have been crucial for the most affected communities. Apart from local actions, the Sendai Framework for Disaster Risk Reduction 2015-2030 of the United Nations Office for Disaster Risk Reduction (2015) has become an important program in preventing and overcoming the consequences of natural disasters.

The "Build Back Better" principle is the basis for learning from past disasters, as well-prepared policymakers, workers, civilians, and other stakeholders will contribute to risk reduction based on the experience of rebuilding affected areas (Aliyev et al., 2024b; Guliyeva, S. 2023; Zhao et al., 2025). The principle of "Build Back Better" is deeply embedded in the philosophy of sustainable development. E. Maly and A. Suppasri (2020) also investigated the implementation of the Sendai framework for disaster risk reduction 2015-2030 and concluded that the overall people-centred and inclusive approach of this program, the global goals, and some of the priorities contribute to the development of good practices in reconstruction and assessment of the progress of reconstruction of destroyed cities and territories. Furthermore, some cities located on the coast and most vulnerable to new disasters are actively implementing the safety standards "Earthquake countermeasures in sewerage facilities" (2024) and "Improvements in the earthquake resilience of wooden houses and apartment building" (2024).

In times of pandemic the New Zealand authorities, took measures to close borders, except for citizens and residents of the country, and then introduced a system of strict lockdowns. J. Gibson (2022) considered this issue in the context of the problem of the New Zealand authorities' response to the epidemic. In his study, Gibson concluded that in those countries where strict epidemiological measures were implemented after the peak of the disease, they were ineffective in reducing the total number of deaths from the infection.

The use of strict lockdowns was no longer necessary when the number of cases and deaths from infection began to decline. In response, the New Zealand authorities introduced the so-called "traffic light" system, when individual cities or regions could receive a certain level of restrictions. The transition to a new strategy to combat the infection was because the majority of the New Zealand population had been vaccinated and to continue the country's economic development during the crisis, the traffic light system became the most effective. L.A. Taylor et al. (2024) investigated the impact of this system and overcoming infection-related mortality, focusing on its impact on higher education staff. They concluded that although the staff of the schools was dealing with considerable changes, they were proud to continue to adapt to the pandemic realities within the framework of the "traffic light".

The actions of the New Zealand authorities led to a rapid vaccination of the vast majority of its population. Most people responded positively to the vaccination measures. N. Steyn et al. (2022) put forward a thesis that confirms the effectiveness of mass vaccination of the population, which was done in New Zealand. Using the modelling method, the researchers emphasized that a progressive reduction in risk occurs as vaccination coverage increases, e.g., 90% vaccination among children over 12 years of age reduces the risk of an outbreak in a community by 3 times. A.H.Y. Chan et al. (2024) analysed the effectiveness and involvement of the population in the vaccination process. The researchers' study was based on a survey of 611 respondents from New Zealand, 99.2% of whom had received at least one dose of the vaccine.

The review of the findings of other researchers helped to compare the results of the present study and confirm the effectiveness of public administration in Japan and New Zealand. In terms of the effectiveness of state governance in New Zealand, researchers have believed only governments with strong institutions can effectively overcome the consequences. The analysed practices of the New Zealand government have shown that actions were taken to severely restrict the rules of behaviour in public places, but at the earliest opportunity, the vaccinated population was able to return to their normal lifestyle. Overall, the two national case studies confirm that governance models informed by sustainability are more effective in managing crisis impacts and guiding societies.

5. Conclusions

The study confirmed that sustainability-oriented governance not only

mitigates risks but also fosters inclusive and adaptive development trajectories.

The research emphasized that the Sendai Framework for Disaster Risk Reduction (2015-2030) serves as a key tool not only for managing and mitigating the impacts of natural disasters, but also for promoting sustainable development through risk-informed planning, resilient infrastructure, and community engagement. Japan's efforts after the 2011 disaster reflect a clear commitment to sustainability, as evidenced by the modernization of water treatment and sewage systems, the seismic reinforcement of residential structures, and the implementation of nationwide subsidy programs to ensure the earthquake resistance of all educational institutions.

In the case of New Zealand, the study identified several elements of sustainability-oriented governance, including flexible public health management, evidence-based decision-making, and public trust-building. Transparency and inclusivity are not only external facilitators of governance, but they also constitute intrinsic dimensions of resilience. These qualities contribute directly to the adaptive capacity of a society by fostering a sense of collective responsibility, enhancing social cohesion, and enabling timely, informed decision-making. As integral components of resilient governance, they ensure that policy measures are not only accepted but also effectively implemented in the long term, promoting continuous learning and adaptation. By embedding transparency and inclusivity into crisis management practices, governments can strengthen societal trust and bolster resilience against future challenges.

The phased system of alert levels and the subsequent "traffic light" framework allowed for targeted interventions that minimized disruption while preserving essential services. The rapid vaccination of more than 80% of the population and the government's transparent dialogue with citizens – facilitated through the Royal Commission of Inquiry – exemplify participatory and inclusive governance practices aimed at enhancing societal preparedness and institutional learning. These approaches contributed to both effective crisis response and the strengthening of democratic resilience. The findings indicate that integrating the principles of sustainability into public governance enhances national capacities to respond to crises in a coherent and future-oriented manner.

Among the limitations of the study is the absence of the final report from the Royal Commission of Inquiry into New Zealand's pandemic response, expected in September 2024. Future research should incorporate this document, as it will likely offer valuable policy insights and recommendations relevant to sustainable crisis governance. In addition, a comparative analysis involving other countries with high disaster risk

exposure – such as China, Mexico, and island nations in seismically active regions – would enrich the global perspective on sustainability-driven public administration in emergencies.

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