

Earthquake Post-Disaster Rehabilitation and Reconstruction in West Nusa Tenggara Province

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Abstract

The earthquake that occurred in 2018 in West Nusa Tenggara Province has caused great damage and losses in various important sectors including housing, infrastructure, social, economic and cross-sectors. The affected areas are North Lombok District, West Lombok District, East Lombok District, Central Lombok District, Mataram City, Sumbawa District, and West Sumbawa District. Rehabilitation and reconstruction in the context of post-disaster recovery for affected communities is a national priority programme listed in the National Medium-Term Development Plan (RPJMN) 2020-2024. This study aims to determine how the success of the post-disaster recovery programme as measured by the Post-Disaster Rehabilitation and Reconstruction Recovery Index (IRRP) implemented by BNPB from 2018 to 2024. The research methodology uses a literature study with the scope of data acquisition through secondary data and other related sources. The results showed that by 2024 the national priority programme for earthquakes in NTB had been achieved. All areas affected by the 2018 earthquake have recovered with IRRP values according to the baseline of 100%, or more. The acceleration of recovery in each region is different depending on the situation and conditions in the affected areas. As a form of disaster risk reduction, in the future a more comprehensive policy is needed related to the implementation of post-disaster rehabilitation and reconstruction involving multistakeholders

Keywords: *Rehabilitation and Reconstruction, Recovery, Post-disaster, West Nusa Tenggara*

INTRODUCTION

Indonesia has a high level of disaster risk due to its geographical location. Geologically, Indonesia is located at the confluence of four major plates, namely Eurasia, Indo-Australia, the Philippines and the Pacific, making it vulnerable to earthquakes, tsunamis and volcanic eruptions. One of these is the province of West Nusa Tenggara. Geographically, this region is located between the Mediterranean track, which is the Indo-Australian plate in the south that stretches from Sumatra, Java, to Nusa Tenggara, and the Flores fault (Flores Thrust) in the north. In addition to being located between two fault lines, NTB also has great natural potential, especially in the tourism sector, as well as a fairly high population. These factors increase the risk of damage and casualties in the event of an earthquake (BNPB, 2021).

The series of earthquakes in West Nusa Tenggara (NTB) Province on 29 July 2018, 5 August 2018, and 19 August 2018 resulted in massive damage and losses including 559 deaths and 1,478 injuries (Supartoyo et al, 2018). The NTB earthquake also displaced 396,032 people. In addition, there was large-scale damage to infrastructure and facilities such as 188,139 residential houses, office buildings, land transport infrastructure, water resources infrastructure, health facilities, education, places of worship, hotels, shops and various public facilities. The total damage and loss caused by the earthquake disaster was Rp 18,139,594,789,608,-. The affected areas are 7 regencies/cities, namely North Lombok, West Lombok, East Lombok, Central Lombok, Mataram, Sumbawa and West Sumbawa. (BPBD Provinsi NTB, 2018.).

The earthquake disaster was designated as a provincial-scale disaster. In an effort to accelerate post-earthquake recovery, the Governor of West Nusa Tenggara established West Nusa Tenggara Governor Regulation No. 35/2018 dated 2 November on the Action Plan for Post-

Earthquake Rehabilitation and Reconstruction of West Nusa Tenggara Province 2018-2019. The document is a reference and guideline for the Government of West Nusa Tenggara Province and the Governments of North Lombok District, East Lombok District, Central Lombok District, West Lombok District, Mataram City, Sumbawa District, and West Sumbawa District, the business world, non-governmental organisations, and related stakeholders for rehabilitation and reconstruction efforts in the housing, settlement, infrastructure, social, economic, and cross-sector sectors (including the government and environment sub-sectors).

The results of research conducted by Jailani, et al in 2020 found that the success of the implementation of rehabilitation and reconstruction of the housing sector after the earthquake in NTB depended on available resources. The budget was adequate, but human resources were still lacking in determining the target groups. Implementer support is good, but political interests continue to influence decision making and target determination. Good participation and communication among stakeholders have been established to support post-disaster recovery. However, the complex process makes it difficult for people with limited knowledge.

Research by Hamit, et al 2023 shows that the Post-Disaster Community Housing Rehabilitation and Reconstruction Programme in North Lombok Regency in 2018 has been quite effective. An analysis of average effectiveness using a likert scale yielded values of 66.83% for programme readiness, 71.60% for programme planning, 71.4% for programme implementation, and 69.53% for programme monitoring and evaluation. The average effectiveness level produced in this study was 69.84%.

Research by Purwata et al. in 2024 found that the formulation of post-earthquake disaster management policies in the economic sector, particularly the tourism sub-sector in North Lombok Regency, NTB Province, is a regulation that is applied hierarchically and followed by the local government. The implementation of the regulatory formulation has been effective and efficient. An evaluation of post-earthquake tourism sector recovery policies in relation to the implementation of the four pillars of tourism development policy destinations, marketing, industry, and tourism institutions is demonstrated in tourism destination development activities.

Policy innovations were also made to accelerate recovery, namely the activity of rebuilding damaged houses with the Earthquake Resistant House (RTG) model while still in the emergency to recovery transition period. Although in its implementation there are obstacles and challenges, with good collaboration and synergy between various stakeholders, the problems that arise can be resolved. Each stakeholder has an equal and equally important role in aligning and coordinating all parties to support the success of post-disaster recovery efforts. Data validation by Bank Rakyat Indonesia (BRI) contributed significantly to preventing double funding. RTG designs from the Ministry of PUPR made it easier for communities to plan and rebuild their homes. The Indonesian National Armed Forces (TNI) accelerated the RTG construction process, and facilitators played an active role in assisting the community (Suryanuddin & Annisah, 2021).

This research aims to evaluate post-earthquake recovery efforts in NTB Province in 2018, which were carried out by various parties with various programme interventions and activities, by looking at the Post-Disaster Rehabilitation and Reconstruction Index (IRRP) value. The results of this study are expected to help the central government, affected local governments, and related parties to review and evaluate disaster management efforts that have been carried out, see whether the affected sectors have recovered, and to determine the sustainability of further policies as an effort to reduce disaster risk in the future.

RESEARCH METHODS

This research methodology uses descriptive quantitative methods, which are methods that help describe, show or summarise data in a constructive way that refers to statistical descriptions

that help understand the details of the data by summarising and finding patterns from specific data samples (Sudirman, et al, 2023). The data collection and analysis techniques used are through literature studies of secondary data obtained from the researcher's workplace, namely BNPB, and other related sources.

The calculation of the IRRP value in this study was carried out by BNPB using the ODK Kobotoolbox-based application. The calculation of the rehabilitation and reconstruction index will be carried out in 5 sectors, namely housing, infrastructure, social, economic, and cross-sector. The calculation of the IRRP value during the year of the event (T_0) uses the following formula:

$$IRR P t - 0 \text{ standardized} = \frac{IRR P_{t_0}}{IRR P_{t-1}} \times 100\%$$

While the formula for calculating IRRP in the year after the disaster event or $T+n$, with the value of $n = 1,2,3$, etc. is as follows:

$$IRR P_{t+1} \text{ standardized} = \frac{IRR P_{t+i}}{IRR P_{t-1}} \times 100\%; i = 1,2,3$$

Description :

IRR P t_0 = Initial IRRP value in the year of the disaster

IRR P $t-1$ = Baseline IRRP value (100), which is the year before the disaster event

IRR P $t+1$ = IRRP value one year after the disaster occurred

The difference between IRRP $T+1$, and IRRP $T-1$ (Baseline) is referred to as Δ IRRP. The Δ IRRP value indicates the level of recovery (performance) of the rehabilitation and reconstruction process. If conditions have recovered to pre-disaster conditions, it will be indicated by the value of Δ IRRP = 0 or the standardized IRRP value will be 100%.

RESULT AND DISCUSSION

Organising Post-Disaster Rehabilitation and Reconstruction

According to Law No. 24/2007, the implementation of disaster management in the post-disaster phase includes rehabilitation and reconstruction. Rehabilitation is the repair and restoration of all aspects of public or community services to an adequate level in the post-disaster area with the main objective of normalising or running reasonably all aspects of government, life and livelihood of the community in the post-disaster area. Reconstruction is the rebuilding of all infrastructure and facilities, institutions in post-disaster areas, both at the government and community levels with the main target of the growth and development of economic, social and cultural activities, the establishment of law and order, and the rise of community participation in all aspects of community life in post-disaster areas. BNPB Regulation No. 6/2017 on the implementation of post-disaster rehabilitation and reconstruction states that build back better and safer is a post-disaster rehabilitation and reconstruction effort by rebuilding, both aspects of damage and losses due to disasters, must be carried out to be better and safer and guided by efforts to reduce disaster risk in the future. Build Back Better is an important concept that incorporates a holistic approach to improving the physical, social, environmental and economic conditions of communities during post-disaster recovery activities to create resilient communities (Mannakkara & Wilkinson, 2014). The concept of built back better can be described in the following chart :

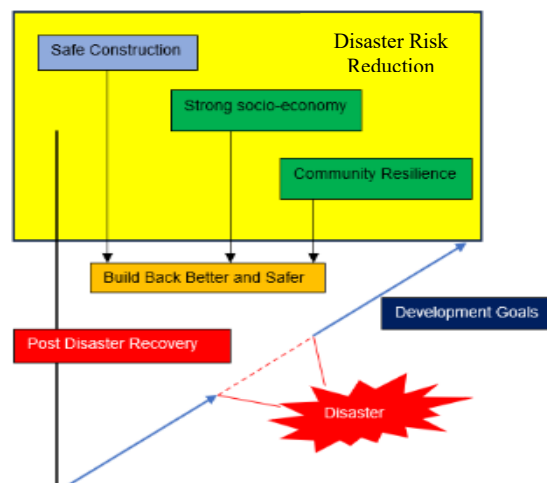


Figure 1. The Build Back Better and Safer Concept (Source: Ministry of PUPR)

The implementation of Post-Disaster Rehabilitation and Reconstruction includes post-disaster needs assessment (Jitupasna), preparation of rehabilitation and reconstruction plans, allocation of resources and funds, implementation of rehabilitation and reconstruction, monitoring and evaluation and reporting. Jitupasna is a series of assessment activities and consequence assessments, impact analyses, needs estimates, and initial recommendations on recovery strategies that form the basis for the preparation of the Post-Disaster Rehabilitation and Reconstruction Plan (R3P) document. Regulations on the preparation of post-disaster rehabilitation and reconstruction plans are contained in the Head of BNPB Regulation Number 5 Year 2017. This R3P document serves as the basis, reference, and division of authority in post-disaster recovery efforts.

To evaluate the success of the post-disaster recovery programme in NTB Province, BNPB calculated the post-disaster recovery index or post-disaster rehabilitation and reconstruction index (IRRP) by comparing the initial conditions before the disaster occurred (T_{-1}), the year of the disaster (T_0), namely 2018, and $T+n$, namely the years after the post-disaster recovery programme was carried out during the period 2019 - 2024. The calculation of the rehabilitation and reconstruction index is carried out in 5 sectors, namely housing, infrastructure, social, economic, and cross-sector. (BNPB, 2023)

Post-Disaster Recovery in West Nusa Tenggara Province

Based on Presidential Instruction (Inpres) Number 5 of 2018 concerning the Acceleration of Post-Earthquake Rehabilitation and Reconstruction in West Lombok District, North Lombok District, Central Lombok District, East Lombok District, Mataram City, and affected areas in West Nusa Tenggara Province, the President ordered ministries and institutions as well as related parties to immediately implement post-disaster rehabilitation and reconstruction efforts. Furthermore, in Presidential Regulation Number 18 of 2020 concerning the National Medium-Term Development Plan (RPJMN) for 2020-2024, post-disaster recovery in 7 districts/cities affected by the 2018 earthquake in NTB is a national priority programme in the fields of environmental development, increasing disaster resilience, and climate change adaptation.

Various policies and programmes for post-earthquake recovery in NTB have been carried out by many parties. The implementation of policies based on Regional Regulation No. 9/2014 on Disaster Management in West Nusa Tenggara Province has been running quite well in the pre-disaster context and during disaster emergencies. However, in the context of transition to recovery or post-disaster stage, it is still lacking (Rahman et al., 2023). The results of the IRRP assessment in 7 districts/cities affected by the earthquake in NTB Province are as follows :

A. North Lombok District

Based on the Jitupasna calculation data contained in the R3P, the impact of the disaster in North Lombok District was the worst compared to other affected areas in NTB Province. The death was 467 people, 101,735 people were displaced, 41,983 houses were damaged, the total damage and loss was Rp 9,991,185,255,451. During the post-disaster recovery period, every year BNPB conducts an IRRP assessment, namely from the year of the disaster (T_0), from 2018 until 2024. The IRRP of North Lombok District can be seen in table 1 below :

Table 1. IRRP for North Lombok District 2018 - 2024

Sector	IRRP Value per year (%)								Status
	2017	2018	2019	2020	2021	2022	2023	2024	
Housing	100	63.44	68.51	78.25	84.87	85.97	88.25	100	Recovered
Infrastructure	100	75.29	79.92	84.7	89.17	91.81	93.8	100.58	Recovered
Social	100	81.15	82.12	86.94	92.36	93.8	94.73	101.6	Recovered
Economy	100	82.64	81.47	88.48	94.16	95.49	95.83	102.7	Recovered
Cross Sector	100	79.07	81.95	88.37	93.4	93.95	95.26	102.13	Recovered
Average increase across all sectors									6.87 %

Source : BNPB, 2024

From table 1 above, it can be seen that based on the IRRP value, North Lombok District is declared to have recovered, namely returning to its original condition, namely reaching a baseline value of 100% by 2024, with an average increase in all sectors of 6.87%. North Lombok District was affected the most, so post-disaster recovery takes a longer time due to the complexity of the situation and conditions in the affected areas. Research results from Bakti & Nurmandi in 2020 shows that the efforts made by the local government in rehabilitation and reconstruction cover five sectors, namely social, economic, infrastructure, settlement, and cross-sector. However, in its implementation there are various problems in the community, especially in the settlement sector. The slow recovery of the settlement sector was caused by the complexity of the bureaucracy. In addition, community dissatisfaction regarding the data collection of damage categories, whether light, medium or heavy, as well as the lack of community participation in the recovery process, are problems that often arise. Research results from Mazid, Santoso, dan Hanafie in 2021 shows that policy implementation in the post-earthquake rehabilitation and reconstruction programme in North Lombok District still requires competent resources as implementers. In addition, communication between policy makers and those who implement it must be clear, accurate and consistent to avoid misunderstandings. In addition, aspects of the bureaucratic structure also need to be considered, especially in terms of the division of responsibilities that must be carried out appropriately.

B. West Lombok District

Based on data from the R3P document, the impact of the earthquake disaster in West Lombok District was 44 fatalities, 399 people were injured, 116,453 were displaced, 72,222 houses were damaged. The total value of damage and loss was Rp 3,507,602,649,240. Post-disaster recovery efforts have been carried out by various parties in 5 affected sectors. The results of the IRRP calculation for West Lombok District can be seen in table 2 as follows :

Table 2. IRRP West Lombok District 2018 - 2024

Sector	IRRP value per year (%)								Status
	2017	2018	2019	2020	2021	2022	2023	2024	
Housing	100	97.72	107.06	112.85	114.75	116.77	118.5	125.17	Recovered
Infrastructure	100	100.27	104.62	110.39	112.67	114.35	116.53	123.2	Recovered
Social	100	98.25	100.08	101.95	101.95	102.16	98.91	105.58	Recovered
Economy	100	91.3	93.48	108.7	108.7	113	106.5	113.7	Recovered
Cross Sector	100	100.93	102.61	103.36	103.36	104.23	102.08	108.75	Recovered
Average increase across all sectors									6.67 %

Source : BNPB, 2024

From table 2 above, it can be seen that until 2024, the average increase in the index across all sectors is 6.67%. In 2018, at T_0 or the year of the disaster, the infrastructure sector recovered with a value of 100.27%, exceeding the 100% baseline. The housing, infrastructure and cross-

sector sectors recovered in 2019, and the economic sector recovered in 2020. Recovery in the economic sector takes longer than other sectors because it is the most affected, this is in accordance with the results of research that the earthquake in NTB resulted in a disrupted community economy. People lived in a situation where they had no income, especially in the entrepreneurial community, farmers and labourers. Another impact was that social activities such as arisan (social gathering), gotong royong (mutual assistance), and recitation were stopped after the earthquake because there was no place to conduct these activities (Jakandar, 2018).

C. East Lombok District

As a result of the earthquake disaster in East Lombok in 2018, 31 people died, 122 people were injured, 104,060 people were displaced. The total damage and loss in 5 sectors was IDR 1,527,577,920,910. The results of the IRRP calculation for East Lombok District can be seen in the following table:

Table 3. IRRP West Lombok District 2018 - 2024

Sector	IRRP value per year (%)								Status
	2017	2018	2019	2020	2021	2022	2023	2024	
Housing	100	97.45	100.39	102.22	102.35	104.25	104.84	111.21	Recovered
Infrastructure	100	100.27	102.24	103.62	103.89	104.31	104.21	110.94	Recovered
Social	100	98.19	100.5	102.21	102.99	103.24	103.31	110.4	Recovered
Economy	100	93.92	116.9	115.5	118.2	117.6	116.9	123.63	Recovered
Cross Sector	100	98.83	102.18	103.26	103.26	103.68	103.93	110.66	Recovered
Average increase across all sectors									6.73 %

Source : BNPB, 2024

From table 3 above, it can be seen that the fastest recovering sector was infrastructure in 2018, the same year as the earthquake with a value of 100.27%. The other four sectors recovered two years after the earthquake, in 2019. The most affected sector is the economic sector. Various kinds of interventions to restore the economic sector have been carried out by multi-stakeholders including the government, NGOs, the business world, and academics through community service activities. This is because East Lombok District is an area that has a lot of potential for the small and medium industry sector, creative economy, and tourism, for example in the tourist area on the slopes of Mount Rinjani. Research result from Maryanti et al in 2019 shows that the region in West Nusa Tenggara that has the highest number of MSMEs (Micro, Small and Medium Enterprises) is East Lombok at 24.85%. When viewed from the impact of the earthquake damage caused, East Lombok, North Lombok and Lombok are the most targeted areas for economic recovery, especially for the MSME aspect..

One of the activities is assistance in the context of economic recovery of disaster-affected communities carried out by BNPB in collaboration with the University of Mataram in Sugian Village, East Lombok through processing cashew products. The lesson learnt in post-disaster collaborative-based empowerment is more optimal results. The spirit and efforts of the community in the reconstruction process have progressed rapidly, along with increasing knowledge and skills in production and processing aspects. Nevertheless, further assistance is still needed, especially in efforts to support and expand marketing (Saloko et al, 2020). In the tourism sector, which is the source of the community's economy, the recovery process requires different ways and times. The results of research in Sembalun Sub-District, East Lombok, the difference in tourism recovery is influenced by physical, economic, social, and cultural factors. (Fatini & Herwangi, 2022).

D. Central Lombok District

The earthquake disaster in Central Lombok District resulted in 2 fatalities, 3 people injured, 13,887 people displaced, 25,007 houses damaged, with a damage and loss value of Rp 899,663,023,700.- Based on data from BNPB, the results of the IRRP calculation can be seen in the following table:

Table 4. IRRP Central Lombok District 2018 – 2024

Sector	IRRP value per year (%)								Status
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	2017	2018	2019	2020	2021	2022	2023	2024	
Housing	100	86.62	87.05	98.56	100.21	100.21	100.55	107.9	Recovered
Infrastructure	100	100	100.51	102.08	104	105.51	105.91	113.08	Recovered
Social	100	100.42	100.57	101.1	101.9	102.78	102.78	109.95	Recovered
Economy	100	93.38	93.38	100.5	100	101.9	101.9	109.07	Recovered
Cross Sector	100	101.03	102.42	106.52	108.1	108.67	108.67	115.84	Recovered
Average increase across all sectors									7.17 %

Source : BNPB, 2024

From table 4 above, it can be seen that the average increase in the recovery index across all sectors is 7.17%. Sectors that recovered quickly were infrastructure, social, and cross-sector sectors. The economic sector recovered in 2020, and the housing sector took longer, in 2021. The recovery of the settlement sector for earthquake-resistant houses (RTG) experienced several challenges and obstacles. Based on the results of research on the evaluation of the implementation of physical recovery and improvement in the settlement sector after the earthquake disaster in NTB, in general, the implementation of RTG Phase I did not fulfil the 5T indicators (Appropriate Planning, Appropriate Administration, Appropriate Budget Absorption, Appropriate Technical Specifics, and Timely). As for Phase II where the emergency response period has ended, RTG Phase II has fulfilled the 5 T's. All districts/cities including Central Lombok were able to implement RTG Phase II in accordance with the set standards (Suryani, 2021).

E. Mataram City

The impact of the earthquake disaster in Mataram City in 2018 was 9 people died, 63 people were injured, 18,894 people were displaced, 13,437 houses were damaged. The total damage and loss was Rp 982,781,732,844. The results of the IRRP calculation can be seen in the following table:

Table 5. IRRP Mataram City 2018 – 2024

Sector	IRRP value per year (%)								Status
	2017	2018	2019	2020	2021	2022	2023	2024	
Housing	100	95.37	96.56	96.56	100.14	100.55	100.73	107.92	Recovered
Infrastructure	100	94.48	97.09	97.09	100.86	100.9	100.82	108.1	Recovered
Social	100	98.37	98.92	98.92	100.78	100.95	101.01	108.2	Recovered
Economy	100	92.86	103.6	103.6	109.5	109.5	109.1	116.29	Recovered
Cross Sector	100	97.1	99.39	99.39	102.21	102.37	102.6	109.79	Recovered
Average increase across all sectors									7.19 %

Source : BNPB, 2024

From table 5 above, it can be seen that the average increase in all sectors is 7.19%. Mataram City was declared to have recovered from the economic sector in 2019 with an IRRP value of 103.6%. Meanwhile, the other 4 sectors recovered in 2021 with an IRRP value of 100.14% for the settlement sector, 100.86% for the infrastructure sector, 100.78% for the social sector, and 102.21% for the cross-sector. The impact of the earthquake in Mataram City was not as large as other areas on Lombok Island. Policies to accelerate recovery are prioritised in areas that are more severely affected, especially in the tourism sector such as North Lombok, East Lombok and West Lombok, while Mataram City is not a priority so that recovery takes longer. Research conducted by Purwata et al in 2024 stated that the formulation of post-earthquake disaster management policies in the tourism sector is a regulation that is implemented hierarchically, starting from the central government and continued by local governments. Furthermore, an evaluation of the recovery policy of the tourism sector after the earthquake was also carried out, especially in the implementation of the four pillars of tourism development policy, namely destination, marketing, industry, and tourism institutions for the affected areas.

F. Sumbawa District

Based on data from the BPBD of Sumbawa District, due to the earthquake disaster in the region, as many as 6 people died, 53 people were injured, 49,188 people were displaced, 7,353 houses were damaged, with a damage value in 5 sectors of Rp 659,987,295,027, - The results of the IRRP calculation can be seen in the following table:

Table 6. IRRP Sumbawa District 2018 – 2024

Sector	IRRP Value per year (%)								Status
	2017	2018	2019	2020	2021	2022	2023	2024	
Housing	100	92.67	94.69	98.73	99.19	99.94	100.52	107.44	Recovered
Infrastructure	100	99.85	100.87	101.53	102.1	102.35	102.35	109.27	Recovered
Social	100	95.18	96.05	97.52	99.8	99.8	100.2	107.12	Recovered
Economy	100	96.19	96.76	99.05	102.3	102.9	101.1	108.02	Recovered
Cross Sector	100	100.54	101.54	101.54	101.72	102.53	102.44	109.36	Recovered
Average increase across all sectors									6.92 %

Source : BNPB, 2024

Table 6 above shows that until 2024, the average increase in the index across all sectors is 6.92%. In 2018, at T_0 or the year of the disaster event, all sectors have recovered with a value of 100.54%, exceeding the 100% baseline. The settlement sector reached a value of 100.52% in 2023, the infrastructure sector recovered in 2019 with a value of 100.87%. The social sector recovered in 2023 with an IRRP value of 100.2%, while the economic sector recovered in the same year with a value of 101.1%. The results showed that the earthquake on Lombok Island and Sumbawa Island, including in Sumbawa District, affected the livelihoods of 74.32% of households in the affected areas in NTB Province. The most significant impacts are reduced income, loss of employment, loss of physical ability to work, and loss of suppliers and markets. Efforts made by the affected communities include borrowing money, reducing expenditure, selling assets, and changing jobs (Rofi & Zarodi, 2020)

G. West Sumbawa District

The impact of the earthquake in West Sumbawa District was 5 fatalities, 115 injured, 41,126 displaced, 9,612 houses damaged. The total value of damage and loss was Rp 570,596,912,436. The IRRP table can be seen in the table below:

Table 7. IRRP West Sumbawa District 2018 – 2024

Sector	IRRP Value per year (%)								Status
	2017	2018	2019	2020	2021	2022	2023	2024	
Housing	100	97.76	99.88	101.53	103.31	103.25	103.72	110.95	Recovered
Infrastructure	100	100.59	100.92	101.68	102.11	102.22	102.59	109.82	Recovered
Social	100	99.57	99.61	99.96	99.93	100.07	100.11	107.34	Recovered
Economy	100	99.46	100	100	100	100.5	100.5	107.73	Recovered
Cross Sector	100	100.18	102.23	102.14	102.85	103.3	104.37	111.6	Recovered
Average increase across all sectors									7.23 %

Source : BNPB, 2024

Based on the IRRP assessment in West Sumbawa District as contained in table 7 above, until 2024 the average increase in the index in all sectors is 7.23%, all sectors exceed the baseline value of 100% and are declared recovered. The infrastructure and cross-sector sectors have recovered from 2018. The economic sector recovered in 2019 with a value of 100%, the settlement sector recovered in 2020 with a value of 101.53%, and the social sector recovered in 2022 with a value of 100.07%. Until 2024, the sector with the highest IRRP value is the cross-sector and the lowest is the social sector.

Two of the five sectors intervened in, namely infrastructure, recovered quickly. This was due to the local government policy of West Sumbawa District, namely PDPGR (Regional Programme for Mutual Empowerment). The results showed that PDPGR played an important role in accelerating the post-earthquake rehabilitation and reconstruction process, including facilitating and accelerating the formation of community groups (pokmas), which became a basic element in the implementation of post-disaster rehabilitation and reconstruction, facilitating the process of collecting data on earthquake-affected communities quickly and accelerating administration from budget planning to financial accountability reports, providing opportunities for the community to actively participate in accelerating rehabilitation and reconstruction. The success of the PDPGR can be seen from the time taken to complete the work, which was faster than the target set by BNPB, as well as the volume of work that has been completed. Data shows

that more than 95% of houses affected by the earthquake have been rebuilt quickly (Saleh & Harjito, 2020)

CONCLUSION

Based on the IRRP value, by 2024 post-earthquake rehabilitation and reconstruction in West Nusa Tenggara Province has been declared recovered, although within a period of 6 years, the acceleration of post-disaster recovery in each region requires different times, depending on the magnitude of the disaster impact and the situation and conditions in the affected area. With the IRRP value indicator that has exceeded the 100% baseline in each sector, it means that the national priority programme listed in the 2020-2024 RPJMN for post-disaster recovery in West Nusa Tenggara Province for 7 districts / cities has been achieved. Furthermore, there is a need for policies and regulations both at the central and regional levels regarding the implementation of comprehensive post-disaster rehabilitation and reconstruction and involving multi-stakeholders from various aspects. Among them are the pentahelix elements, namely the community, government, business world, academia, and the media. The implementation of post-disaster recovery needs to be carried out effectively and efficiently and on target. Effective and efficient implementation of the post-disaster recovery process is key in reducing risks and ensuring that recovery and reconstruction can run well (Rama & Qadriina, 2024). For this process to take place optimally, it is necessary to develop supporting regulations, which clearly regulate the responsibilities and rights of the various parties involved. The ultimate goal is community resilience in the face of disaster threats.

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