

Practical Framework for Implementing Build Back Better Post-Earthquake Disaster in Cianjur Regency, Indonesia

Bahar Fauzi* and Kurniadi Anwar

Disaster Management Study Program, Faculty of National Security, Republic Indonesian Defense University (RIDU), Jl. Salemba Raya, Central Jakarta, INDONESIA
*Fauzibahar51@gmail.com

Abstract

Implementing build-back better after the earthquake must be made into a practical framework so that activities can run effectively as expected by the government and the community in supporting sustainable development. This study analyzed the practical framework for implementing post-earthquake disaster recovery that applies build back better in Cianjur district, West Java province, Indonesia.

The research method uses qualitatively descriptive design which is expected to identify and build back better activities after the earthquake in Cianjur. Data was collected through interviews, observations and documentation of 12 respondents. Data analysis was carried out by collecting, condensing, displaying and drawing conclusions. The results of the study showed that the build-back better actions that had been carried out, were to reconstruct public service buildings and community houses in four stages, economic conditions recovered by restoring livelihoods and incomes that approached the regional minimum wage, social conditions recovered as indicated by normal access to health, access to education and the return of social groups and the resolution of the 7 pillars of Cianjur culture. The conclusion is that the implementation of build-back better activities can be done well through cooperation between the central government, local governments and other stakeholders.

Keywords: Practical Framework, Build-Back Better, Post Earthquake Disaster.

Introduction

The concept of build-back better is actually emphasized in the reconstruction stage, so that the recovery process can run well according to the needs of the community affected by the disaster³. The concept and practical framework of build-back better were emphasized by The United Nations in 2004 following the severe impact of the disaster on the environment caused by the devastating 2004 Indian Ocean Tsunami^{1,21}.

The negative impact of the disaster also hit the community's houses and large buildings and infrastructure in Indonesia during the last decade⁹. The impact that disrupts social and

economic activities is also felt after the disaster, especially marked by the loss of livelihoods for most of the community¹³.

One way to restore hope in communities is to build back better through reconstruction to achieve sustainable development. The United Nations Office for Disaster Risk Reduction^{24,25}, building back better includes: (a) utilizing the recovery, rehabilitation and reconstruction phases after a disaster (b) enhancing the resilience of nations and communities through the integration of disaster risk management (c) mitigating the negative impacts of restoring physical infrastructure and community systems and (d) revitalizing livelihoods, economies and the environment.

There is a global consensus for housing to build back better, after disasters on the built environment and resource support for reconstruction worldwide, although the handling of post-disaster housing reconstruction projects often leaves much to be desired¹. Government assistance is also needed in providing funding and providing a classification of building materials to withstand another earthquake. This is useful in supporting the current global framework guiding disaster risk reduction. The Sendai Framework for Disaster Risk Reduction (SFDRR) (2015–2030) emphasizes the need to enhance disaster preparedness for effective response and to build back better in recovery, rehabilitation and reconstruction^{9,16}.

In this research on earthquake disasters in Cianjur, building back better also refers to the post-disaster recovery process that offers communities, stronger infrastructure, better homes, better livelihoods and better systems and services, sometimes in surplus, compared to what was lost in a disaster event. The building back better approach is also expected to be a solace for the people of Cianjur Regency as part of the post-earthquake recovery process. Research suggests that better rebuilding activities must be present at all levels of the disaster recovery process during reconstruction, starting with the affected communities, through stakeholders responsible for managing the disaster. In line with this view, the Sendai Framework for Disaster Risk Reduction advocates effective disaster risk reduction at the national and local levels, with a strong institutional basis for implementation²⁶.

Disaster management activities during the recovery phase are the involving rehabilitation and reconstruction activities⁷. The main activity in the recovery phase is to

restore the condition of the community from deprivation to pre-disaster conditions. Recovery is also an activity to restore health, lost assets, livelihoods and social, economic, environmental and cultural activities towards better recovery towards sustainable development^{1,24}.

Rebuilding activities have been carried out by local Governments with assistance from the Ministry of Public Works and Housing so that recovery can be carried out quickly. All funds and construction workers have been provided in stages. However, in the implementation in the field, there is a mismatch between the wishes of the Government and the wishes of the community, so there are obstacles in implementing the use of budget allocations between housing reconstruction needs and other community needs.

The main objective in the post-disaster recovery stage is that people's lives can recover to near pre-disaster conditions in terms of reconstruction and social and economic life. Therefore, the study aims to analyze how far the implementation of post-earthquake disaster recovery is going to build back better in Cianjur district, West Java province, Indonesia.

Material and Methods

The research method used is qualitative with a descriptive design which is expected to be able to analyze the steps of implementing disaster recovery with the build back better principle which includes reconstruction and socio-economics of the Cianjur district community²³. Data collection was taken from 12 respondents starting from 3 LDMA heads and staff, 2 sub-district heads, 3 village heads and 5 communities using in-depth interviews, field observations and documentation¹⁸. Data analysis in the study includes data collection, data condensation, data display and drawing conclusions¹⁷.

Results and Discussion

The results of the analysis of the recovery phase activities are explained according to what the community and Government want^{12,24}. However, researchers adjust to the prominent realities that have been and are being implemented by the central Government, in this case, the Ministry of Public Works and Public Housing with local governments and selected contractors. For this reason, the structure of the explanation is the achievement of reconstruction of houses and offices followed by the economic and social recovery activities of the Cianjur Regency community.

a. Reconstruction Activities of Houses and Offices and Infrastructure: The concept of rebuilding better than experts expect is a process that includes recovery, rehabilitation and reconstruction after a disaster, to increase national resilience and community resilience through the reconstruction of physical buildings such as houses, buildings and physical infrastructure facilities. In addition, it

is also necessary to revitalize people's lives such as getting a livelihood, social and economic conditions and the environment^{9,10}. All of these activities are strategies to achieve sustainable development (SDGs) of the 17 sustainable development goals in this study, they support communities that are free from poverty and hunger and safe from the worst impacts of climate change^{1,13}. This study focused on the post-earthquake recovery phase in Cianjur Regency, West Java Province, Indonesia.

The researchers assessed that the implementation of recovery activities carried out by the central and regional Governments was very fast and effective. The implementation of reconstruction activities was carried out for the reconstruction of school buildings, vital offices such as sub-district and village offices, district security offices for the military and police, post and telecommunications offices, electricity offices and regional water companies, public health centers and places of worship. The reconstruction of vital offices had no obstacles at all in its implementation. This can be proven by the reconstruction of vital buildings and offices that can be carried out for 3 months.

However, the Government's hard work is the reconstruction of people's homes. According to records from the Disaster Management National Agency (DMNA), until December 12, 2022, identifying the number of damaged Cugenang sub-district, there were 56,480 damaged houses, consisting of 13,633 severely damaged, 16,059 moderately damaged and 26,856 lightly damaged⁷. There are 12 sub-districts affected by the earthquake, namely Cugenang, Pacet, Sukaresmi, Sukaluyu, Karangtengah, Cianjur, Cilaku, Warungkondang, Gekbrong, Cibeber, Bojongpicung and Cikalongkulon. Those who received assistance for house reconstruction were the most severely affected Cugenang sub-district, Karangtengah sub-district, Pacet sub-district and Cilaku sub-district²⁰.

After coordinating with various parties, finally, the Central Government of Indonesian²⁰ through the Coordinating Ministry for Human Development and Culture determined the amount of stimulus assistance for repairing heavily, moderately and lightly damaged houses affected by the earthquake in Cianjur, namely severely damaged 60 million rupiah, moderately damaged 30 million rupiah and lightly damaged 15 million rupiah. The Central Government also determined the procedure for the stages of rebuilding houses through a 4-stage scenario, namely the first stage for assistance for the construction of 8,316 housing units, the second stage for the construction of 16,745 housing units, the third stage for assistance for the construction of 9,650 housing units and the fourth stage for assistance for the construction of 37,000 housing units completed on February 1, 2024.

One of the good government actions is to determine the relocation of one village to another where the village is passed by the Cimandiri Cesar. Based on the survey

conducted to find prospective relocation, land must meet the requirements that have been set. The survey team will conduct careful land observations, then take data and field inspections, then conduct engineering geology analysis, groundwater or hydrogeology analysis and environmental geology analysis with supporting equipment such as software, modeling analysis, geoelectricity and mapping drones.

With the approval of the central government and the Cianjur district government, it was finally decided to acquire the first location in Sirnagalih Village, Cilaku, covering an area of 2.5 ha which will be built with 200 houses and the second location in Mulyasari Village, Mande district which will be built with 151 units on an area of 1.9 Ha and the rest will be placed on Government land in Pacet district. From the results of the field survey, researchers found that the residents were taken from Nagrak village, Cugenang sub-district, Cianjur regency, especially the Rawacina village, 200 heads of families were moved. Meanwhile, the relocation of 151 heads of families in Mulyasari village, Mande sub-district came from Sarampad village and Mangunkerta village, Cugenang sub-district, Cianjur regency.

Researchers obtained evidence that the implementation of the reconstruction of buildings and offices used for the public was completed within six months. The reconstruction of residents' houses until the researchers arrived at the location in Cugenang and Karangtengah sub-districts was still ongoing, while in other sub-districts such as Pacet, Cilaku and Cipanas, it had been completed and occupied by residents. These results show that there is a strong commitment from the Government to revive the spirit of the community to live again quickly. This will foster a high sense of trust from the community that the Government always supports and involves its community to follow sustainable development properly²⁶.

One of the keys to the success of the central and regional Governments in carrying out better rebuilding in the reconstruction phase for Government buildings and community houses is to involve agencies from the Indonesian National Army. The involvement of the Indonesian National Army began from (a) during the emergency phase to supervise and assist in the distribution of food and clothing aid and provide medical assistance, evacuation of victims and goods, resolution of minor conflicts between refugees and donors and (b) the rehabilitation and reconstruction phase such as surveys for selecting relocation sites, determining heavy, medium and light category houses, supervising the selection of building materials to comply with the specifications for earthquake-resistant houses and implementing renovations to the construction of government buildings and community houses.

The involvement of other agencies such as the Indonesian National Army means that the central and regional

Governments are able to empower their potential for the good of the community while demonstrating good managerial skills. The involvement of other agencies will foster trust in related agencies and will foster an attitude of mutual ownership so that they are willing to work together and bring out their best abilities to help for the good and welfare of the community in the Cianjur district. The participation of other communities will facilitate the achievement of build-back better activities because they help sincerely without coercion^{13,14}.

This evidence of Government performance shows that the Government has failed to overcome the negative impacts of the earthquake disaster, especially in the reconstruction phase^{5,7,10}. There is a further effect of good reconstruction which will reduce the vulnerability of the community to earthquake disasters in the future^{16,19}.

b. Community Economic Improvement Activities: The term economic resilience includes infrastructure improvement activities and employment policies, markets, capital assistance, livelihoods and the creative economy²⁶. To support economic conditions, each resident must have a livelihood. Almost 80% of the Cianjur district community works as farmers in rice fields and gardens and they have controlled for generations, so it is very effective². For this reason, the Cianjur district Government still provides opportunities for residents who want to farm in rice fields and gardens affected by the disaster with strict supervision. It is understandable that finding new jobs that do not match the passion of the community, is very difficult. This means that the experience factor of farmers and traders in Cianjur will result in being able to work quickly according to their responsibilities⁶.

Relocated residents in Sinargalih village are also still working as farmers in Nagrak village to grow vegetables and other horticulture. The income of earthquake victims in 4 sub-districts surveyed by researchers shows that they can meet the needs of their children's school, buy food and clothing and pay for electricity and water. However, they are unable to buy secondary needs such as motorbikes and cars. In other words, their income is still around the regional minimum wage of Cianjur district.

The economic conditions that are still seen to be good are traders who sell various daily necessities and those who sell food and drinks as well as vegetable, fruit and flower traders who sell outside Cianjur Regency. As for the small group of people who seek work outside Cianjur Regency, they are able to maintain their income above the average regional minimum wage. The group of traders and workers outside Cianjur Regency have incomes above the average regional minimum wage, so that the ability of both groups is still able to meet primary and secondary needs^{8,10}.

Rebuilding infrastructure at locations affected by the earthquake was actually not too badly damaged, so the local

Government immediately repaired it. Even the condition of the infrastructure, especially roads, has been able to return to normal for 3 months after the earthquake. The infrastructure recovered quickly so that it supports the implementation of house surveys and the distribution of building material assistance to the affected villages.

In general, the economic conditions recovered quickly even though the position in terms of income between community groups was not the same. However, researchers found that the economic conditions were heading towards an increase and did not interfere with the activities of some people. It is proven that by moving the location of health services, their children's education can quickly return to normal and their daily needs can begin to be met.

c. Activities to improve Community Social Conditions:

Social factors that influence social resilience are the existence of social organizations that care about the community environment related to access to work, access to education and access to health^{8,26}. Government policy factors in the social sector to empower the demographic characteristics of the community and resources to help improve the economic resilience of the community⁵. In this study, the discussion of social conditions includes: a) social and cultural capacity such as social safety nets for health, education, the function of Government organizations and community organizations such as farmer groups, study groups, business groups, cultural groups and donor groups²¹ and b) cultural promotion culture²⁶.

The social safety net for health can be completed by showing the approval of the Regent of Cianjur Regency that the head of the family card has moved from the old address to the new address in the relocation village. Even the Cianjur regional Government will facilitate earthquake victims as poor people who are free in financing their social health insurance. For disaster victims who still feel trauma healing, the Commander of the Disaster Management Task Force (Regiment Command 061/SK Kodam III/Siliwangi) has coordinated with various universities and social organizations to provide treatment and therapy in tents and community health centers in each village and sub-district. Finally, the problem of trauma healing can be resolved quickly.

The implementation of education during the earthquake was stopped for 2 weeks because they had to wait for the series of earthquake vibrations to stop completely. After that, the implementation of school for elementary and secondary schools was carried out in temporary housing in the form of large tents that were set up near the victims' homes for 4 months while waiting for the completion of the repair of the school building. The teachers came down to teach and were assisted by volunteers from State and private universities. In the eighth month after the earthquake, the school building was ready to be used again so that the implementation of education could run normally again. Community

organization groups after 4 months after the earthquake were active again, such as religious studies at the mosque, farmer groups assisted by agricultural extension officers were active after 6 months after the disaster. Traditional traders and craftsmen groups were actively doing their work even with insufficient capital. The grocery and vegetable traders groups were the strongest to survive because the goods were needed by the community. The collaboration of farmers and vegetable traders outside Jabotabek was able to prove that agriculture is indeed the main area for obtaining significant income.

Cultural promotion of the 7 pillars as a form of local wisdom of the Cianjur community was tested by the earthquake disaster. The 7 pillars of Cianjur culture that were tested were:

(1) Maos or the first culture that is the principle of the Cianjur community that prioritizes learning, both learning religion and learning to live a better life. The foundation of this learning culture is still strong, as evidenced by the existence of village youth volunteers who are willing to become disaster agents. The activities carried out are introducing how to mitigate disasters, conducting preparedness training activities, how to divide family roles in disaster conditions and how to become a disaster-resilient village. This culture is still running well.

(2) Mamaos or tembang cianjuran is the art of singing songs that are sung and usually accompanied by a lute. In disaster conditions, it is used as a means of communication to collect disaster problems and ways to solve problems. Researchers apply the habit of gathering in village discussions to accommodate complaints, both emergency data and rehabilitation and reconstruction. This culture is still going well.

(3) Maenpo or pencak silat is a martial art native to Cianjur, more precisely Cikalang, which is used as a culture to maintain the security of oneself and one's family. The habit of asking for the identity of newcomers during an earthquake is still carried out well, even assisted by the existence of a disaster management task force team so that there is no conflict with newcomers, especially as donors.

(4) Tatanan or farming, is a characteristic of the Cianjur community who have a livelihood as farmers. This is proven that after the disaster, the agricultural sector is still a mainstay for the Government to maintain regional and community income sources. Even for those who do not have land or gardens, they get income as farmers and laborers in tea and flower companies.

(5) Tanginas are agile and diligent in worship and work. Although there was an impression during the earthquake that some people felt desperate because they lost their homes, they finally became diligent again after receiving assistance to repair their homes from the government.

(6) Someah are friendly attitude towards others. This culture experienced a little disruption by some people when providing food and clothing assistance in the first week of the emergency where some of them withheld aid to be placed in their village only. This was immediately resolved by the Indonesian National Army task force so that the distribution of aid could be distributed to all villages affected by the earthquake.

(7) Sauyunan or harmony and mutual cooperation are the characteristics of the Cianjur community. This culture decreased during the reconstruction phase where some people did not want to cooperate or help when the contractors built their houses. This condition could be overcome due to the intervention of the Indonesian National Army who supervised the implementation of the reconstruction to involve homeowners to check the specifications of building materials and the shape of the buildings to ensure that they were in accordance with the provisions.

This finding is in accordance with the findings that people always try to behave because disasters can occur at any time if their character and local culture are touched¹¹.

From the explanation above, it shows that the implementation of build back better in Cianjur district, West Java Province, Indonesia in general which has been implemented, includes building reconstruction, economic conditions and social conditions. This means that the central and regional Governments have implemented sustainable development involving all communities at the lower level^{4,15}. Restoring facilities for community services and community homes and restoring livelihoods are actions that support community resilience so that they are able to face disasters in the future^{19,25}.

Conclusion

This study concludes that the implementation of post-earthquake disaster recovery implementing build back better in Cianjur district, West Java province, Indonesia can be implemented well in terms of reconstruction of public service buildings and community houses in four stages, economic conditions recovering by restoring livelihoods and incomes approaching the regional minimum wage, social conditions recovering as indicated by normal access to health, access to education and the return of social groups and the resolution of the 7 pillars of Cianjur culture.

References

1. Abdulquadri Ade et al, Practice Framework for the Management of Post-Disaster Housing Reconstruction Programmes, *Sustainability*, **3929**, 1-26 (2018)
2. Aditya Purnomo, Moehammad Fathorrazi and Sebastiana Viphindrartin, The Influence of Production Costs, Length of Business, Productivity on the Income of Pondoh Salak Farmers in Pronojiwo Village, Pronojiwo District, Lumajang Regency, *e-Journal Ekonomi Bisnis dan Akuntansi*, **5(1)**, 44-47 (2018)
3. Aitsi-Selmi S. et al, The Sendai Framework for Disaster Risk Reduction: Renewing The Global Commitment To People's Resilience, Health and Well-Being, *International Journal of Disaster Risk Science*, **6(2)**, 164-176 (2015)
4. Conway G.R., Agroecosystems Analysis for Research and Development, Winrock International, Bangkok, Thailand (1981)
5. Cutter S.L., Barnes L., Berry M., Burton C., Evans E., Tate E. and Webb J., A Place-Based Model for Understanding Community Resilience to Natural Disasters, *Journal of Global Environmental Change*, **18**, 598–606 (2008)
6. Dewi Sari et al, The Influence of Economic, Social and Demographic Factors on Women's Contribution to Family Income in the Informal Sector, Melaya District, Jembrana Regency, *Jurnal Piramida*, **12(1)**, 38-47 (2016)
7. Disaster Management National Agency (DMNA), Indonesia Disaster Code: 3203108202211211, Retrieved December 20, 2022 from: <https://dibi.bnph.go.id/xdibi2/read2/59310> (2022)
8. Endarti Ajeng Tias, The Influence of Community Resilience on the Quality of Life in Disaster Prone Areas After the 2014 Kelud Volcano Eruption, Dissertation from the Faculty of Public Health, University of Indonesia (2016)
9. Ernest Dube, Oliver Mtapuri and Jephias Matunhu, Managing Flood Disasters on The Built Environment in The Rural Communities Of Zimbabwe: Lessons Learned, *Jamba*, **10(1)**, 542 (2018)
10. Hansen et al, An Overview of The Challenges For Public Participation in River Basin Management and Planning, *Management of Environmental Quality, International Journal*, **19(1)**, 67-84 (2008)
11. Hidayanto A, Knowledge and Attitudes of Community Preparedness for Flood Disasters, *Journal of Public Health Research and Development*, **4(4)**, 577-586 (2020)
12. Kurniadi Anwar, Analysis of Community Participation Based Approach to Disaster Mitigation Reduction, *Disaster Advances*, **17(2)**, 31-39 (2024)
13. Kurniadi Anwar and Maarif Syamsul, The Prevention Efforts of the Adverse Impact of Abrasion and Tidal Flooding and Effects on the Economic and Social Resilience, *Disaster Advances*, **16(9)**, 1-7 (2023)
14. Lorna P. Victoria, Community-Based Approach to Disaster Mitigation, Regional Workshop on Best Practices in Disaster Mitigation, United Nation Office Disaster Reduced Risk (URNDRR): Asian Disaster Preparedness Center, <https://www.preventionweb.net/publication/community-based-approaches-disaster-mitigation> (2003)
15. Malik Arshid Hussain and Uma Devi Randhi, An advanced GIS based approach for the assessment of coastal inundation in the storm surge region (Krishna District) of Andhra Pradesh, INDIA, *Disaster Advances*, **17(5)**, 34-49 (2024)
16. Michal Lyons, Building Back Better: The Large-Scale Impact of Small-Scale Approaches to Reconstruction, *World Development*, **37(2)**, 385-398 (2009)

17. Miles M., Huberman A.M. and Saldana, Qualitative Data Analysis: A Methods Sourcebook, USA, Sage Publication Inc. (2014)

18. Moleong Lexy, Qualitative Research Methods, Bandung, PT Remaja Rosdakarya (2018)

19. Portal Informasi Indonesia. Acceleration of Reconstruction of the Impact of the Cianjur Earthquake, Retrieved January 2, 2023 from <https://indonesia.go.id/kategori/editorial/6749/percepatan-rekonstruksi-dampak-gempa-cianjur%3Flang%3D1> (2022)

20. Shaw R., Thirty Years Of Science, Technology and Academia In Disaster Risk Reduction And Emerging Responsibilities, *International Journal of Disaster Risk Science*, 11(1), 1-12 (2020)

21. Sofhani, Community Resilience Facing Disaster, Bandung, ITB (2016)

22. Spencer Nekeisha and Polacheck Solomon, Hurricane Watch: Battening Down The Effects Of The Storm On Local Crop Production, *Ecological Economics*, 120(C), 234-240 (2015)

23. Sugiyono, Quantitative, Qualitative and R&D Research Methods, Bandung, Alfabeta (2018)

24. UNDRR, Terminology on Disaster Risk Reduction: Basic Definitions on Disaster Risk Reduction to Promote a Common Understanding on the Subject for Use by the Public, Authorities and Practitioners (2017)

25. UNISDR, Disaster Risk Reduction Terminology, Kuala Lumpur, Asian Disaster Reduction Response Network (ADRRN) (2009)

26. USAID ASIA, How Resilient is Your Coastal Community? A Guide for Evaluating Coastal Community Resilience to Tsunamis and Other Hazards, Bangkok, USAID ASIA (2007).

(Received 09th January 2025, accepted 07th March 2025)