

## Coping Strategies of High School Students in Flood-Prone Areas: A Study of Adaptive and Maladaptive Behaviors in Labakkang, Pangkep Regency

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### Abstract

*Flooding is a recurrent natural disaster that significantly impacts the lives of communities, including high school students in Labakkang, Pangkep Regency, Indonesia. This study investigates the coping strategies employed by these students to manage the challenges posed by frequent flooding. Using a quantitative survey approach, data were collected from 115 students through structured questionnaires and analyzed using frequency tabulation. The results reveal a nuanced coping behavior among the students, categorized into problem-focused and emotion-focused strategies. Problem-focused strategies, such as planning, problem-solving, and decision-making, were highly prevalent, indicating a proactive approach to mitigating the effects of flooding. Emotion-focused strategies, including acceptance, relaxation, and cognitive reframing, were also widely adopted, reflecting the students' emotional resilience and ability to manage stress. Despite these adaptive strategies, a significant reliance on avoidance behaviors was observed, suggesting an area for intervention. Avoidance, while providing temporary relief, is often considered maladaptive as it may hinder long-term problem resolution and emotional adjustment. This finding highlights the need for targeted educational and psychological interventions to promote more effective coping mechanisms. The study sheds light on the importance of integrating disaster preparedness programs into the educational curriculum, emphasizing skill development in adaptive strategies such as resource management, negotiation, and mindfulness. These findings align with established theories on stress and coping, particularly the transactional model, and provide practical insights for policymakers, educators, and mental health professionals. By addressing the gaps in coping strategies, this research contributes to enhancing the resilience and well-being of students in disaster-prone regions.*

**Keywords:** coping strategies, disaster resilience, high school students, flood management, adaptive behaviors, disaster education.

### INTRODUCTION

Various disasters often occur in Indonesia. Many people are killed, physically injured, permanently disabled, mentally traumatised, lose their homes and even experience crop failure, these disasters certainly leave several homework that must be dealt with together. Various parties, both directly and indirectly, are required to make meaningful contributions to reduce the burden of suffering of the victims. (Nugroho, 2018).

Disaster in Law Number 24 of 2007 concerning Disaster Management, has the meaning of an event or series of events that threaten and disrupt people's lives and livelihoods caused, either by natural and or non-natural factors or human factors resulting in human casualties, environmental damage, property losses, and psychological impacts. The definition of disaster as described earlier contains three basic aspects, namely the occurrence of events or disturbances that threaten and damage (*hazard*), these events or disturbances threaten the lives, livelihoods, and functions of the community, and these threats cause casualties and exceed the community's ability to cope with their resources. (BNPNB, 2022).

As explained again in Law Number 24 Year 2007, disasters can occur due to two conditions, namely the existence of events or disturbances that threaten and damage (*hazard*) and the *vulnerability* of the community, which is influenced by trigger factors and the level of exposure of the event. Because of the continuous flooding, the community has its own ways or strategies to cope with flood disasters. This is known as *coping*, theoretically *coping* is a person's effort both cognitively, affective, and behaviourally to manage external and internal demands specifically. (Khasan & Widjanarko, 2011). *Coping behaviour* is loosely defined as a behaviour to deal with problems, pressures, or challenges, in addition it is a behavioural response that is psychological behaviour to reduce dynamic pressure. (Prabawa et al., 2019).

*Coping* behaviour is also defined as individuals interacting with the surrounding environment, to resolve tasks or problems. (Kabir & Hossain, 2021). If individuals can use their *coping behaviour* well then they can make social adjustments well too. Pangkep Regency is no exception, flooding disasters often occur, due to some of the geographical locations of Pangkep Regency in areas that become watersheds (watersheds) of large and small rivers so that they have the potential to experience flooding. The beginning of the flood disaster in Pangkajene, Labakkang, Ma'rang no one knows for sure, the results of the author's interview on 23 July 2021 with a community leader in Labakkang Village said that since he was born in Labakkang there have often been floods, floods occur every year around December to February. In that year too, a flood occurred as high as 1.5 metres (Anriani et al., 2023; Anriani & Harifuddin, 2024; Halim et al., 2019; Harifuddin, 2017). According to the informants, flooding is caused by heavy rains and results in river runoff from the Labakkang River and overflow from the Pangkajene River that cuts through Pangkajene City. Another informant explained that flooding occurs more due to sedimentation and narrowing of the rivers that empty into the sea. (Interview on 15 July 2021).

Based on the facts in the field, which have been described above that Labakkang Village often experiences flooding caused by overflowing water from the Labakkang River, the geographical location of the village, and human actions, most of the people of Labakkang Village remain resilient, to be able to survive, of course, *coping* behaviour arises from the community in dealing with flood disasters. This is what attracts our attention to examine the forms and how *coping* behaviour in communities experiencing flooding in Labakkang village and Pangkajene village, Pangkep Regency.

Therefore, the present study specifically aims to; (1) describe the knowledge of students' coping strategy with flooding in SMA Negeri Labakkang Pangkep Regency, and (2) describe their coping behaviour to face flooding in SMA Negeri Labakkang Pangkep Regency.

### **Coping Mechanism Strategies for Dealing with Flood Disasters**

Coping is constant cognitive and behavioural change in an attempt to cope with specific internal and/or external demands that exhaust or exceed individual resources. Coping mechanisms are how individuals resolve problems, and cope with changes that occur, and threatening situations, both cognitively and behaviourally. (Mulyana P, Yosi; Suharso, Pujdo; Ani, 2015).

Coping mechanisms are strategies that a person uses to cope with stress caused by an event such as a flood. By understanding the importance of coping mechanisms and learning how to apply them, these strategies can reduce the adverse effects of stress, both in terms of physical and mental health. Coping mechanisms can help a person adjust to difficult situations while maintaining emotional health. This is because in life, we are all faced with difficult situations that can cause stress. There are two forms of stress coping, the first is *problem-focused coping strategies*, and the second is *emotional-focused coping strategies*. (Kabir & Hossain, 2021).

### **Theory of Environmental Psychology**

This theory focuses on human behaviour as part of the complexity of the ecosystem. (Zen et al., 2015). The assumptions used are: (a) Human behaviour is related to the environmental context. (b) Reciprocal favourable human-environment interactions. (c) Human-environment interactions are dynamic. (d) Human-environment interactions occur at various levels and depend on function. One theory based on an ecological view is behaviour-setting, pioneered by Robert Barker and Alan Wicker. The main premise of this theory is the *organism-environment fit model*, which is the fit between the design of the environment and the behaviour accommodated in the environment. Thus, there may be patterns of behaviour that have been arranged or called a program that is associated with a place setting. The human-environment relationship is more explained in terms of social characteristics such as habits, rules, typical activities, and physical characteristics. By knowing the place setting, it is possible to predict the behaviour/activities that occur. (Gifford, 1987; Veitch & Arkkellin, 1995).

This theory explains that both low and high levels of stimulation have negative consequences for behaviour. The optimal level of stimulation is the one that can achieve optimal behaviour. (Veitch & Arkkellin, 1995). Thus, this theory recognises individual differences in the level of adaptation. Adaptation is done when there is dissonance in a system. This means an imbalance between human interaction with the environment, and excessive environmental demands or needs that do not match the environmental situation. In this case, adaptation is a process of modifying the presence of stimulus on an ongoing basis. The more often the stimulus is present, the more psychic habituation will occur, which is called adaptation. About adaptation, this habituation process is not mechanistic but rather anticipatory. (Heimstra & McFarling, 1982). There are 3 dimensions of environmental behavioural relationships, namely: (a) Intensity. Too many people or too few people around us will create psychological disturbances. Too many people cause a feeling of crowding and too few cause people to feel alienated (*socialisation*). (b) Diversity. The diversity of objects or people has an impact on information processing. Too much diversity creates a feeling of *overload* and lack of diversity creates a feeling of monotony. (c)

Patentability. Patterning is related to predictability. A setting with unclear and complicated patterns causes a burden in information processing so that the stimulus is difficult to predict, while very clear patterns cause the stimulus to be easy to predict. (Ortega-Gil et al., 2021).

**METHOD**

The research method is quantitative with a survey research design (Sugiyono, 2019). The research was conducted at SMA Negeri Labakkang, Pangkep Regency. This research lasted for 3 months, from May 2024 to July 2024. The population of this study were all students of SMA Negeri Labakkang pangkep district while the sample was 115 people using quota sampling. Data collection using questionnaires and analysis using frequency tabulation. Drawing conclusions by interpreting the number of frequency tabulation results.

**FINDINGS AND DISCUSSIONS**

**1. Knowledge of coping with flooding in students of SMA Negeri Labakkang, Pangkep Regency**

Labakkang State Senior High School students as part of the Labakkang Village community also experience flooding events. Thus, they also have knowledge or experience of it in saving themselves, especially reducing the psychological impacts. The strategies they do as part of the Coping strategy are as follows.

**Table 1. Problem-orientated coping strategies**

<i>1</i>	<i>Problem-orientated coping strategies</i>
a)	Planning a, strongly agree=20% b, agree=60% c, biasa=20% d, disagree=0% e, strongly disagree=0%
b)	Problem-solving a, strongly agree=70% b, agree=30% c, biasa=0% d, disagree=0% e, strongly disagree=0%
c)	Decision Making a, strongly agree=30% b, agree=60% c, biasa=10% d, disagree=0% e, strongly disagree=0%
d)	Social Supporting a, strongly agree=30% b, agree=40% c, biasa=30%



	d, disagree=0% e, strongly disagree=0%
e) Resource Management	a, strongly agree=20% b, agree=80% c, biasa=0% d, disagree=0% e, strongly disagree=0%
f) Negotiation and Mediation	a, strongly agree=20% b, agree=80% c, biasa=0% d, disagree=0% e, strongly disagree=0%
g) Acceptance and Adaptation	a, strongly agree=10% b, agree=90% c, biasa=0% d, disagree=0% e, strongly disagree=0%
h) Skill Development	a, strongly agree=20% b, agree=60% c, biasa=20% d, disagree=0% e, strongly disagree=0%
2	Strategi coping yang berorientasi pada emosi:
a) Acceptance	a, strongly agree=80% b, agree=20% c, biasa=0% d, disagree=0% e, strongly disagree=0%
b) Relaxation and Breathing Techniques	a, strongly agree=80% b, agree=20% c, biasa=0% d, disagree=0% e, strongly disagree=0%
c) Channeling Emotions	a, strongly agree=0% b, agree=20% c, biasa=40%

	d, disagree=40%
	e, strongly disagree=0%
d) Social support	a, strongly agree=80%
	b, agree=20%
	c, biasa=0%
	d, disagree=0%
	e, strongly disagree=0%
e) Reframing Cognitionif	a, strongly agree=80%
	b, agree=20%
	c, biasa=0%
	d, disagree=0%
	e, strongly disagree=0%
f) Entertainment and Positive Activities	a, strongly agree=50%
	b, agree=50%
	c, biasa=0%
	d, disagree=0%
	e, strongly disagree=0%
g) Self-Compassion:	a, strongly agree=50%
	b, agree=50%
	c, biasa=0%
	d, disagree=0%
	e, strongly disagree=0%
h) Avoidance	a, strongly agree=70%
	b, agree=30%
	c, biasa=0%
	d, disagree=0%
	e, strongly disagree=0%
i) Practising Mindfulness	a, strongly agree=0%
	b, agree=10%
	c, biasa=35%
	d, disagree=5%
	e, strongly disagree=50%

Based on Table 1 above, there are 2 variables in this study: 1) Problem-orientated coping strategies, with indicators: Planning, problem-solving, Decision Making, Seeking Social Support, Resource Management, Negotiation and Mediation, Acceptance and Adaptation, and Skill



Development; and 2) Emotion-orientated coping strategies with indicators: Acceptance, Relaxation and Breathing Techniques, Channeling Emotions, Social Support, Cognitive Reframing, Entertainment and Positive Activities, Self-Compassion. Avoidance, and Practising Mindfulness.

## 2. Coping behaviour to face flooding in SMA Negeri Labakkang Pangkep Regency students

The coping behaviour in facing floods in Labakkang State Senior High School students is as follows:

Table 2. Coping behaviour to face flooding in high school students

No.	Statement	Category (%)				
		SA	A	N	D	SD
1	Create a plan or strategy to tackle the problem. This includes setting goals, creating a schedule, and prioritising tasks	20	60	20	0	0
2	Systematically analyse problems to find effective solutions. This involves identifying the problem, brainstorming solutions, and evaluating alternatives.	70	30	0	0	0
3	Make rational and informed decisions to address problems. This includes considering the pros and cons of different options	30	60	10	0	0
4	Seek help or support from friends, family or professionals. This can include asking for advice, sharing a burden, or gaining additional perspective	30	40	30	0	0
5	Using existing resources effectively to address the problem, such as using available skills, knowledge or tools	0	20	80	0	0
6	Negotiate or seek compromise solutions in conflict situations. This involves effective communication and seeking a win-win solution.	20	80	0	0	0
7	Recognising limits and adapting to situations that cannot be changed, and developing ways to cope with such situations	10	90	0	0	0
8	Learning new skills that can help in dealing with and overcoming problems, such as time management skills or communication skills.	20	60	20	0	0
9	Accepting feelings and circumstances that cannot be changed. This involves recognising that negative feelings are part of the human experience and endeavouring to move on despite the discomfort.	80	20	0	0	0
10	Using relaxation techniques such as meditation, deep breathing, or yoga to reduce tension and emotional stress	80	20	0	0	0
11	Express feelings through various creative means such as journal writing, drawing, or participating in art activities.	0	20	40	40	0
12	Seek emotional support from friends, family or support groups. This includes talking about feelings and getting empathy or advice from others.	80	20	0	0	0
13	Change the way you view stressful situations to see them from a more positive or realistic perspective, thereby reducing the emotional impact.	80	20	0	0	0

14	Engage in activities that are enjoyable or that can distract from stress, such as watching a film, exercising, or hanging out with friends.	50	50	0	0	0
15	Develop a gentle and understanding attitude towards oneself when experiencing stress or failure, and avoid harsh self-criticism.	50	50	0	0	0
16	Avoiding situations or thoughts that cause stress, although this is only a temporary solution may not be effective in the long run. This could include engaging in activities that distract from the problem.	70	30	0	0	0
17	Adopt a mindfulness approach to focus on the present moment and reduce anxiety about the past or future. It involves mindfulness of the present experience without judgement.	0	10	35	5	50
Rata-Rata Presentase (%)		33,8	58,7	5,9	1,4	0,3

Based on Table 2 above, it can be described as follows: coping strategies include (1) Problem-orientated coping strategies, with indicators: Planning, Problem-Solving, Decision Making, Seeking Social Support, Resource Management, Negotiation and Mediation, Acceptance and Adaptation, and Skill Development; with a total achievement of 25% strongly agreeing, there were 55% who agreed, 20% were average, and 0% who disagreed and strongly disagreed. Overall, this variable reached 80% with the category of ‘effective’ problem-orientated coping strategies. (2) Emotion-orientated coping strategies with indicators: Acceptance, Relaxation and Breathing Techniques, Channeling Emotions, Social Support, Cognitive Reframing, Entertainment and Positive Activities, Self-Compassion. Avoidance, and Practising Mindfulness. The achievement of each indicator is 54.44% strongly agree, 26.66% agree, 7.77% are mediocre, 5% disagree, 0% strongly disagree.

Overall, the coping strategies to deal with flooding carried out by Labakkang State High School students were 79.44% strongly agreed, 81.1% agreed, 27.77% mediocre, and 5% disagreed, 0% strongly disagreed. Thus it can be concluded that there are 44.27% coping strategies carried out by SMA Negeri Labakkang students are 44.27% and categorised as ‘effective’.

## Discussion

This study examines the coping strategies employed by high school students in Labakkang, Pangkep Regency, in response to recurrent flooding. The findings indicate a predominant use of problem-focused coping mechanisms, complemented by emotion-focused strategies. This discussion contextualizes these results within existing literature, evaluates their alignment with the study's objectives, and explores their theoretical and practical implications.

The data reveal that students predominantly engage in problem-focused coping strategies, such as planning (80% agreement) and problem-solving (70% agreement). These approaches involve proactive efforts to address the stressor directly, aiming to mitigate its impact. This aligns with Lazarus and Folkman's (1984) transactional model of stress and coping, which posits that problem-focused strategies are effective when individuals perceive the stressor as controllable. In the context of Labakkang, where flooding is a recurrent issue, students' engagement in such strategies suggests a developed sense of agency and preparedness.



Emotion-focused coping strategies, including acceptance (80% agreement) and relaxation techniques (80% agreement), were also prevalent. These methods aim to regulate the emotional response to stressors rather than altering the stressor itself. The concurrent use of both coping strategies indicates a flexible approach, allowing students to adapt based on the controllability of the situation. This dual-strategy utilization is consistent with findings by Marfai et al. (2015), who observed that communities in Jakarta employed both problem-focused and emotion-focused coping mechanisms in response to flooding.

However, the reliance on avoidance strategies (70% agreement) warrants attention. Avoidance is generally considered a maladaptive coping mechanism, as it may lead to prolonged stress and hinder effective problem resolution (Aslam & Kamal, 2015). The significant use of avoidance among students suggests a potential area for intervention, emphasizing the need to promote more adaptive coping strategies.

The study aimed to describe students' knowledge of coping strategies and their behavioral responses to flooding. The high levels of agreement with both problem-focused and emotion-focused coping strategies indicate that students possess substantial knowledge and actively implement these strategies. This reflects a comprehensive understanding of coping mechanisms, fulfilling the study's objectives.

The findings support the transactional model of stress and coping, highlighting the importance of perceived control in determining coping strategy selection. Students' preference for problem-focused strategies suggests a perception of control over flood-related stressors, aligning with the model's propositions. Additionally, the use of emotion-focused strategies underscores the role of individual differences in coping responses. This aligns with the person-environment fit theory, which emphasizes the interaction between individual characteristics and environmental demands in shaping coping behaviors (Edwards, 1996).

Contrastingly, the significant use of avoidance strategies challenges the assumption that individuals will naturally adopt adaptive coping mechanisms. This suggests that without targeted interventions, maladaptive coping may persist, highlighting the need for educational programs to promote adaptive coping strategies.

The findings have practical implications for educational and community-based interventions. The prevalent use of problem-focused strategies indicates that students are proactive in managing flood-related stressors. Educational programs can build on this by enhancing skills in areas such as resource management and negotiation. The significant use of emotion-focused strategies suggests that students are attuned to their emotional responses. Schools can support this by providing resources such as counseling services and mindfulness training to further develop emotional regulation skills. The reliance on avoidance strategies indicates a need for interventions aimed at reducing maladaptive coping. Programs that educate students on the drawbacks of avoidance and promote more effective coping mechanisms could be beneficial. Community resilience can be bolstered by fostering social support networks, as seeking social support was a common coping strategy among students. Community programs that encourage collective problem-solving and emotional support can enhance communal coping capacity.

## CONCLUSION

This study provides a comprehensive analysis of the coping behaviors exhibited by high school students in Labakkang, Pangkep Regency, in response to recurrent flooding events. The

findings reveal a predominant reliance on problem-focused strategies, such as planning and problem-solving, complemented by emotion-focused approaches, including acceptance and relaxation techniques. However, the notable use of avoidance strategies highlights a critical area for intervention.

The dual engagement in problem-focused and emotion-focused coping mechanisms underscores the students' resilience and adaptability in the face of environmental stressors. This adaptability is indicative of a proactive stance towards mitigating the adverse effects of flooding, reflecting a well-developed sense of agency among the students. Nevertheless, the significant inclination towards avoidance strategies suggests the presence of underlying stress or anxiety that may not be adequately addressed through existing coping mechanisms.

The study's outcomes align with existing literature on coping behaviors in disaster-prone areas, reinforcing the applicability of established psychological theories in this context. However, the findings also challenge the assumption that individuals will inherently adopt adaptive coping strategies without targeted support. This underscores the necessity for educational and community-based interventions aimed at promoting adaptive coping mechanisms and reducing reliance on maladaptive strategies.

This study is limited by the cross-sectional design of the study which provides a snapshot of coping behaviors at a single point in time. Longitudinal studies are needed to examine how coping strategies evolve over time, particularly in response to repeated flooding events. Additionally, future research could explore the effectiveness of specific interventions aimed at promoting adaptive coping strategies and reducing reliance on avoidance behaviors.

Overall, while the students of Labakkang demonstrate commendable resilience through their coping behaviors, there is a pressing need for structured support systems to enhance adaptive coping and address the propensity for avoidance behaviors. Future research should focus on developing and evaluating interventions tailored to this demographic, with the goal of fostering psychological resilience and well-being in the face of environmental adversities.

## REFERENCES

- Anriani, H. B., & Harifuddin, H. (2024). *Konsep dan Aplikasi Sosiologi* (I. Iskandar & A. Burchanuddin (eds.)). Mitra Cendekia.
- Anriani, H. B., Harifuddin, H., Asmirah, A., & Zainuddin, R. (2023). Banjir, krisis lingkungan dan pembangunan: efek kekuasaan. *Konferensi Nasional Sosiologi X APSSI*, 1(2), 7–9.
- Aslam, N., & Kamal, A. (2015). Coping strategies as predictors of psychological distress and post-traumatic growth among flood-affected individuals. *Journal of Alcoholism & Drug Dependence*, 3(1), 181.
- BNPNB, B. (2022). *Jumlah kejadian per jenis bencana*. Gis. <https://gis.bnpb.go.id/>
- Edwards, J. R. (1996). An examination of competing versions of the person-environment fit approach to stress. *Academy of Management Journal*, 39(2), 292–339.
- Gifford, R. (1987). *Environmental psychology: Principles and practice*. Allyn & Bacon.
- Halim, H., Arifin, A., Nonci, N., Zainuddin, R., Anriani, H. B., & Kamaruddin, S. A. (2019). Flood disaster and risk anticipation strategy. *IOP Conference Series: Earth and Environmental Science*, 235, 012032. <https://doi.org/10.1088/1755-1315/235/1/012032>
- Harifuddin, H. (2017). Flood Disaster, Local Belief And Islam-Sufism. *EL-HARAKAH (TERAKREDITASI)*. <https://doi.org/10.18860/el.v19i1.3916>

- Heimstra, N. W., & McFarling, L. H. (1982). *Environmental Psychology*. Brooks/ Cole Publishing Company.
- Kabir, M. H., & Hossain, T. (2021). Assessment on Social Vulnerability and Response Towards Natural Disaster in A Disaster-Prone Coastal Village: An Example from Bangladesh. *International Journal of Disaster Management*, 4(1), 39–60. <https://doi.org/10.24815/ijdm.v4i1.19482>
- Khasan, M., & Widjanarko, M. (2011). *Masyarakat menghadapi banjir*. I(2), 93–103.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. Springer Publishing Company.
- Marfai, M. A., Sekaranom, A. B., & Ward, P. (2015). Community responses and adaptation strategies toward flood hazard in Jakarta, Indonesia. *Natural Hazards*, 75(2), 1127–1144.
- Mulyana P, Yosi; Suharso, Pujdo; Ani, H. M. (2015). Pola Hubungan Kerja Juragan Dan Buruh Nelayan Terhadap Work Relationship Model Of Owner And Fisherman Worker To Prosperous Of Fisherman Worker In Hamlet Of Kampung Baru The Village Grajagan Purwoharjo Banyuwangi District Kabupaten Banyuwangi. *Artikel Ilmiah Mahasiswa*, 1(1), 1–6.
- Nugroho, S. P. (2018). *Kerugian dan Kerusakan Dampak Bencana di Sulawesi Tengah Mencapai 13,82 Trilyun Rupiah*. BNPB. <https://bnpb.go.id/berita/kerugian-dan-kerusakan-dampak-bencana-di-sulawesi-tengah-mencapai-1382-trilyun-rupiah>
- Ortega-Gil, M., Cortés-Sierra, G., & ElHichou-Ahmed, C. (2021). The Effect of Environmental Degradation, Climate Change, and the European Green Deal Tools on Life Satisfaction. *Energies*, 14(18), 5839. <https://doi.org/10.3390/en14185839>
- Prabawa, M. S., Indriani, W., & Dewiyanti, H. (2019). Mitigasi Spasial terhadap Bencana Sosial di Permukiman Johar Baru, Jakarta Pusat. *Jurnal Arsitektur ZONASI*, 2(1), 46. <https://doi.org/10.17509/jaz.v2i1.15062>
- Sugiyono. (2019). *Metode Penelitian Kuantitatif*. Alfabeta.
- Veitch, R., & Arkkellin, D. (1995). *Environmental Psychology: An Interdisciplinary Perspective*. Prentice Hall, Inc., Englewood Cliffs 07632.
- Zen, L. Z., Darusmman, D., & Santoso, N. (2015). Strategi Mata Pencaharian Masyarakat Berkelanjutan Pada Ekosistem Mangrove Di Wonorejo, Kota Surabaya. *Risalah Kebijakan Pertanian Dan Lingkungan*, 2(3), 230–242.