CHAPTER V
CONCLUSION

5.1 Conclusion

The implementation of Action-Oriented ESD approach on food waste topic can improve students' sustainability understanding and action according to the results of pretest and post-test, worksheet, and action journal of the students. This learning approach includes components of action-taking, peer-interaction, and community involvement. The activity provides the students with contextual and meaningful learning experience that help students to be able to solve problems in their surroundings. The findings of the study show that the implementation of the learning on Food Waste topic has an impact on students' sustainability understanding and action.

Sustainability understanding of students assessed through open-ended essay questions and activities during the learning phase. The average score increased by 19.17 points with ($p\ value_{(0.00)} < \alpha_{(0.05)}$), indicating a statistically significant difference between the pretest and post-test. This improvement is further supported by the N-gain score of 0.464, which reflects a moderate gain in students' overall performance. The results suggest that learning with Action-Oriented ESD learning approach have improved students' sustainability understanding, although the improvements did not reach its maximum potential. The learning activities stimulated students to report the strategies and practices to reduce and manage food waste. However, the learning process was affected by several factors, including students' limited engagement to understand the food waste topic, as well as the long gap between the learning phase and final test (post-test). Students' participation, interaction in groups, limited guidance from teacher also contributed the research's outcomes.

On the other hand, students' sustainability action average scores increased by 1.56 points from the pretest to post-test. Moreover, the N-gain score of 0.0438 indicating a low level of gain. This small improvement still showed that the learning

intervention enhances students' overall performance. The hypothesis test presented a statistically significant difference with ($p\ value_{(0.04)} < \alpha_{(0.05)}$). The findings indicate that the Action-Oriented ESD learning approach contributed to an improvement in students' sustainability understanding. The students tended to raise awareness about food waste issues within their surroundings without taking direct action. They also showed a preference for performing direct practical actions connected to their daily habits in order to reduce and manage food waste. However, the overall results did not fully meet expectations, which may be attributed to various influencing factors such as students' consistency in taking action, short implementation duration, community engagement, and teacher's guidance.

Sustainability understanding is closely interconnected with sustainability action, with present and competencies actions being the strongest contributors to overall action. This shows that understanding directly supports action, underscoring the vital role of education in bridging understanding and action for sustainable development.

5.2 Recommendation

According to the research' findings, the implementation of Action-Oriented ESD learning approach needs to be improved. First, the period for forming students' action habit should be pursued in sufficient duration. Second, teacher must guide and monitor students regularly to help them achieve the expected outcomes. Teacher can also support students in broadening their perspective on effective methods for reducing and managing food waste. Lastly, teacher should facilitate a collaborative action with the community to introduce the importance of involving bigger community in implementing action to reduce and manage food waste.