

CHAPTER 5. CONCLUSION

The concept of Extended Producer Responsibility has been tested in Semarang prior to the issuance of the KLHK Regulation No. 75/2019 about the Roadmap on Waste reduction by Producers. The research investigates three multilayer plastic packaging waste initiatives to understand their performance, weakness and strength, and the potential development. The three selected cases are the Green Warmindo Program of Indofood, the Green & Clean Program of Unilever, and the Eco-Bricks Program of Marimas. The research finds and concludes that:

1. The Green & Clean Program collects the highest general waste amount while the Green Warmindo collects the highest waste amount for sepcific. The Green Warmindo has more effective and efficient collection because it selects specific waste, high consumption customers as collection point, has flexible collection system, and reasonable incentive or subsidy compared to the product price.
2. There are 18 resisting factors and nine pushing factors that affect the sustainability and replicability of the waste take-back initiatives. Two out of the 27 factors are considered to have leverage contribution to other factors. The first factor is the change of design and substitution of plastic materials while the second factor is the producer responsibility commitment.
3. Improvement of the current waste take-back mechanism can be focused to change the design and material of multilayer plastic packaging as well as to improve the incentive or subsidy mechanism.

Based on the finding and conclusion above, the research recommended the following:

1. improvement the design and manufacturing to be easier to collect and recycle the multilayer plastic packaging. Promotion of eco-design requirements including changing size, weight, and more recyclable materials must be prioritized.
2. calculation of packaging take-back cost, required incentive, and its distribution need to be improved. The calculation will help to understand the cost to manage different designs and materials as input for the products.

3. a just and fair responsibility must be shared between all stakeholders in the overall product life cycle because a single producer fund is not enough to cover all the cost.
4. foster the collaboration between producers to target the highest waste sources.

This research presents how the EPR implementation is still in the early stage that needs to increase the effectiveness of waste collection and cost-efficiency. The idea of PPR can be considered by improving the design of packaging to be easier to collect and recycle and replace the materials to all plastic layers. The collaboration between producers to target the highest waste source is also a potential improvement that can easily be implemented. The establishment of IPRO will make the collaboration of producers more applicable. However, this research finds limited information about the shared responsibility between stakeholders. Further research is required notably to determine what types of roles and responsibility of consumers and city governments in the EPR context. The calculation of incentive and subsidy to achieve cost-efficient and effective take-back initiative also can be explored further.

Finally, whereas this research takes a strong focus on the direct participating actors, it indicates the need to involve indirect actors such as end consumers and city governments. The role of IPRO which is established in the middle of the research implementation has partially confirmed the research finding and recommendation.