5. CONCLUSION

Based on data from Google, there were more than 90 IP and 92 IH stores spread across Indonesia in 2019. The development of fresh food or fresh processed food in retail industry cannot be separated from the used of plastic as a food container, packaging, and utensils. IP and IH generated 635 and 300 SUP waste items per day. Nowadays people tend to go to the convenience store for having their meals. In terms of weight, more than 3,600kg and 1,700 kg of SUP waste per year were generated by IP and IH, respectively. PET is the most generated SUP waste by both IP and IH, followed by PS, HDPE, PVC, PP, and LDPE. Out of 11 food categories, there were two predominant contributors of SUP waste, i.e., water and tea (others-nonalcoholic beverages), especially for PET, HDPE and PVC. Snacks and sweets contributed the least SUP waste, limited to PET and PP. For LDPE the largest contributor was fruits. Bread, grains, and cereal products were the largest contributors of PP and PS. Coffee is an interesting category since its packaging includes all six types of polymer. In a lesser extent, energy drinks, juices, milk, and tea are packaged with five types of polymers. Three factors that influences the CF values, i.e., weight of the polymer (kg), total number of dine in visitors, conversion coefficient for each type of polymer may influences the CF produced. The largest CF contributor is PET, PS, HDPE, PVC, PP, and LDPE. Weekend results in a higher CF value for IP. In contrast, IH CF values are higher during weekdays. In addition, IP produces 38.9% higher CF than IH. To reduce CF emission 3R principles, including reduce, reuse, and recycle can be applied. Replacement of petroleum-based polymers with bio-based biodegradable polymers such as poly (lactide) acid (PLA) also become one of the other alternative choices. Enhancement the mechanical properties of bio based and biodegradable polymer using coating or incorporating nanomaterials.