

## CHAPTER V

### CONCLUSION AND RECOMMENDATIONS

#### A. Conclusion

The laboratory test results of soil and water the study area was still dominant with mercury (Hg) concentration. Soil pH could be seen acidic to strongly acidic concentration regarded as a result. Average Hg in soil ranging from 0.09 ppm to 0.15 ppm but the Hg component in soil was acceptable where Indonesian Standard was 0.5ppm. Accumulation of Hg in water of the surrounding area of study site was between average ranges of 0.041 ppm - 0.117 ppm in which all the results were remarkably beyond standard guidelines in which National guideline and WHO were 0.001 ppm. While Hg constituents in water was significantly high in each of the water resources (well, pond and river), degradation level of the soil was reasonable amount with Hg concentration.

When analyzing the respondent's understanding based on both sample qualities, almost all the interviewees had not enough knowledge about the Hg introducing diseases. However, some participants were more likely to make a judgement concerned with the soil-Hg relation with the health issues. Moreover, the perception rooted in the low grade of soil and water qualities was confirmed as the positive opinion because of currently consuming.

The total perception on using soil could be regarded as the respondents had optimist idea while doing their agricultural activities. On the other hand, Hg linked with the perception of pond and river water for drinking purposes along with even using in their household chores had far more negative idea than well water. Water is the key source of the Hg contamination conveyed to the environment both in terrestrial and aquatic communities in the study area. That is due to the occurrence of mining activities along the Bantang Ombilin River's bank.

The research has proved that the perception of respondents was agree with consuming Hg accumulated substances in which some respondents had well understanding about the disadvantages of Hg, even such people still required the awareness of Hg pollution for being stop using then taking the action to reduce the contamination.

## B. Recommendations

One of the most important things is rehabilitate the deteriorated land and replantation must be priority because plants are able to eliminate or at least mitigate the Hg concentration by absorption the metals as well as other toxic substances (phytoremediation). The local government and authorities should be legislation about illegal small-scale mining effectively, the systematic waste disposal methods especially handling the heavy metals during the exploration and well-organized rehabilitation plans after termination the mining processes.

Charge a basic rate of taxation depend on the size of projects and or penalties tax on who disregard the laws and regulations. Those funds should be spent on the CSR program in the affected regions along with the restoration the natural habitats as well as introducing the green mining countermeasure to design the sustainable environment, celebrating the event such as biannually or annually educational campaign with the aim of raising the public awareness.

Even though, the research still requires in-depth analysis but hopefully the paper will be partially helped when implementation the policy and regulatory frame-work.

