

CHAPTER 5

Conclusion

The total WF of sugarcane cultivation in Mae Sot District, Tak Province, Thailand for the period of 2011-2012 was calculated as 103 m³/ton including 98 m³/ton of green WF and 0 m³/ton of blue WF and 38 m³/ton of grey WF. The result was more efficiency of water management when compared with other case studies. Various factors lead to cause different amount of water usages as the water footprint. The WF may become different with real one when average or secondary data was using. Therefore, the data collection should be specific in each region as direct interview e.g. weather data from local meteorological station, crop yields, fertilization and type of irrigation. In addition, this results support farmers to get investment information for crop cultivation change from rice to sugarcane for save water usage and health problem.

In order to find out Cd cycle from soil to sugarcane, two sampling sites (control and contaminated sites) were selected from sugarcane plantation in Mae Sot District. Samplings were carried out in wet (August 2011) and dry seasons (February 2012; maturation and ripening phase). As the results, the element's sequence in sugarcane root and soil samples was measured in both contaminated and control site, Ca, Fe and Mg were main element in samples that were similar to Earth's crust sequence. For soil samples in contaminated site, Cd concentration was no significantly different between seasons but was significantly different between contaminated site and control site and its higher in contaminated site. For sugarcane root samples in contaminated site, Cd concentration was no significantly different between 1st and 3rd year of sugarcane. However, season factor are affected to Cd absorption which indicate Cd concentration was significantly different between August and February (6.6 mg/kg and 3.3 mg/kg, respectively). It is probably due to the Cd uptake rate was lower than the growth rate. In conclusion, Cd concentration in plant was found because it was cultivated in Cd

contaminated area. Furthermore soil or land was found Cd contamination because of anthropogenic e.g. mining and fertilization.



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