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Potential Risks of Climate Change to Oil Palm Cultivation in Malaysia

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This desktop study evaluates the potential risks of climate change in Malaysia on oil palm cultivation in the field up to the year 2050. Increasing carbon dioxide (CO) level in the atmosphere has a positive effect on oil palm pe,formance. However, the oil palm is unable to use this positive effect to its maximum due to the higher air temperatures and uneven rairifall patterns that come with climate change. Higher air temperatures during frequent low rairifall periods subject the oil palm to water and heat stress which reduce photosynthesis. In addition, during the subsequent heavy rairifall periods, the solar radiation is low and reduces photosynthesis. The heavy rairifall also causes flooding of river basins and coastal regions; posing problems to fresh fruit bunch (FFB) harvesting and crop evacuation. If the land is flooded for long periods, it will also become unsuitable for planting oil palm. A rising sea level with climate change also results in the intrusion of saline sea water into coastal areas. This poses challenges for oil palm cultivation since the crop does not tolerate saline conditions. Climate change is also found to favour higher risk of attacks on oil palm by pests and diseases. In conclusion, the climate of Malaysia is still suitable for oil palm cultivation up to 2050 in spite of climate change. However, climate change presents risks to oil palm cultivation; the magnitude depending on its severity.

Keywords: *Climate change, water and heat stress, flooding, sea level rise, oil palm cultivation , pests and diseases.*