

# HCS Science Study: Draft Synthesis Report

## Comments from Malaysian Palm Oil Council (MPOC)

### 1. Introductory Remarks

The paramount importance to address food security and to eradicate poverty in the world cannot be denied. As such, these actions are reflected in many Agendas, including the United Nations Millennium Development Goals.

Palm oil is able to contribute effectively to the achievement of these two goals. Firstly, it is the dominant source of oils and fats in the world. Secondly, it is proven to have positive socio-economic impacts in the countries that have been growing oil palm consistently over the years, as seen for Malaysia and Indonesia (paragraphs 178-203).

MPOC is supportive of the Sustainable Palm Oil Manifesto HCS Study Group's aspirations whereby the HCS+ methodology is centered around a sustainable development focus, involving the balancing of the effects of GHG emissions on global climate with the potential for oil palm development to create local/regional socio-economic benefits (paragraph 92). However, MPOC is cautious that the imposition of inappropriate rules and regulations may suppress oil palm expansion. This can lead to serious harm to Mankind in the form of derailing or staggering the ability of the world to address food security and poverty eradication.

### 2. Upper threshold limit beyond which land must not be converted to plant oil palm

2.1 Which is the correct upper limit of no conversion to oil palm? Is it 75 t C/ha above ground biomass (AGB) , 100 t/ha AGB or 150 t/ha AGB?

These 3 values are used in different sections of the text.

- A value of 75 t C/ha has been given consistently in the figures (e.g. pages 8 and 25).
- We note that 75 t C/ha is theoretically equivalent to 150 t/ha of biomass.
- However, the text in paragraph 65 states that "*we recommend a threshold of 100 t/ha of AGB which is 50 t C/ha*". Note the repeat of this again in paragraph 101 and again in paragraph 256.
- Page 10, paragraph 19 (d) states that "*a 100 t AGB translates into a total biomass-related stock (i.e. AGB+ roots+ dead wood) of c.150 t dry weight.*"

Rather than being vague and misleading in using 3 different values, be specific and state that upper cut-off point is 100 t AGB or 50 t C/ha

2.2 Since root biomass is considered as part of the 75 t C/ha, up to which soil depth is it included for calculation? This is not mentioned in the text.

2.3 Generally used remote sensing methods, including LIDAR, are not able to estimate root biomass. So why include root biomass in the calculation of the cut-off point when it cannot be measured by the remote sensing methods suggested?

2.4 It is easier to determine the AGB (roots not included) using e.g. LIDAR. If such is the case, then following page 10, paragraph 19 (d), 100 t/ha AGB is the upper limit. In such a case the C stock is only 50 t C/ha. This definitely cannot be used as the upper limit cut-off point since oil palm plantations fix more C than this. On page 49, paragraph 142, it is stated that *"In this report, we will assume oil palm plantations accumulate AGB at the same rate as secondary forests, using the baseline value of 5 Mg/ha/yr"*. At this rate, oil palm can fix 125 to 150 Mg/ha/yr AGB over the economic life span of 25 to 30 years. This is already equivalent to 62.5 to 75 t C/ha.

2.5 Based on the points raised in item 2.4 above, the lower threshold limit must be at least 62.5 t C/ha at least.

2.6 As such a new upper limit must be redefined by the Study Group.

2.7 As oil palm is grown on forests which have been logged, there will be a lot of bark and dead plant materials still remaining at the site. Setting an upper cut-off point at 150 t/biomass per ha, which will include all these left over debris from logging activities into the measurement, is definitely erroneous. Some areas can have very large amounts of such left over bark and wood and will be rejected as potential oil palm growing areas, therefore.

2.8 It is mentioned that the 75 t C/ha will be applicable to all areas. This is not correct as growth will be dependent on type of soils present, climate and vegetation (type of trees) present. Using a low value of 75 t C/ha as a cut-off point will mean that the worst areas comprising of the poorest soils, harsh climate conditions or a combination of both of these conditions will be selected for new oil palm cultivation. Applying this principle goes against the logic of land use for agriculture, whereby the most fertile areas are to be cultivated and the poorest areas are to be left in its natural (forest) conditions. Deliberately choosing the poorest areas for oil palm cultivation will result in low FFB production and cost of production will be higher as well as the need for more quantities of greenhouse gas (GHG) emitting fertilizers.

2.9 Is there any scientific basis to show that 75 t C/ha is the correct cut-off point such that converting land above this value will hasten climate change?

2.10 There is a need to look at this scientific report more thoroughly. E.g. on Page 6 No.4, it is stated that “*woody debris can be significant store of carbon in the forest*” while on Page 21 paragraph 53 (e) just the opposite is stated as “*carbon contained in cleared biomass is assumed to be instantaneously emitted to the atmosphere.*”

2.11 The Report also contains assumptions which are incorrect. E.g. on Page 31 Paragraph 53(g), “*carbon exported from the catchment e.g. eroded soil is assumed to be instantly emitted to the atmosphere.*” This is difficult to explain using basic soil science principles as eroded soils will be deposited in another area. Soil carbon, exported by soil erosion, cannot be instantly emitted to the atmosphere.

2.12 It is strongly suggested that some serious study be carried out to know the AGB, BGB and C stock of potential oil palm growing areas. As such, more realistic biomass and C stock values can be proposed, rather than giving an arbitrary value as done for this Study.

2.13 While the use of a simple set of thresholds is useful to demarcate suitable and unsuitable areas for oil palm cultivation, their definitions and applications require careful consideration. They can have implications which have far reaching effects. To give just one example; the definitions of C stock in HCS+ may be abused by other industries e.g. logging industry. The upper threshold of a low C stock value of only 75 t C /ha may be misconstrued by the logging industry to mean that this is the threshold to which they can log safely without upsetting climate change. Logging companies will over-log their areas to arrive at this "safe" threshold value and lead to more deforestation, which is not what HCS+ wants.

### **3. Lower threshold value has to be stated**

3.1 This value has yet to be specified in the text. See Figure B on page 8.

3.2. It is probably assumed that the lower threshold limit is 35- 40 t C/ha since this is the commonly quoted C stock of oil palm plantation. Then this leads us to uncertainties with regard to the “amber zone.”

### **4. Amber Zone**

4.1 There is only a 10-15 t C/ha difference between the green and red zones. This is too narrow and may not even cater for the CV . Is this zone meaningful?

4.2 Conversion is allowed here with C offsets and if there is local/subnational benefits. Demand as well as price of carbon credits are uncertain. Both the demand and price of carbon credits are low currently. If one of the objectives of HCS+ is to ensure local/subnational benefits, why subject the local communities to new business hurdles

(C trading)? It looks like HCS+ will suppress the expansion of oil palm cultivation by smaller/individual farmers and favour the big conglomerates.

## **5. Upper threshold limit of soil C stock beyond which land must not be converted to plant oil palm**

5.1 An upper threshold value of soil 75 t C/ha has been proposed. According to this rule, all peat soils cannot be developed for oil palm planting in the future as pointed out in paragraphs 119, 122 and 256. While this may be acceptable to individual companies, there can be far reaching deleterious effects from a country's or state's point of view. This is explained as follows.

If a company encounters peat soils in the feasibility study, the company can reject the area and look for another piece of land. However, if peatland is the only or major land resource in the country, state or district, this is a different matter. Incidentally, all oil palm growing countries are developing countries whereby the Governments need development to uplift the livelihood of the people. So if the peatland is totally barred for oil palm cultivation, the Government will look for alternative land use for the peatland, such as the cultivation of sago or Manihot (cassava) in order to generate revenue. Very much more land area is needed to plant a lower value crop such as Manihot to generate the same income as oil palm. The end result is that the disqualification of peatland for oil palm planting may result in a greater magnitude of climate change.

5.2 Will new areas with mineral soils be subjected to this evaluation?

It is not clear if this rule is meant for peat soils only. If it is a mineral soil will the need to meet this rule be needed? If so, to what soil depth will the carbon content be calculated?

If this rule is applicable to mineral soils also, then soil areas with high soil C content, such as some of the fertile coastal alluvial soils, will be excluded for new oil palm planting. So caution is drawn to this matter.

5.3 Paragraph 137 is not written clearly. Suggest that this paragraph be rewritten.

## **6. Planting on degraded peat can be beneficial**

6.1 According to Paragraph 256, all peat and other organic soils have to be excluded from conversion. Planting on degraded peatland can actually result in a net reduction in emissions if planted with oil palm, as a result of improved water management and carbon sequestration by oil palm. HSC+ must relook into this matter.

6.2 In this case, the planned development would fit into two zones. It would fit into the red zone (because of the large potential total loss of soil carbon) and the green zone

(because the total carbon loss would be reduced as a result of planting oil palm). Clarification is sought on which threshold takes priority in the event that there is an overlap of predicted outcomes.

## **7. An alternative practical way of looking at DEFORESTATION issue**

7.1 FAO does not consider oil palm plantation as being a forest ( Page 17, paragraph 45). On the other hand, UNFCCC considers oil palm plantation as a forest as pointed out in paragraph 45. Thus, clearing forested areas to plant oil palm does not constitute deforestation under UNFCCC definition. Although differences in opinion occur between two important world organizations, it is recommended that since one of the main aims of HCS+ is to mitigate climate change, more onus should be given to UNFCCC with regard to matters on climate change. The UNFCCC is the world's focal point and depository of each country's National Communication. Its main agenda is climate change. In Malaysia's Second National Communication to UNFCCC (NRE,2011) it is clear that planted oil palm along with natural forests were major land use types that made Malaysia a net carbon sink in the world. (NOTE: there are less than 10 countries in the world that are net sinks. The rest of them are net sources).

The HCS+ Study Group does not agree with the UNFCCC definition as the Group is concerned that other values, especially biodiversity, will be lost. MPOC respects this concern which is very applicable when the country has little amount of remaining forest (e.g. < 30% of land mass) and this situation usually happens in many countries which have attained developed country status already. However, in developing countries which have vast extent of forests (>50% of total land mass), they must be exempted from this rule. Development in such countries must not be stifled such that the people living there are shackled to poverty forever. Some flexibility must be given to them to use part of the land that are still forested so that they can get out of poverty. No doubt, there is loss of biodiversity, when the forest is converted to agriculture but then again the extent of land with high biodiversity is still very large (>50%).

7.2 Oil palm growing countries are developing countries. As such they have large areas, often in excess of 50% of their total land mass, that are not developed yet. The Governments and the citizens of these countries also aspire to reach developed country status. It is the sovereign right of any country to clear some of the forested land in the country for development and to generate job opportunities and revenue. In the country's Master Plan for development, different portions of the forested areas will be allocated for various purposes, including for agriculture. Governments are always prudent enough to get as much revenue as possible from the forested areas, usually by extracting timber, before the land can be given away for agriculture to plant oil palm, rubber, etc.. Thus, land legally gazetted for agriculture must not be subjected to scrutiny and be ridiculed and use of such land for agriculture, if done legally, must be allowed.

7.3. What are the implications of enforcing inappropriate rules only on oil palm cultivation but not on other forms of agriculture? Potential oil palm growing countries have large reserves of forested land. Some of it will definitely be used for development. The government of the country offers a piece of land, either forested or peatland for agriculture. A company is keen to grow oil palm. It does not meet the threshold values given by this Study Group. The company does not plant oil palm. The government has to develop the land anyway to provide job opportunities and to obtain revenue. So the land will be used for other forms of agriculture such as planting of sunflower, soya, maize, rubber, sago, Manihot, livestock rearing, etc.. Many of these forms of agriculture are not as productive on an area basis as oil palm. Soyabean which is an alternative vegetable oil crop, for example, requires 11 times more land area to produce the same amount of oil as oil palm. Many of the forms of agriculture are also less lucrative than oil palm and, thus, more forest will have to be cleared in order to get the same revenue obtainable from oil palm. Thus, imposing too restrictive rules using ill-defined values with lack of scientific basis will be counter productive.

7.4 The philosophy of suppressing only oil palm cultivation, but not the others, as a way to mitigate climate change is incorrect. Some of the reasons are as follows:-

- Oil palm is the most productive crop. It yields 11 times more oil per area basis than soyabean, for example. As such, it results in 11 times less deforestation. If oil palm cultivation is suppressed, soya may be grown as a substitute crop. There will be more land cleared and more GHG emission.
- Deforestation contributes to 17% of total GHG emission in the world. Fossil fuel is the major cause of GHG emission, emitting more than half or 57% of the total GHG emission in the world.
- Clearing of forest to plant oil palm contributed 0.08% of total global GHG emission in 2010. Even if it is totally eliminated in the world, the mitigation effect to climate change is still very miniscule. The question then is why subject only oil palm cultivation to so difficult rules when the major culprits are not penalized? Should HCS+ Study Group not recommend to look at the more major GHG emitters to achieve its noble objectives?
- The total CO<sub>2</sub> emissions per capita for developing countries who are dependent on oil palm are low e.g. Malaysia has an emission of 152 metric tonnes compared to developed countries such as Netherlands 632 and USA 798 metric tonnes for the period of 1970-2009 (World Bank). According to the principle of Common but Differentiated Responsibilities, why must low emission countries be penalized for development?
- Sufficient compensation, e.g. from REDD, must be paid to the local people if oil palm cultivation is proposed and preferred by the locals, but the project cannot take off because HCS+ rules say that the land is unsuitable. It is also urged that

this compensation mechanism be included as part of the mechanism for the implementation of HCS+.

7.5 This Report is focusing on the socio-economic aspects of oil palm cultivation at the local level only but does not place focus at the national level. Land development is usually a national activity which is then translated to the local level. The elected government decides on what is best for the development of the country. It is not appropriate for non elected organizations e.g. NGOs to decide on which areas can or cannot be cultivated with oil palm based on incomplete scientific evidence. It is feared that the HCS+ Recommendations may lead to such a situation.

7.6 A definition of "heavily forested countries" is needed.

7.7 The HCS+ Study Group is urged to look at "deforestation" from this viewpoint with reference to paragraphs 22 and 80, calling for feedback.

## **8. By following HCS+, oil palm cultivation in the future will be relegated to the poorest soils and harshest climatic conditions**

8.1 Although there are 2 zones where oil palm cultivation is permissible following HCS+ rules, in reality there is very little land available in the green zone in tropical regions. The Study Group acknowledges this fact (see paragraphs 73 and 259.) The green zone consists of grassland and scrubland.

If land remains as grassland and scrub for a long time, these are very poor soils or the region has harsh climatic conditions. HCS+ rules says that these are the "no bar areas" that can be grown with oil palm. It appears the HCS+ is recommending the worst areas for oil palm cultivation, which goes against basic agronomic logic.

8.2 Please also provide definitions for "grassland" and "scrubland."

8.3 MPOC recommends that the Study Group carry out a study to determine how much potential land is available for oil palm growing in potential oil palm growing countries based on the Study Group's rules. This will be necessary before the Study Group's recommendations are finally accepted.

## **9. HCS+ recommendations do not favour oil palm expansion by small farmers**

9.1 Implementation of HCS+ methodology will result in changes to the way in which new oil palm plantings are planned and developed. There will be a need to collect detailed data on Cstocks in existing vegetation and soils and will increase up-front costs. It has been pointed out in Section 4 here that the C offset proposal can pose problems for small farmers who want to uplift their livelihood by growing oil palm. In addition, the recommendation of the most expensive remote sensing technology, namely LIDAR, to

determine C stock is yet another hindrance. Will the small farmers be able to pay for the study before they have embarked on the venture? Who pays for the extra expensive items e.g. LIDAR study etc. if the project cannot even proceed?

9.2 If the HCS+ Recommendations are implemented, then palm oil industry is the only food production industry in the world that is produced with a net zero GHG emission. Unless the same is also applied to other food producing industries, the Study Group is urged to abort such an ambitious pursuit, as this can deny the small farmers of their rights to grow oil palm and to get out of poverty.

## **10. Clear definitions needed to differentiate the green and amber zones**

10.1 Socio-economic benefits is supposed to feature prominently in the evaluation of HCS+. In fact, one distinction between the green and the amber zones is that for the green zone, "conversion must provide for local/sub-national benefits" while for the amber zone "conversion must provide for *major* local/sub-national benefits." The only difference between these the zones is the word "major." The word "major" must be clearly defined by the Study Group.

10.2 This report looks at development at a micro to semi micro level, namely local and sub-national benefits. The Study Group is again urged to look at the macro level, from the country's (national) and global point of view.

## **11. HCS+ cannot guarantee sustainability in climate change mitigation**

While HCS+ aspires to mitigate or arrest climate change when its rules are followed, this is not so. As pointed out in other sections here, GHG emission in the world by the oil palm industry is very small. As such, even if the complete oil palm industry is abolished, the impact on climate change is very small. The major sources of GHG emission must be tackled in order to realize some significant impact on climate change. Some of the major sources of GHG emission in the world are fossil fuel usage, coal industry and livestock industry.

## **12. Unless governments and industries co-operate, the aspirations of the Study Group will not be realized. Worst still, palm oil industry gets penalized while other industries get away scot-free**

This is the hardest part of getting the act together; getting different Governments and different industries to work together to fulfill the aspirations based on the recommendations of HCS+ Study Group. The Study Group is aware of the difficulties which is mentioned in paragraph 111, Page 36. What are some of the implications for not being able to get the act together?

a) Leakage: Oil palm planting is suppressed. The world needs increasing amounts of oils and fats. Rapeseed, soya, sunflower, coconut, maize and other lower productivity crops will be planted to fill the vacuum. These other crops need 7-11 times more land area than oil palm to produce the same amount of oil. The result is that more land area and more forested land will need to be cleared and more CO<sub>2</sub> emission into the atmosphere. HCS+ Study Group aspirations are not achieved.

b) Palm oil industry is the only industry that suffers because it is penalized.

c) The other vegetable oils and fats are not dictated by the same HCS+ rules. They get away scot-free even though they may cause greater climatic and socio-economic damage.

d) Land is offered for oil palm cultivation. If it is good agricultural land but oil palm cannot be grown by following HCS+ rules, the Government may then use it for other agricultural purposes that may emit more CO<sub>2</sub>. This defeats the aspirations of the Study Group.

### **13. HCS+ cannot be more than just mere guidelines**

The HCS+ is looking at potential oil palm cultivation at the micro level, which is just a small concessionary area. It has been pointed out over several sections here that this method of assessment by just looking at carbon stocks and local socio-economic outcomes narrowly is inappropriate and can lead to many ancillary problems. Assessment has to be done to involve the macro (national and global) levels.

HCS+ methodology and the system have many weaknesses. Its execution requires new additional new inputs which comes with extra costs and do not favour small scale farmers. As such, MPOC feels strongly that HCS+

- Can merely act as guidelines
- Its adoption must be on a voluntary basis
- Being voluntary in nature, the palm oil industry must not be coerced to subscribe to declarations or manifestos made under the guise of sustainability
- Sovereign rights of developing nations' to development so as to uplift the economy of the countries must be fully respected and supported.

### **14. Conclusions**

MPOC urges the Study Group to

- Review this report thoroughly for its factual evidences, methodologies used and applications. This is a Scientific Report and the recommendations have major implications, not only to the oil palm industry but to other land use types as well.

- Review the threshold cut-off limits of the 3 zones critically.
- Look at the DEFORESTATION and peat issues from a broader national and global perspective, as proposed here, instead of looking at them myopically from just a site or concessionary area.

MPOC wishes to stress that HCS+ can only act as guidelines for development and must be a voluntary system. Since oil palm is the only crop that is subjected to these rules, application of inappropriate ill-defined critical values may suppress or even halt oil palm expansion. Application of rules and regulations on just one industry (in this case, the palm oil industry) will definitely result in leakages and defeat the Study Group's aspirations as pointed out in our comments. Unless the Study Group can also come up with recommendations to stop such leakages, these rules/regulations must not be applied to the palm oil industry alone. This is needed so that global food security and uplifting the livelihood of the people in potential oil palm growing countries can be ensured.

## **15. References**

1. NRE (Ministry of Natural Resources and Environment Malaysia). (2011). MALAYSIA Second National Communication to the UNFCCC, pp 115.
2. The World Bank. CO<sub>2</sub> emission (metric tonnes per capita).