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Economic growth, climate change, confusion and rent seeking: The case of palm oil

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Abstract

Greenhouse gas emissions contribute to harmful climate change. Yet curbing emissions is not the only way to limit harm from climate change and it may not even be the best way. Much of the risk from climate change arises from its effects on less developed countries. Growth of the palm oil sector has proven to be a potent engine for economic progress. It has conferred gains on both producers and consumers. Policy-makers should assess palm oil as both a source of emissions and a source of development. Instead, U.S. and EU climate policy has viewed the palm oil sector almost entirely within the narrow framework of their biofuels programs. Their policies stand on weak data, flawed theories, hidden motives, and subjective standards.

Key words

climate change, greenhouse gas emissions, Ronald Coase, climate change mitigation, climate change adaptation, reciprocal problems, economic development, palm oil, Malaysia, EU biofuels, RFS2, EISA.
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1. Introduction

Palm oil production has proven to be a potent engine of economic growth. In recent years, though, some environmental non-governmental organizations (NGOs) have made it a target for criticism. Among their charges, the most troubling is that palm oil contributes to climate change. Palm oil producers and consumers have objected, and the debate has at times been heated.

Much of the resulting controversy has been as confused as it is rancorous. One source of confusion is, I shall suggest here, a tendency by the greens to frame the climate problem in overly narrow terms. When the issue is viewed in a broader framework, it becomes apparent that the NGOs have turned a blind eye to palm oil's value as a climate solution.

A second major source of both confusion and rancor is that palm oil has become part of the angry disputes about biofuels. Biofuels' proponents have claimed climate benefits as a major part of the rationale for the EU and U.S. programs. In fact, though, the two agricultural sectors have captured these programs as sources of economic rents. Green NGOs oppose this outcome. They want to restructure the programs in ways that would hurt the farm sectors but promote climate goals. Palm oil is, comparatively, a low cost biofuel feedstock. Its use as a feedstock does not, however, comport with the goals of either of the contending lobbies. Much of palm oil's image problem stems from its being caught in the crossfire of these two clashing biofuels lobbies.

Seeing the political economy of palm oil and climate change more clearly will not quiet the clash of interests. Nor will it obviate the need to make trade-offs in the use of the scarce resources available for coping with climate change. It may, however, help us to see those trade-offs more clearly.

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2. A Coasean view of the climate change

The dispute about palm oil and climate change, I suggest, is being conducted on terms that are too narrow. The green NGOs rightly perceive world greenhouse gas emissions as a root cause of much climate change. Oxford economist Paul Collier cautions, though, "Typically in an attempt to find a solution to a problem people look to its causes, or yet more fatuously, to its *root* cause. However, there need be no logical connection between the cause of a problem and appropriate or even feasible solutions."[1.] Collier, therefore, is warning us; we must not confuse eliminating what appears to be a problem's root cause with the best way to cure it. It may be, but it may not. In the case of climate change, I shall argue here, making the main effort an attack on the root cause is, at least for now, a bad mistake.

2.1 Climate change as a reciprocal problem

Nobel laureate Ronald Coase has suggested a sound way of looking at problems like climate change. His thoughts presaged Collier's warning about root causes. Coase's ideas lead to using a different framework in judging what to do about palm oil.

Coase observed that "nuisances", arise because many useful and valued actions raise costs elsewhere in the economy. Further, those harmed by a nuisance can often take steps to lessen their own costs. Coase cited a simple illustration. Restricting flight operations can lessen harm from airport noise, but the owners of the property affected by the noise can also take action. They can for instance, lower those costs by insulating buildings against sound.

Faced with such a "reciprocal" problem, the best outcome would be to make that set of changes that yields the greatest net benefit[2]. Reaching that goal will often mean inducing both parties to take measures to lower harm—one by controlling the source, the other by avoiding harmful effects. But either government or the market will incur transaction costs in the process of inducing the steps needed to lessen the nuisance. Such costs can be high enough to affect the choice of what actions to take. Indeed, they can be high enough, compared to the size of the avoided nuisance, to imply that inaction may be the best course[3].

Harm from climate change follows this same logic. GHG emissions can alter the climate. Climate change imposes costs on some activities and on some countries. Yet proposed solutions like rationing the use of fossil fuels, halting the felling of tropical forests, or shrinking livestock herds are themselves costly. There is another option. Hardening the activities or countries affected by climate change against harm also offers a means to reducing harm from climate change.

In the case of climate change, it turns out that one way of hardening the threatened activities is plain old economic growth. Thomas Schelling, another Nobel laureate economist, explained the point. As countries become richer, they acquire the resources needed to adapt to climate change; then too, with growth, their dependence on climate-sensitive sectors declines; also, growth brings many gains unrelated to climate.[4]

Economic development is, in this sense, a climate policy analogue to adding sound insulation to the buildings near airports.

2.2 A central dilemma of climate policy

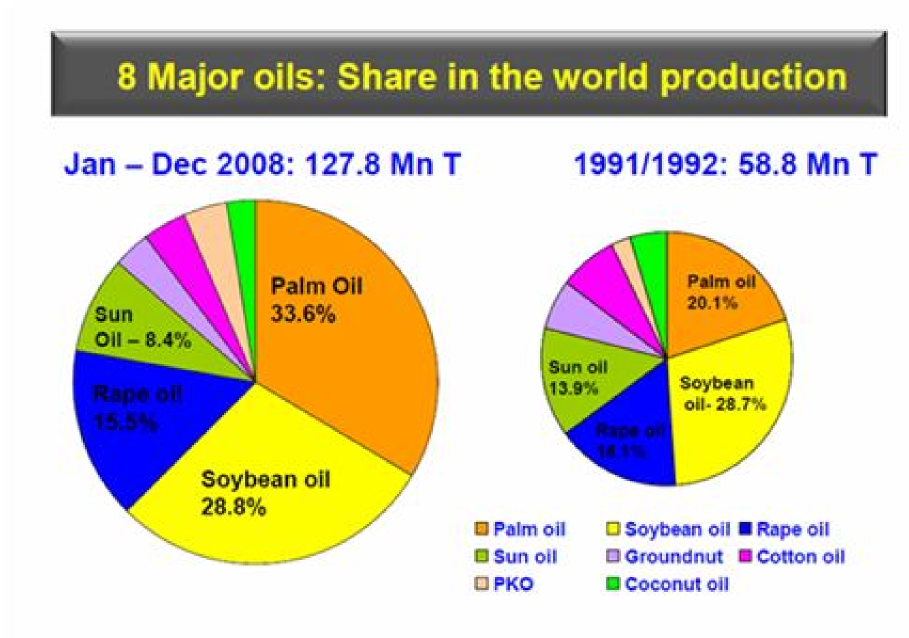
The insights of Coase and Schelling help bring into focus a central dilemma of policies that try to reduce harm from climate change. On the one hand, all else being equal, a strategy of fostering economic growth lessens the harm that countries will endure from any given amount of climate change. On the other hand, such growth can raise global GHG emissions. In doing so, it speeds up climate change.

A strategy of trying to limit harm from climate change by curbing GHG emissions takes the opposite tack. Yet, it is caught in the same dilemma. Taking steps to curb emissions may retard the pace of climate change. Yet GHG control is costly; hence, it slows economic growth. By doing so, it renders the countries that adopt GHG controls more vulnerable to harm from whatever climate change does happen.

If the country is already developed and its climate is temperate, the threat from climate change is likely to be small in the first place. In such cases, more wealth may do relatively little to lower climate risk. If the country is poorer and its climate is tropical, added national wealth may make a great difference.

Most governments of poor and middle-income states see this dilemma. Both China and India,

Figure 1



Source: MPOC & APOC, "Palm Oil Development and Performance in Malaysia" (February 2010)

for instance, have made it plain that they will not sacrifice their economic growth rates on the altar of GHG control.[5] Stocks of capital and of natural resources, in effect, wealth, are required for a country to adapt to climate change.[6] The countries that choose economic growth over GHG control are, therefore, behaving rationally.

In contrast to this view, many climate scientists and green NGOs remain badly confused. Their whole mind set works against heeding the insights of Collier, Coase, and Schelling. Instead, they focus on pollution as a moral failing.[7]

This framing of the issue prompts them to assume that extirpating emissions, the root cause, is the only valid means of solving the climate problem; hence, they miss the problem's reciprocal nature. They see that development can add to global emissions; they ignore its effect in lowering the harm from climate change. This one-sided view has distorted the larger debate about climate policy. And that larger distortion has warped some thinking about palm oil.

3. Palm oil production as an engine of development

When economic development is viewed in a more balanced way, a new dimension is added to the palm oil debate. On the one hand, economic growth can contribute to climate change. On the other hand, it is also true that development lessens the harm that climate change may cause. A fair judgment must balance both factors.

Without doubt, the oil palm has been an engine for economic development. For some developing countries, palm oil production and processing has become a growth industry and a valued source of export earnings. For others, it provides a source of affordable food imports. In both roles, it advances global economic growth.

The growth of palm oil production is, in part, anchored in larger global trends. Growing world population and wealth have caused the global demand for food to boom. As part of this broader trend, demand for edible oils and fats has risen. In response, between 2003 and 2008, palm oil production grew at a rate of 11.1 percent per year.

Indeed, oil palm has now supplanted soybeans as the world's single biggest source of edible oils and fats (see figure 1). Globally, palm oil output is spreading, but it remains quite concentrated. Malaysia and Indonesia are the two main producers. Between them, these two countries accounted for over 85 percent of global output in 2008.[8]

Factors beyond rising wealth and population have added impetus to the growth in palm oil output. The palm oil sector has conducted a vigorous R&D effort. Partly as a result, during the last two decades, new uses have appeared for both palm oil and its by-products. Uses now include many food and grocery products, cosmetics, surfactants, diverse industrial products, and biofuels. In fact, 50 percent of all packaged products sold in grocery sold today contain palm oil.[9]

Output is likely to continue to rise. On the demand side, global population and wealth will climb. On the supply side, output per hectare also seems likely to go on climbing. Therefore, by about 2050, total production may be roughly double that of today. In the future, other equatorial regions, like Latin America and Africa, may also become more important growers.

Table 1

World Demand for Oils & Fats (excluding bio-energy)

Year	Population (billion)	Avg. per capita intake (kg)	Production (mil mt)	Increment (%)
2005	6.54	21.4	149	-
2010	7.00	25.0	175	18
2015	7.40	27.0	200	15
2020	**7.80**	**30.0**	**234**	**17**
2050	**9.00**	**?**	**?**	**?**

Several Drivers:

- **Population growth**
- **Prosperity – increasing wealth in developing world**
- **Abolishment/reduction of import quota& tariffs – China & India**
- **Stagnant oilseed domestic production in major consuming countries.**

Source : MPOC & APOC, "Palm Oil Development and Performance in Malaysia" (February 2010)

These trends have already provided a substantial boost to the Malaysian and Indonesian economies. The sector as a whole accounts for about 7-8 percent of Malaysia's total GDP.[10] In Indonesia, palm oil plantations contribute about 1.6 percent of GDP.[11]

For both of these countries, the sector is a major source of export earnings:

The palm oil sector has been a major contributor to the export earnings of the producer countries. In Malaysia, the export value of palm oil and its derivatives rose from RM 2.98 billion (USD 903 million) or 6.1 percent of national total in 1980 to RM45.61 billion (USD 13.8 billion) in 2007. During the Asian financial crisis during 1997/98, palm oil was the top foreign exchange earner, exceeding the revenue derived from crude petroleum and petroleum products and forestry by a wide margin. According to Prof. K.S. Jomo (Jakiah Koya 2009) of the UN Department of Economic and Social Affairs, "it was the palm oil industry that saved" Malaysia during the economic crisis by spurring economic growth. The palm oil sector is also a major export earner in Indonesia, contributing about USD 7.9 billion in 2007.[12]

China, India, Pakistan, and Bangladesh have become major importers. The market is, though, world wide. The EU, the United States, Japan, and the rest of the world are all large importers.

In both countries palm oil provides employment. In Malaysia in 2009, total sectoral employment amounted to 860,000; in Indonesia the sector employed roughly 3,000,000[13] In both countries, the oil palm sector has been a boon to many small-holders. The fact that some other plantation crops, notably rubber, have been in decline, has made the rise of palm oil all the more welcome.

Thus, the producers and consumers of palm oil both benefit from its economic rise. Further, the writings of Coase and Schelling, in effect, counsel that some of the benefits of palm oil production will decrease vulnerability to climate change among some of the countries that are most at risk. It is understandable, though, that interests that compete with the oil palm would view matters in a different light. This conflict of interest groups has emerged most strongly with regard to the tussle for shares in the EU and U.S. biofuels markets. In the resulting public discourse, worries about climate change have been conflated with what is best described as eco-protectionism.

4. Palm oil and bio-fuels

Parts of domestic agriculture and the green NGOs have supported biofuels programs. These two interests are, however, at odds in their preferences over how such programs should be structured. Farm interests want the programs to promote existing crops. Those green NGOs that still support the concept want programs to promote advanced biofuels. The resulting disputes have sparked a demand for studies that purport to attribute GHG emission levels to particular feedstocks. In truth, though, the tools for making such measurements are badly flawed, and the standards are arbitrary. The result has been to throw a veil of pseudo-science over what is in fact a highly political process.

4.1 The goals and structure of biofuels programs

The EU and U.S. biofuels programs differ in many major details; however, their goals and basic structure are broadly similar. Both are designed to transfer income to domestic agriculture. Both claim to justify these transfers as means of bolstering energy security. And both purport to lower GHG emissions.

The central role of promoting domestic agriculture is clear in the results of the EU program.

> *There is general consensus that—in the absence of subsidies—palm oil is by far the most competitive vegetable oil for the production of biodiesel. The reason for the dominant role of rapeseed oil—a relatively high priced feedstock—is to be found in the high level of public support provided in EU countries where rapeseed oil from domestic sources represents the main feedstock for biofuel production. In fact, in the absence of public support, rapeseed based biodiesel should not be competitive, even on a long term basis.*[14]

U.S. policies have displayed a similar protectionist impulse. There the main effect of current policies has been to promote corn-based ethanol over imported sugar.

The structures of the EU and U.S. programs also have a good deal in common. Both mandate that a portion of all transportation fuel use must be supplied by biofuel. However, only those biofuels that conform to government standards count toward meeting this quota. Both programs also subsidize those biofuels that government certifies as being in line with its standards. To qualify for these favors from government, a biofuel must lower GHG emissions by a certain amount. Over time, the both programs' GHG reduction standards are scheduled to become more stringent.

In the EU, these policies have effectively shut palm oil-based biodiesel out of the market.[15] The EU has decreed that such fuel does not meet the standard for GHG reduction. (In the United States, where, diesel fuel has a smaller market share than in Europe, government seem to be moving toward a similar decision.)

The motive behind the EU decision, though, seems to have more to do with supporting Europe's farmers than it does with protecting the climate. EU documents state that the biofuels policy is intended in part to prop up its agricultural sector; this intent is surely a factor in the policy's treatment of imports; if so, the EU's Renewable Energy Directive violates the standards of the World Trade Organization.[16] Further, the process of estimating the GHG emissions caused by a given biofuel feedstock is, as it turns out, open to great doubt.

4.2 Estimating GHG emissions

Scientists and economists have lavished great effort on estimating the GHG footprints of biofuel produced from varied feedstocks. The upshot is that their efforts have failed. Estimates abound, but there is a stark dearth of agreement among them.

Comparisons of the GHG footprint of various feedstocks produce wildly divergent answers. For palm oil-based biodiesel, recent studies have found savings compared to fossil fuel that range from 19 percent to 71 percent. The EU found soy-based biodiesel achieved a saving of 31 percent. The U.S. government reportedly initially found that it was 22 percent. Then it revised its results to 57 percent.

Agreement about relative rankings is as scarce as it is about the absolute numbers. One recent study found that palm oil surpasses the saving from European rapeseed.[17] Another one, launched by the European Commission no less, found that, "For biodiesel, palm oil remains as efficient as rapeseed oil, even if peatland emissions are taken into account."[18] These findings are, of course, the exact opposite of those reached by the studies that support the Commission's official rulings. The Commission and the U.S. Environmental Protection Agency (EPA) aver that their standards are "science based". Even were we to take such claims at face value, it is patent that the science is question is far too primitive to serve as a valid basis for policy.

Consider what is involved in making such estimates. Prior land use, production practices, and local circumstances all affect emissions. These factors vary widely from case to case.

Small differences in assumptions about what is 'typical' can make large differences in the study findings. For instance, one recent study showed that palm oil-based biodiesel, depending on prior land use, can either produce net GHG reductions almost immediately, or that it can take hundreds of years to do so.[19] Further, the world is not static; markets, institutions, and infrastructure are all changing. They do so in ways that scientists find hard to measure and economists find impossible to predict.

Accounting for Indirect land use change (ILUC) is especially vexing. Producing biofuel can cause emissions as new land is opened to replace the crops diverted from food to fuel. Palm oil's high yield per hectare means that it is likely to have a smaller ILUC effect than other oil seed feedstocks. Also, the oil palm is often grown on soils unsuited to other crops.[20] This feature is a plus in comparing its ILUC effects.

Yet the models used by the European Commission take no account of ILUC.[21] The Commission has proclaimed that it intends eventually to account for ILUC effects in its standards, but it has postponed any doing so until 2016. The EPA has taken the opposite tack. Indeed, EPA rightly states that it could not validly certify that a biofuel meets the emission standards without calculating the indirect land use impacts. That the effects are uncertain, it notes, does not imply that they were unimportant.[22]

It is, therefore, useful to juxtapose the claims of the two regulators. The EPA can strongly support its claim that GHG measurements that ignore ILUC are of little value. The European Commission can strongly back its claim that ILUC is as yet too poorly understood for estimates based on it to carry much weight. Each agency's defense of its own approach effectively indicts that of the other. The only honest conclusion is that neither regulator actually has a valid basis for its policies.

4.3. A question of standards

Further, the regulatory standards appear to be as arbitrary at the 'measurements' that they are used to judge. Take for instance the EU's standard.

> *From a legal point of view, the 35% criterion is chosen arbitrarily. There is no specific scientific consensus saying it should be 35% rather than 30% or 40%. The 35% threshold, however, ensures that domestic rapeseed oil will qualify with a small margin but that the default greenhouse gas saving of palm oil biodiesel and soybean biodiesel—the main foreign competitors to domestic rapeseed biodiesel— will not. This is one principal effect of the directive: it effectively closes future market expansion for the main biodiesel competitors.*[23]

The same point can be made about the EU's 50 percent standard for 2017. It applies just as well to the new U.S. standard, which is also 50 percent. The rationale for any of these numbers seems to rest on thin air.

True, EPA claims to find benefits from GHG emission abatement that range from $0.6 to $12 billion yearly.[24] On closer inspection, though, the study on which EPA rests this claim is deeply flawed. Two errors in it are easy to spot.

First, the analysis is likely to have underestimated the costs of switching to advanced renewable fuels. A recent study of the National Research Council found that the rapid commercialization of advanced biofuels is unlikely to occur.[25] By inference, the costs of meeting the current standard may very well exceed those assumed by EPA. So far, EPA has been shown to be overly optimistic about the pace of progress in this area.

Second, EPA has admitted to basing its benefits for GHG abatement on estimates of avoided *global* harm from climate change.[26] The United States, though, as discussed above, is a highly developed country with a temperate climate. As such, it is much less exposed to harm from climate change than most other countries around the globe. Even Cass Sunstein, now a senior official in the Office of Management and Budget, concedes this point.[27] Therefore, a U.S. analysis should use the correct U.S.-specific damage estimates. Had EPA done this, it would have found far smaller benefits than it did. In any case, the programs' GHG standards are themselves grossly arbitrary. EPA's study seems at first blush to suggest otherwise. Yet that study contains major errors likely to conceal the possibility that the standards may are causing net losses in economic welfare.

5. Concluding thoughts

In large measure, the discord between what I have referred to as a Coasean approach and that of the green NGOs lies at the root of arguments about palm oil and climate change. The former view regards economic development as a valid response to the threat. The latter insist that only GHG controls can deal with the problem's root cause. Twenty years of failed UN climate talks cast a deep shadow of doubt over the realism of GHG control schemes.

Nowhere does the palm oil and climate debate rage more hotly than over biofuels. The truth is, though, that these programs are wracked by inner contradictions. They purport to promote agriculture, lower GHG emissions, and enhance energy security. The first goal puts the world trade regime at risk. The current state of the art is economics cannot measure progress toward the second. And the program structures seem to have sacrificed the third goal to the first two. Whether palm oil can find a niche in markets that are so politicized remains to be seen.

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