

Introduction

It is common to see climate change as “our” fault: we consume too much and we are too many. Although this discourse is often legitimate it conceals an important aspect: people's emissions vary a lot.

The amount of greenhouse gas emissions depends, for example, on the technology with which everyday life is conducted. A way of life based on reuse, recycling and organic agriculture or other agro-ecological methods does not necessarily produce any net emissions. People living in this way are not only Europeans and Americans who have radically changed their life styles in response to the ecological threats, but they can also be found among the poor in the Global South, living on waste collection and separation and on traditional subsistence farming.¹

A person's place of residence, and its surrounding traffic and energy systems, along with the infrastructure in general, has a large impact on emissions. For example, a person may be able to walk to the work place, or may be required to drive a long distance by car.

However, income level has the biggest impact on a person's emissions. With high income one generally buys far more goods and services than are necessary considering the local climate and infrastructure. To date, the production chains of any commodity, almost without exception, include processes that emit a lot of greenhouse gases. Our present civilization, and the enormous and expanding machinery that supports it, is built on oil, coal and natural gas. The share of other energy sources in maintaining the economy is still small.

On the other hand, a high income level means, almost without exception, that a person has relatively more power. The rich have greater possibilities to influence the development of the physical structure of a society, and thereby the emissions of other people.

It is common to present figures indicating the emissions of various persons. Yet it is not clear which emissions belong to whom. The first confusion concerns the aggregate to be considered when estimating emissions. For example, the emissions of an average Chinese are usually calculated by dividing the total emissions on Chinese soil by the population of China. However, about one half of Chinese production is for export and consequently a large part of the emissions taking place in China in fact belong to the Europeans, Americans and other people consuming Chinese products.

The second confusion concerns the instigator of the emissions. If every individual always acted alone and wholly independently, the matter would be settled. In reality however a person is never completely free, and other people can have a decisive influence on her behaviour. Or a person may act of necessity. Which, in turn, may have come about because of decisions made by others. For example, the high emissions caused immediately by the actions of a factory worker are not usually attributed to her, because she cannot choose the technology or decide what to produce but does only what the persons in the upper echelon of the hierarchy demand.

The situation is considered to change radically once the worker steps out through the factory gate and starts the car: her emission counter begins to tick at a brisk pace. However, the reason for using the car could be due to the fact that the managers of the company decided to close the factory adjacent to the worker's home, whilst the governors

1 Satterthwaite 2009

of the city decided to close the bus line that she would rather have used.

The relationship between emissions and income level

For many it is obvious that the rich emit more greenhouse gases than middle income persons or the poor. On the other hand, it is commonly believed that low income groups have poorer education and therefore are negligent in their energy use. Besides, the poor cannot afford to buy organic products, low-emission cars or other energy saving products, can they? On the level of every-day understanding the issue is contested. Fortunately, research done in various parts of the world, can resolve this dispute.

In a broad research project funded by the European Commission, the relationship between the personal emissions of EU citizens and their income levels was studied. According to the results, negative environmental effects per capita clearly increased with growing income.² This study dealt with many kinds of polluting emissions. But there are also many materials which specifically discuss the connection between income and greenhouse gas emissions. For example, as a part of a study at the University of Massachusetts, carbon dioxide (CO₂) emissions of different income deciles in the USA were calculated. The results showed the CO₂ footprint of the richest decile to be about seven times greater than that of the poorest decile.³

Similar results were obtained in Sweden and Finland. According to a study at Statistics Sweden, in the year 2000 the richest decile of Swedish households emitted four times more CO₂ than the poorest decile.⁴ The quotient is lower than in the USA because the gap between rich and poor is smaller in Sweden.

On the base of the large household budget survey carried out in 2006, a researcher from Statistics Finland calculated carbon dioxide emissions of different consumer segments. The annual emissions of the poorest decile were 8 700 kg and those of the richest decile 26 500 kg. So the richest emitted three times more than the poorest.⁵ Using the same data researchers at the Finnish Environmental Institute got the same quotient slightly smaller: the emissions of the rich were 2.4 times higher than those of the poor.⁶ The explanation for the smaller figure is that the Environmental Institute included the emissions of other greenhouse gases than CO₂. The discharges of these are distributed more evenly among income group.

In widely different circumstances in India the situation is much the same. According to a study '*Hiding Behind the Poor*', commissioned by Greenpeace India, the average annual CO₂ emissions of those earning less than 3000 rupees (approx. €36) per month is 335 kg, while the emissions of those earning over 30 000 rupees (approx. €360) is 1394 kg, four times greater. The study however looked only at direct emissions caused by electricity consumption and transportation.⁷ If the emissions from the production of purchased goods and services were taken into account, the difference between income groups would have been bigger. Amongst the segment earning more than 30 000 rupees is a small proportion whose luxurious life style, with frequent air-travel, causes emissions many times higher than the average of the segment.

The connection between income level and emissions has also been found in many

2 Pye *et al.* 2008

3 Boyce & Riddle 2009, 4

4 Wadeskog & Larsson 2003, 37

5 Nurmela n.d.

6 Rantsi & Nissinen 2012

7 Ananthapadmanabhan *et al.* 2007

urban studies. When Aalto University researchers looked for the reason behind the bigger carbon footprint of the residents of Helsinki than the residents of Porvoo, one of the explanations proved to be the higher income level in the Finnish capital⁸. In another recent study at the same university the greenhouse gas emissions in Helsinki city centre were compared to those in the suburban areas. Although the daily trips of suburban residents were longer, the emissions of those living in the centre were higher. The explanation was once again the higher income in the centre, and the greater consumption enabled by it.⁹

A study of direct and indirect energy consumption in Australian urban, suburban and rural settings showed that although life in the countryside and in suburban areas demanded more energy for travelling and other direct use, the urbanites still consumed more energy overall. Because they had higher income levels, city-dwellers used more energy indirectly by buying more goods and services.¹⁰ Energy demand moreover is fairly directly proportional to CO₂ emissions in Australia, a country where 89% of commercial energy comes from fossil sources¹¹.

An extensive comparative study of German cities considered various ecological indicators including CO₂ emissions per capita. When these figures are set against average incomes, a clear correlation is obtained: the higher the income the bigger the emissions.¹²

Most research on the relationship between emissions and income has been done in the UK. This is partly due to the strong climate movement and to the Climate Change Act which mandates compulsory annual emission cuts. According to this body of research, income is an essential factor in explaining the differences in emissions between population groups. In particular, indirect emissions are strongly connected to income level.¹³

An extensive study on the factors influencing the greenhouse gas emissions of British households was carried out a couple of years ago by the Centre for Analysis of Social Exclusion at the London School of Economics. This study showed the emissions of the richest decile were 2.4 times higher than those of the poorest decile¹⁴. However, for emissions accruing from private services and consumables the richest decile's emissions was 3.8 times that of the poorest. And for transport the difference was even greater, with the highest decile emitting 4.5 times more than the lowest decile.¹⁵

The emission gap between the rich and the poor has widened over recent decades. In Britain the difference in fossil fuel consumption between income groups increased markedly from 1968 to 2000.¹⁶

The impact of income level is explained largely by the fact that most emissions in rich countries and among affluent population groups are indirect and are connected to the consumption of goods and services which naturally depends on income. According to one study, 80% of the emissions in Britain are indirect.¹⁷ When the average income is lower, the share of indirect emissions decreases. In Xiamen, a major city on the South-East coast

8 Heinonen & Junnila 2011

9 Heinonen *et al.* 2011

10 Wiedenhofer 2011, 27, 33

11 Origin 2013

12 Schachtschneider 2012, Economist Intelligence Unit 2012

13 Gough *et al.* 2011, Gough 2013, Gough 2011, Baiocchi *et al.* 2010, Druckman & Jackson 2010a, Minx *et al.* 2013

14 Thus, the ratio is the same as in Finland, according to the study referred to above.

15 Gough *et al.* 2011

16 Papathanasopoulou & Jackson 2009

17 Gough *et al.* 2011; according to Baiocchi *et al.* 2010 (p. 57) the share of indirect emissions is 70% while Druckman & Jackson 2010a (p. 13) calculates it to be 66%.

of China, indirect emissions are only 34% of the total emissions.¹⁸

A large part of European indirect emissions take place abroad: in China and in other countries where polluting industries have relocated outside of Europe. For example British emissions increase by 33% when the outsourced emissions abroad are taken into account. According to the Swedish study referred to above, 36% of the emissions caused by Swedish households occurred in other countries.¹⁹ According to the statistics made in compliance with the UN system, the emissions of many European countries have decreased over recent years. However, when the indirect flows of greenhouse gases are accounted for, it in fact turns out that their emissions have increased.²⁰

The division between direct and indirect emissions is also important for the reason that the goods and services associated with them are necessary to different degrees. A poor person, too, has to cook, light up and warm their homes and go to work with a means of transportation whereas she can refrain from buying many durables without undue suffering. Most of the consumption and activities causing direct emissions are such that their elasticity in regard to income is small. Whereas the elasticity of most of the consumption causing indirect emissions is larger. A part of our consumption is, so to speak, locked in by the system of provision determined by the social and physical structure of society or by other circumstances. Therefore, total emissions first decrease steeply as income decreases, but then decrease only slowly.²¹

The emissions distribution on the global level

Normally, global greenhouse gas emissions are shown as a distribution between different countries or country groupings. However, a country is not a self-evident unit for emission statistics. Greenhouse gas emission can as well be analysed by branches of industry or by company.²² The discussion above suggests that a fruitful way of analysing emissions would be to divide global emissions between income groups. Yet this is difficult because there is an absence of relevant global statistics: only a few countries have undergone studies on emission distribution by income. Still on the base of the discussion above, one can assume that there is a clear correlation between income and emissions on the global level, too.

A study published in the Proceedings of the US National Academy of Science, documented the work of an international research group, which divided global CO₂ emissions by income. They constructed national income distributions from World Bank data, assumed unitary elasticity between income and emissions and anchored means using country level emission data. Thus, using this methodology, they could arrange all the people in the world in order according to their personal emissions.²³ The results show that in 2003 around 700 million of the biggest individual emitters, or 11% of the global population, were responsible for half of global CO₂ emissions. Approximately 880 million of the next biggest emitting individuals accounted for half of the remaining emissions or 25% of total emissions. In other words, approximately 1580 million, or 25% of the world's

18 Lin *et al.* 2013

19 Wadeskog & Larsson 2003, 67

20 Gough *et al.* 2011, 2

21 Gough 2013; on locked-in and elastic consumption see: Sanne 2002, Røpke 1999, Baiocchi *et al.* 2010, 63, Jackson & Papathanasopoulou 2008, Seyfang & Paavola 2008

22 When global emissions are analysed by company, it has been found that only 90 companies are responsible for 63% of total CO₂ and methane emissions in the years 1751-2010. The top emitting companies are Chevron, ExxonMobil, Saudi Aramco, BP, Gazprom and Shell. Heede 2013

23 Chakravarty *et al.* 2009

population were responsible for 75% of global emissions. Correspondingly, the least emitting poor, which comprised 75% of the population, answered for only 25% of the emissions.²⁴ This means that the minority of the world's population with high incomes are largely culpable for climate change²⁵. Most of the people belonging to this high income minority live in North America and Europe, but the share of the rich in the Global South is growing fast due to higher growth and growing inequality.

These calculations do not account for the movement of emissions with the export and import of goods from one country to another. If these were included in the emission figures, the distribution would be even more skewed. On the other hand, the study assumed that the elasticity of emissions is constant,²⁶ which as we learnt above is not true: with low or moderate income the elasticity of the emissions generating consumption is smaller than with high income. Accordingly, the share of the poor of emissions, at least in rich countries, should be somewhat larger than the study represents. It may be that these two opposite errors compensate for one other. At any rate, the global emission distribution set forth in the study is certainly in the right ballpark.

The indirect influence of the rich on emissions

The rich and well-paid do not practice their high-emission life style on an island isolated from the rest of society. Their consumption is visible and there are many channels through which they can exert great influence over social processes.

Information on the houses, cars, yachts, planes, gadgets, other belongings and travels of the wealthy is transferred easily to other people either directly or through media. This is made more effective by the fact that most celebrities also belong to the wealthy minority.

The life style of the media stars readily becomes a norm that other people try to follow. Although it is quite impossible for most people to imitate the consumption of the richest, everyone can pursue the commodity world that seems to be normal for the people a little richer than they are. The steeper the income distribution the more intense the consumer competition is, and the more difficult it is to live with low income.

As people who are behind in income distribution catch up with the ones ahead, they increase their consumption. At present the life of the richest include lavish houses and villas in different parts of the world, private jets and luxury yachts.

The imitation of the wealthy is nowadays global. The rich and middle-income people in poor countries model themselves on the life style of the European and North-American wealthy. This is how the rich, through their example, boost emission-incurring consumption world wide, and so increase their culpability from its already disproportionate size.²⁷

However, the rich do not content themselves with over-consuming and appearing on the world stage as models of wealth. Their wealth also means power, and that power is something they wield. They sit in various organs of states and corporations, or pay someone else to. They found lobby groups and think tanks, and even spread their tentacles over the field of universities and research institutions. The primary purpose of all

24 Chakravarty *et al.* 2009, Supporting Information, p. 25, figure S7

25 The same probably holds true for other environmental burdens. Marko Ulvila and Jarna Pasanen have estimated that around two billion people, or 30% of the world's population are principally responsible for the ecological crisis: Ulvila & Pasanen 2010, Ulvila & Pasanen 2009.

26 Chakravarty *et al.* 2009, 1

27 See e.g. Kempf 2008, Druckman & Jackson 2010b, 1800-1801, Treeck 2012, Gough 2013, 207, Veblen 2003[1899]

this is, on one hand, to consolidate social structures that secure their income and wealth and, on the other hand, to prevent changes that would level income inequality. More than two centuries ago, Adam Smith drew attention to how “moneyed men” through their political activities distorted the market system that he had sketched out to be such that it should generate common good.²⁸ In fact, the states we call democracies are democratic only to a certain extent, and power is concentrated in the wealthy.²⁹

Because of their power the rich are partly responsible for the physical and social structures of contemporary societies that force even the poor to consume a lot of fossil energy.³⁰ On the other hand, low-emission society is perceived as a threat because it would almost inevitably mean the end of the economic growth paradigm and the consequent pressure for economic equality.³¹ This is one reason why efforts to mitigate climate change are being obstructed in many ways.³²

A crucial way for the opulent minority to wield power in modern societies is to finance persuasion, misleading representations and even downright lying. As late as during the interwar period this activity was commonly called propaganda. Gradually however the terminology was changed, until it was only when these activities were carried out by the adversary that they were termed propaganda: “we” instead conducted advertising and “public relations” (PR). While modern advertising was taking the first steps after the First World War, its key aim was to prevent the extended suffrage to overthrow the old elite. The PR pioneers of the early 20th century saw their responsibility as being to “take the risk out of democracy”.³³

Political and commercial PR have from the beginning been linked together in a mode that has vast ramifications with regards to climate change. Advertising new commodities has been a way of directing dissatisfaction, which could potentially nourish social change movements, into dreams of consumer paradise following some effort at work, instead. Commercial propaganda has attached various social meanings to commodities and thus created the private consumer life style that is so disastrous for the climate³⁴.

Climate injustice

The fact that, directly and indirectly, the wealthy are most responsible for climate change, which causes suffering not only to themselves but to all people, is unjust enough. 'Climate injustice' however refers to a situation that is even worse: those who are least culpable for climate change suffer most from its consequences. Usually this points to the relationship between rich and poor countries. The injustice between countries is especially great when one compares the cumulative emissions generated from the beginning of the industrial era.³⁵

28 Smith 1937[1776], 248–250

29 See e.g. Graeber 2013, Chomsky 1999, Jänicke 1990

30 The responsibility of the contemporary rich is lessened by the fact that social structures also greatly influence their behaviour. On the other hand, these structures have been formed under the influence of earlier generations of the upper classes.

31 On the connection between low emission society and economic equality see e.g. Steinberger & Roberts 2010.

32 See e.g. Hoggan & Littlemore 2009, Fauset 2008, Noble 2007

33 Carey 1997, Miller & Dinan 2008, Herman & Chomsky 1994[1988]; this concern as told by a PR pioneer himself: Bernays 1928

34 On attaching social meanings to commodities see e.g. Leiss 1978, McCracken 1988.

35 See e.g. Tokar 2010, Vanderheiden 2008, Klein 2009, Roberts & Parks 2009, Clifton & Bhatnagar 2013

Yet the same double injustice also prevails within individual countries. The poor have least resources to adapt to sea level rise, heat waves, droughts, heavy rains, floods, storms, ecosystem disruptions, the endangering of food production, rising food and other prices, epidemics and other consequences.³⁶ This injustice applies to the poor living in both the Global South and the Global North.³⁷

The same inequity manifests itself also in other environmental issues at global, national and local levels. Poor neighbourhoods usually suffer more for every kind of pollution, whilst their inhabitants are least responsible for it. Strong movements demanding environmental justice have therefore arisen, especially in the USA.³⁸

Wealth inequality between countries has diminished since around 2000, but the inequality within individual countries has increased both in the Global North and in the Global South. The only exception is Latin America where internal inequality has been reduced as a consequence of abandoning neo-liberalism.³⁹ The same trends can be seen with respect to climate injustice, as the emissions of many southern countries have risen along with economic growth, whilst the vast majority of people within them still emits very little.

Yet it is possible that climate injustice within countries has increased even more than economic inequality. According to a UK study inequality regarding access to fossil fuels rose from 1968 to 2000 distinctly more than inequality with regards to consumption in general.⁴⁰

How to change the policy?

What can be done to change the situation where the wealthy cause most climate change-related emissions but, at least in the near future, the poor suffer most for its impacts? Of course, stopping climate change would remedy the situation. However, reactions to the climate catastrophe lurking in the future have so far been only small reforms which at most slow the progress of climate change. Therefore, present climate policy and the measures planned for the future must be considered relative to climate injustice.

In this regard, the situation is a sad one. In addition to the double injustice already discussed above, there is a third injustice, especially in industrialized countries: the heaviest burden of present climate policies usually fall on the poor sections of the population.⁴¹

In most cases the policy response to climate change is to raise the price of fossil fuels using carbon taxes or by other means. Although the poor have smaller emissions than the rich, their emissions per income euro are bigger because a greater share of their income goes on energy needs. Accordingly, this type of taxation is regressive. That is to say that among the poor, the tax affects a larger proportion of their income than among the

36 On the effects of climate change see e.g. World Meteorological Organization 2013, Allison *et al.* 2009, Parry *et al.* 2007, <http://www.ipcc.ch/>

37 See e.g. Gough 2011

38 On global environmental injustice see e.g. Seyfang & Paavola 2008, Tammilehto 1999, Muradian & Martinez-Alier 2001; on local environmental injustice see e.g. Seyfang & Paavola 2008, Camacho 1998, Bullard 1996, Pye *et al.* 2008.

39 Gough 2011, Therborn 2011, Therborn 2012

40 Papathanasopoulou & Jackson 2009

41 See e.g. Gough 2013, Gough 2011, Seyfang & Paavola 2008, Papathanasopoulou & Jackson 2009,

rich.⁴² Such taxes are made even more regressive by the fact that the intended decrease in energy consumption does not quite materialize among people with small incomes because their consumption is locked in by social structures beyond their control, to a much greater extent than that of the rich. For example, often the poor rent their homes, and so cannot make decisions about the energy renovation of their houses.⁴³

Besides – as we learned above – the bigger part of the greenhouse gas emissions of the wealthy are indirect and largely take place abroad in the production chains of commodities purchased by them. But because in most countries there is no taxation designed to curb emissions, most emissions incurred by the rich escape tax.

Another way of trying to control emissions is to support energy savings and renewable energy investments in households. This policy, too, favours persons with a high income. The poor cannot use these subventions and thus do not profit from the decreased energy bills that these investments result in.⁴⁴

In principle, it is possible to alleviate the injustices in present climate policies. For example, the rise in energy costs for the poor can be compensated for. However, although the average loss can quite easily be made up, the situations of the poor vary so much that some would suffer in any case.

Another suggested way to compensate for these injustices is to change the structure of energy tariffs so that at first the unit cost of energy is low but as consumption increases the additional units cost markedly more. Thus, the average unit cost for big energy consumers would be distinctly higher than for small consumers. While this system would benefit most people with a small income, it would not be effective in all cases. On the one hand, because of their circumstances some poor people use a lot of energy to warm up their homes and to get to work, and on the other hand, some rich people could avoid the higher tariff because the wealthy are more able to invest in energy saving measures.⁴⁵

A completely different way to reduce emissions in a locality or country is to change the system of provision so that less activities generating greenhouse gas emissions are undertaken. This means that people become less locked-in to the activities that are harmful for the climate. The most common change of this kind is to develop public transportation so that there is less need to use private cars.⁴⁶ In most cases, a change in the system of provision demands major changes in economic structures. These changes however can weaken the position of the wealthy and therefore are often opposed. For example, local production of food and energy would potentially roll back the role of large corporations in concentrated production and distribution, and through this shake the foundation of the wealth of a powerful minority.

The problem with all these types of reforms however is that although they can reduce greenhouse gas emissions in a particular region or sector, for many reasons they do not necessary have any impact on total global emissions. To begin with, when people – especially the wealthy – decrease their energy use in heating, lighting etc., as a result of various incentives, money is usually saved as well. These money savings tend to be used for new purchases, which in turn can directly or indirectly emit as much or even more

42 Gough 2013, Boyce & Riddle 2009, 5; on the regressive impacts of Finnish climate and carbon taxation: Kiander 2008, Mustonen & Sinko 2000

43 See e.g. Seyfang & Paavola 2008, 679

44 Gough 2013, Gough 2011

45 Gough 2013

46 Unruh 2002, Seyfang & Paavola 2008, 679

greenhouse gases than were avoided by the decrease in energy consumption.⁴⁷ This so-called *rebound effect* was known in economics as early as in the 19th century.⁴⁸

In addition to the individual household level, the rebound effect can also occur at the level of the global economy. Fossil fuels that remain unsold in one country are sold eagerly to another country especially, as the drop in demand tends to lower the price.⁴⁹ This is particularly the case because climate policies in one country hardly ever aim to reduce emissions caused by global production chains.

The rebound of emission cuts is reinforced further by the EU Emission Trading System (ETS). In the various sectors covered by the ETS, an emissions reduction in one installation creates a right to emit the equivalent amount in another installation. When a household decreases its electricity consumption, due to incentives provided by the government or for another reason, the total emissions may not fall but rather the emissions may move from electricity production to another branch of industry.⁵⁰

One suggested way to tackle emissions inequality is to distribute to all people an equal emissions quota. This suggestion has included the idea that those with low consumption, or mainly the poor, could sell part of their quota to those consuming more, or mainly people with a high income. Although such a system could have a significant redistributive effect, its implementation wouldn't be trouble-free. The scheme has not usually included the indirect emissions contained in production chains. Thus, most of the emissions caused by the rich would be left out.⁵¹ Furthermore, many of the poor live in energy-inefficient rental houses, the heating of which would swallow most of their quota, and so they would continue to be energy-poor.⁵²

This suggested micro-level emissions trading could also have similar problems as in the EU ETS. For example, an emissions reduction in one household would likely mean a corresponding emissions increase in another. The motivation behind energy savings would no longer be the mitigation of climate change but making money by selling emissions rights.

In practice, emissions quotas would constitute a parallel currency. There would probably be many people who would not be successful in juggling the two currencies. Experiences from other parallel currencies are not only positive ones.⁵³ The system would resemble, to some extent, the partial privatisation of state-owned companies in Russia in 1992-1994: ordinary people were given vouchers that corresponded to a small chunk of privatised property. Very soon, all the vouchers ended up in the pockets of a few speculators who exploited the distress and ignorance of poor people.⁵⁴

All of these measures and proposals could very possibly leave the income of the rich unchanged. Yet, if the people with a high income are directly or indirectly the main cause of climate change, through their life styles of over-consumption, shouldn't their high incomes be taxed by a steeply progressive income tax? This may sound politically impossible, but steeply progressive income taxes have existed even in the USA in 1950s. With regards to climate change, it would be essential how the proceeds of such taxes are

47 See e.g. Druckman *et al.* 2011, Chitnis *et al.* 2013

48 The first to write on this effect was British economist William Stanley Jevons in 1865. Therefore the effect is also called the Jevons paradox. See e.g. Bellamy Foster 2009, 121-128, Binswanger 2001

49 See e.g. Druckman & Jackson 2010b, 1803

50 Perino 2013

51 See e.g. Gough 2013

52 Seyfang & Paavola 2008, 680

53 Seyfang 2007

54 See e.g. Appel 1997

used: they cannot primarily be used for income redistribution, because the poor generally emit more per euro than the rich, as explained above.⁵⁵ Most of the proceeds should be spent on structural changes that would free people from high-emission traps, so that low carbon living would be possible for all. Such changes include the development of systems based on public transport and shared vehicles, the promotion of renewable energy sources, dismantling food and energy oligopolies, favouring local production, making the carbon balance of agriculture negative by utilizing methods that radically increase the organic material stored in fields, building community structures that enable rich social life, prohibiting advertising that sells fake social relations, and reducing work that is imposed from the outside so that one does not need to compensate for work-induced misery by consumption.

However, no changes aimed at climate justice can be realized without an underlying social force rising from social movements. The development of this force is again influenced by the way policy makers treat other people. It is an essential factor whether they are regarded as subjects of the state, zombies maximising their utility in “commodity space”, or as citizens actively taking part in the process of social change.⁵⁶

The reward system and its change

The proposal to level off high incomes through tax for ecological reasons certainly comes up against strong opposition in many circles. There is therefore a reason to consider high incomes from another point of view: unless incomes are the result of good luck in lotteries, they are usually understood as rewards for important, demanding or well-performed jobs.⁵⁷ Thus, they constitute a reward system. Other kinds of reward systems have historically been used and some of them still are used: for example, people are rewarded by honorary titles and diplomas, or just by general respect. We have come to the conclusion above that high incomes, in practice, mean high greenhouse gas emissions. Accordingly, people are rewarded with a right to emit an exceptionally large amount of these gases. So, wealthy and high income people have the opportunity to contribute to making our planet uninhabitable to an exceptionally great extent. This kind of reward system seems odd, to put it mildly.

Perhaps the matter becomes clearer when we go back to the discussion on personal emissions quotas. It has usually been thought – and in the above discussion assumed – that emissions quotas include only direct emissions. If this idea is changed so that individual emissions quotas are extended to include indirect emissions, one would need to use the quota in almost all purchases. There would be only a few things that one could acquire by money alone. This would decrease the real value of money, and, at the same time, because the quotas would be greatly needed, their value would go up. Once a society adheres to the principle that all people receive equal emissions quotas, equal pay would, in effect, be approached. The difference between monetary wages would not matter very much any more because money would have lost most of its value. Only those who had managed to accumulate a large amount of quotas by speculation or other means would be rich. In this way, the extended concept of emissions quotas would break down the money-based reward system.

In this situation, there would presumably be demands that for important, demanding

⁵⁵ Gough 2013, Boyce & Riddle 2009, 5

⁵⁶ See e.g. Sanne 2002, 274-275, Seyfang 2005, Seyfang & Paavola 2008, 681, Seyfang 2007, 15

⁵⁷ High incomes, and the consumption of luxury products made possible by them, can also be seen as markings of status in society. By mapping various ways of marking status it is possible to end up with a similar analysis to the one put forth here; see Druckman & Jackson 2010b, 1800-1802.

or well-performed work one should receive extra emissions quotas as a reward. Which is to say, that people doing good things should be given a larger than normal right to do bad things. Such a demand would hardly be likely to pass through the decision-making process when the connection between rewards and climate change were so direct. Instead, a discussion about alternative reward systems would begin. This discussion is quite evidently in order, even now, when personal emissions quotas have not been implemented.

Even up until the early 19th century, to be wealthy in the USA or Russia meant that you had slaves or serfs. Today, there is hardly anyone who would wish for slaves as a reward. Not because slaves would not facilitate easier living for the master family, but because almost everyone regards slavery as ethically reprehensible and feels deep disgust for it. When one uses one's imagination and considers all the horrors that the excessive production of greenhouse gases will cause for our children and grand-children, one can easily begin to feel as deep a disgust for the system that rewards people with a licence to commit ecocide, as that which rewarded them with slave ownership.⁵⁸

What then is the alternative? Firstly, the existing system of non-material rewards can be extended. Secondly, people can be rewarded with things that have zero or negative net emissions. Such as, for example, organic food⁵⁹ or voluntary aid in everyday tasks, given by people living nearby and respecting the person in question. If, for some reason, somebody should be given an especially large reward, this could be a whole organic farm.

But you cannot live on most of these rewards, can you? How exactly could people get along? The idea behind the alternative reward system is to separate rewards from livelihood. This is what, even today, happens in many walks of life – for example, with most sports. To ensure livelihoods, everyone could be paid broadly equal basic income in money and emissions quotas, which varied to a certain extent depending on a person's phase of life and situation. At the same time, much more basic services than now could be provided publicly or collectively. In this kind of society, the commons, or common property regimes, could thrive in various fields of life.⁶⁰

Wouldn't everyone then belong to the wretched, suffering from poverty? There is a lot of research indicating that one can achieve a good life with a small income and low emissions. It has been shown that although high income and high emissions go hand in hand, well-being, as measured by the Human Development Index, does not keep up with increasing emissions.⁶¹ According to many studies, the subjective well-being in a poor country can be higher than in a rich country. In a comprehensive international survey, the five happiest countries at the turn of the century were all from the Global South: Nigeria, Tanzania, Mexico, Venezuela and El Salvador.⁶² On the other hand, happiness has not increased in many countries despite manifold increases in their Gross National Product. Even though, in most old industrial countries, incomes have grown, on average, four-fold over the last 50 years, subjective well-being has stagnated.⁶³

Although for many the model proposed above may seem good in theory, it will obviously encounter severe opposition. In practice, the model would wipe out income disparities and, through that, most of the class distinctions. The property accrued by the

58 On the importance of imagination for discerning the crimes of the system you live in, see Arendt 1979[1963]

59 See e.g. GRAIN 2009, Melchett 2009, Scherr & Sthapit 2009, De Schutter 2011

60 On commons see e.g. Bollier & Helfrisch 2012, Berkes 1989

61 Steinberger & Roberts 2010, 432

62 Inglehart *et al.* 2004

63 Veenhoven 2011b, Veenhoven 2011a, Hansson 2006, Helliwell & Putnam 2004

rich would retain part of these distinctions, but if incomes from capital were also shared equally, the property would lose much of its importance. Class distinctions could be maintained if the rich exchanged their capital for organic farms with crofters, peasant farmers and even serfs. Yet, the return to feudalism would be difficult for many reasons.

The membership of upper classes hardly makes a person happy, but because it means a distinct life style, is part of his or her identity and entails power, people usually stick to their class positions by hook or by crook. And yet, a portion of the upper classes has always, in conflicts, taken the side of lower classes or that of the public interest of humanity. This phenomenon has often assisted the movements striving to level power in society. Persons liberated from their class bonds may now occur even more than previously, as it becomes more and more evident that the upper-class culture, pushing everyone towards high consumption life styles, is leading humanity towards catastrophe.

Some may now begin to worry that human progress would end if there were no competition for high salaries. However, competition does not necessarily encourage excellent achievements and innovations. There are many studies showing that a human being acts best and most creatively when there isn't stress created by competition.⁶⁴ The greatest insights of humanity may await beyond the competition and growth society.

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64 See e.g. Kohn 1992

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