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Sustainable development committee research paper

Content

Personal transportation as a significant contributor to climate change: Strive for more affordable and efficient alternatives.

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Introduction

In the rapidly changing world we are facing several threats that may be crucial and severe for future generations. One of these is the problem of global warming. And transportation as one of the highest consumers of fossil fuels and producers of greenhouse gasses needs reform. From all sorts of transport is the personal one (mainly in form of cars) least efficient in terms of used fuel and produced greenhouse gasses. In cooperation with economic boom in some less economically developed countries (including China or India) and with massive lobbying of oil producers in some countries it is vital to tackle this problem immediately. The obvious solution is to support public transport and implement different fuels, which are friendlier for Earth. It may sound easily, but in reality it is a complicated task, which requires global cooperation.

Definition of key terms

Emission

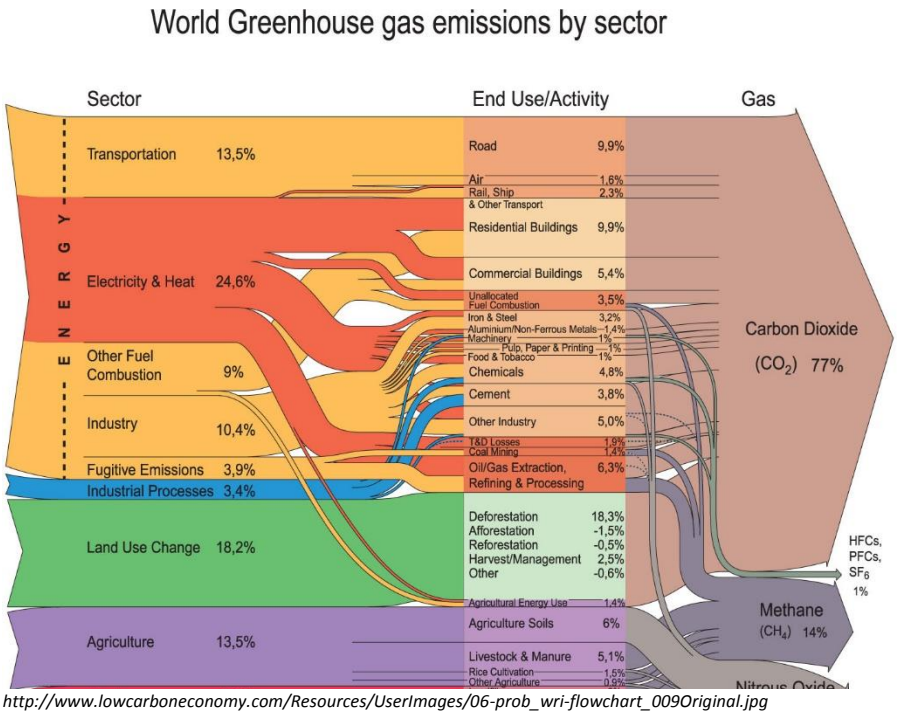
"The production and discharge of something, especially gas or radiation."[1] In the case of transport mostly of carbon dioxide from engines to the air.

Private personal transportation

Mode of transport for very low number of passengers. These include mainly cars and motorcycles.

General overview

Transport is an important part in each country's economy, which makes it essential part of each developed country. In last century globe had developed extensively and so did transportation. Personal transportation is becoming more popular, even with people in developing countries gaining access to modes of personal transport (mainly cars). On the other hand, as cars are in the majority running on petrol or diesel, which are fossil fuels, it is an important



http://www.lowcarboneconomy.com/Resources/UserImages/06-prob_wri-flowchart_009Original.jpg

contributor to the production of greenhouse gasses (mainly Carbon dioxide) with overall contribution (estimate) of 8-11 percent to the world's emission creation.

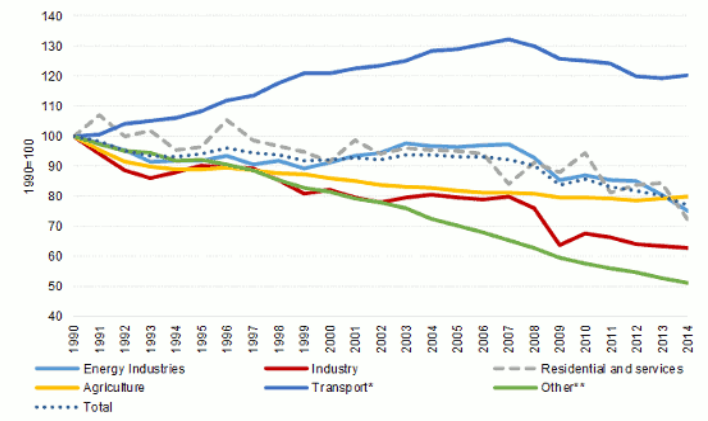
Even though there are attempts in some parts of the world (especialy western developed countries) to start reducing the carbon footprint of cars, it is not enough, due to the fact that numbers of private personal transport vehicles are increasing in an uncontrolled. This increase is especially occurring in less economically developed countries, mainly in Asia and South America, where cars got accessible for the majority of middle and important part of the lower class.

Regional situation

In order to better understand the problem, we can divide the World into different problematic regions:

The European Union (plus bordering excluding Russia)

By the end of cold war and opening of free marked to the Eastern part, private personal transportation did boom in early 1990s. However this region has been of the potential threat from the global warming and was working on a concept of decreasing emissions. This was coordinated by the European Union.



https://ec.europa.eu/clima/policies/transport_en

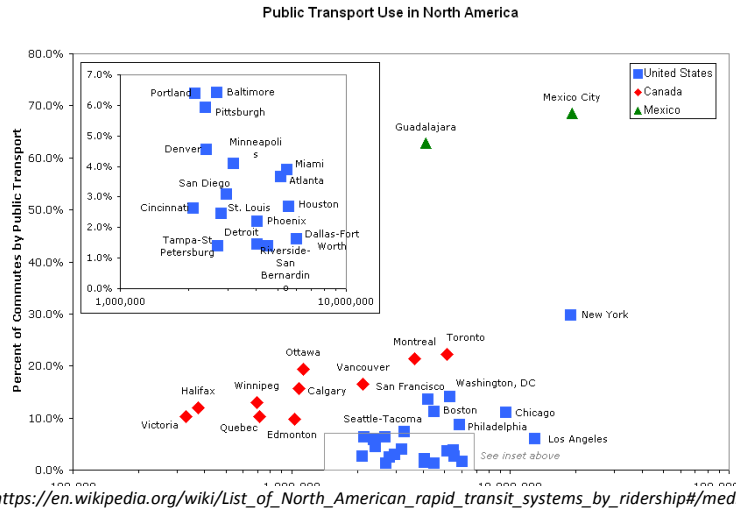
There were several good attempts to try solving this issue including the establishment of *European Emission standards*, support of sustainable public transport through *Civitas* initiative or subsidizing more eco-friendly engine development. All of these lead to a halt in transport emissions increase and to slow decrease (as seen on the graph).

Region of South-East Asia (including China)

This region undergoes very rapid changes and is developing extensively. More and more inhabitants are able to afford cars and the level of emissions had nearly doubled in the last ten years. As these countries often consider environmental health far less important than the economic growth it is fairly hard to promote any emission cutting laws, as well as there are not a lot of alternatives like public transportation. On the other hand, some progress has been done. For example the treaty signed on *Paris conference 2016 agreement*, but all in all the situation the situation is getting worse with low prospects for a possible change.

USA and the countries of Persian Gulf and Arabian Peninsula

These countries are similar to the ones mentioned directly above, however, their reason for not promoting alternatives to polluting private personal transport is their low price of fuel, which is caused by their production of oil. As oil reserves are still sufficient, there is no greater will to start promoting alternatives like public transport (very low usage as seen on the graphics), or to start investing



https://en.wikipedia.org/wiki/List_of_North_American_rapid_transit_systems_by_ridership#/media/File:NorthAmericanPublicTransport.png

into engine development. One of the few achievements is again the *Paris conference 2016 agreement*. In summary, it is crucial for this region to reform in order to stay competitive after oil runs out, as well as to cut emission, which are still rising.

Not all countries are listed as problematic, however, they may soon become. In areas of huge investment and development in South America and some parts of Africa, it is essential to start coping with potential emission problems now, until it will be too late. So it is advisable to all delegates to try finding solutions, which may lead to a lower environmental damage for future generations.

Major parties involved

The parties, which play the most important role include:

European Union

Organization, which unites European states, became the biggest reformer in problematics of personal transportation. It achieved many positive points, and managed to start lowering total production of carbon emissions on its territory.

Various environmental NGOs (Greenpeace…)

These organizations are ones promoting different and more sustainable ways, how to cope with rising carbon emissions from personal transportation. Often their plans are very unrealistic, however, they still may be potentially good starting point for developing plans.

OPEC and other oil producers

As oil producers, these countries have great influence to setting price of oil and limiting production. Cooperation with these nations (Saudi Arabia and United Arab Emirates in our committee) is essential in achieving consensus on future development in this area.

PRC and USA

The two world's biggest economies, the biggest polluters and the two most politically influent countries.

Timeline of key events and previous attempts to resolve the issue

It is complicated to set actual time outline, as the problematics is complex and sections cannot be easily distinguished. But an important turning point in the anti-emission policy as a whole may be seen in the Paris conference 2016. This meeting under United Nations declared new anti-emission policy, which mainly consists of:

- Keeping temperature rise below 1,5 °C above so called pre-industrial levels (around year 1850, when average temperature was 13,8 °C = 0,8 °C cooler compared to today)
- Promising to try bringing global emissions down as soon as possible by cutting emission mainly in electricity production and transportation
- Aiding and financing developing countries in order to develop this policy worldwide

As mentioned above. European Union did work and implement some very efficient projects, as mentioned above, which aim on promotion of public transport. Their greatest project was the implementation of *European emission standards.* This consisted of setting up specifications for carbon-friendlier motors, as well as, limiting those, which do not fulfil them.

Appendix

Some documents mentioned in the research paper, which may be a good base for future actions in this area.

Paris agreement text: http://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf and main points: https://www.theguardian.com/environment/2015/dec/12/paris-climate-deal-key-points.

EU projects promoting public transport usage: http://www.eltis.org/, http://www.civitas-initiative.eu/.

EU grant on development of sustainable car engines: https://ec.europa.eu/research/horizonprize/index.cfm?prize=clean-engine

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Sustainable agricultural and agronomic innovation for food self-sufficiency of LEDCs

Prepared by Anna Zvagulis (external coordinator)

Definition of key terms

Agriculture is the science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool, and other products.

Agronomy is the science and technology of producing and using plants for food, fuel, fiber, and land reclamation. Agronomy has come to encompass work in the areas of plant genetics, plant physiology, meteorology, and soil science.

Food security is defined as “the access for all people at all times to enough food for a healthy, active life” (FAO, 1996).

In contrast, food self-sufficiency is defined as being able to meet consumption needs (particularly for staple food crops) from own production rather than by buying or importing.

The LEDC (Less Economically Developed Country) sector includes countries with a lower GDP and a lower standard of living than MEDC (More Economically Developed Country) countries. Indicators used to classify countries as LEDC or MEDC include industrial development and education.

General overview

The key cause of food insecurity is inadequate food production. Since the global food crisis of 2007–2008, there has been an increasing awareness throughout the world that we must produce more and better food; and we should not be derailed from this goal, despite some relief brought by the good cereal harvests in 2011–2012. This is particularly true in sub-Saharan Africa, which needs and wants to make its own green revolution.

The first step is creating principles for developing more specific solutions that are adaptable to local realities. Perhaps the only thing agricultural systems have in common worldwide is that they provide the most critical resource: food. Beyond this, agricultural systems are incredibly diverse, with crops, livestock, climates, soils, tools, and technology varying from country to country and even farm to farm. Therefore, it is necessary to avoid generic prescriptions of any kind. One-size-fits-all solutions are unlikely to work and solutions will need to be tailored to address regional and site-specific barriers to sustainability. This adaptation process will require the engagement of diverse stakeholders and sectors and is a tough task.

Setting global, science-based goals and targets is the first step. The development goals, targets, indicators, and solutions proposed are meant to be examples to spur further discussion as they will require validation and tailoring of concrete strategies in each country. One solution must encompass many different aspects in order to work for all. The regional approach is best – creating solutions to similar regions and then combining them to create a sustainable way to end the problem of food insecurity, disease, malnourishment and all other related issues once and for all.

Major parties involved and possible solutions

The countries which have the highest percentage of rural population are those which are the poorest. The land is used to feed the people both in towns and rural areas as LEDCs import less food from other countries than MEDCs. Push and pull factors cause rural to urban migration leading to less available workforce as it is usually young males who move.

Land which was growing subsistence crops is turned into commercial agricultural land for cash crops. In Latin American for example, slashing and burning of the rainforest occurs for this reason, which means that the country has a greater source of income and more jobs available. However, it also means that less land is available to grow food to feed the local population and water supplies might be used on cash crops instead.

As the population increases this also puts pressure on the food supply. This leads to malnutrition and starvation, which can lead to AIDS and other epidemics which raise the death rate, as well as wars. This means that there are fewer older people to work on the fields to produce food.

For these reasons and many more, there is need for sustainable rural change in LEDCs and luckily there are many prospects for the transformation of the agricultural sector. Reducing poverty and improving general wellbeing can be done through better access to nutrients. The main ways in which

this can be done are by improving the rural economy, increasing rural food production and improving communication, consequently leading to an increase in living standards which is the ultimate goal.

The main focus is often sub-Saharan Africa (SSA) where food production and consumption trends data shows that dietary energy has been increasing in SSA but not steadily and not fast enough. While agricultural growth has been the precursor to the acceleration of industrial growth in a number of emerging economies such as China, Brazil, and India, for sub-Saharan Africa, current agricultural productivity is low and there have been numerous failures in getting agriculture moving.

There are many charities and nonprofit organizations working in rural LEDCs to help them become more sustainable as well. They usually work alongside communities, teaching natural farming methods to help yield crops. The ultimate goal for LEDCs is to develop self-sufficiency over time.

MEDCs such as the UK for example are also doing things to help develop the agricultural sector and LEDCs can take inspiration from these once they have established the basic needs in their countries. The UK Government invested £68 million in three new Centres for Agricultural Innovation. The hope is that centres like these will stimulate inward investment and help to revolutionise farming practices. The Government's investment will finance world-class laboratory equipment, IT hardware and software, and facilities to test and develop new agricultural technology and products.

The German government, for example, wants to help the African agricultural sector with "Green Innovation Centres", as well as by using the help of German agribusiness, but it is not that simple. One of the great paradoxes of sub-Saharan Africa is that even though its countries have enormous agricultural potential, its inhabitants have to rely on food imports to a considerable extent. More than 200 million people go hungry. Germany's development minister Gerd Müller wants to change this. He has said previously that "Africa can become self-sufficient. And Germany wants to help Africa to help itself," in front of African government representatives.

Appendix and bibliography

Africa and Self-sufficiency

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Food and Agriculture Organization of the United Nations

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* The State of Food Insecurity in the World 2015

Centres for Agricultural Innovation

https://agritech.blog.gov.uk/category/centres-for-agricultural-innovation/