Handling Environment in Czechia: Sustainable Development as Our Common Future

Lucie Tungul and Roman Haken
with a foreword by Bedřich Moldan

Wilfried Martens Centre for European Studies

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Foreword

Bedřich Moldan, former Czechoslovak Minister of the Environment (1990-1991), professor of environmental science

The 2015 United Nations summit adopted Sustainable Development Goals (SDGs) which articulated 17 detailed objectives representing globally accepted fundamental and universal guidelines for economic and social development in the period up to 2030. The goals include five areas: people, planet, prosperity, peace and international partnership. Meeting the goals represents a great challenge for both advanced and less developed countries. Without the active support of the general public, all the people living in our society, one cannot even begin talking about successfully meeting the demanding challenges of the SDGs. This is particularly true when solving current pressing issues, especially those connected with rapidly progressing global climate change and impeding environmental migration. The World Meteorological Organization (WMO) summarized the warning signs of climate change last year. According to the report, the year 2017 was the warmest non-El Niño year on record and the years 2013-2017 were the warmest on record. The sea level has continued to rise along with greenhouse gas concentration and ocean acidification, the Arctic and Antarctic sea ice is well below average and global ocean heat content is at record levels (WMO 2018). Climate change cannot be stopped any longer, but we can help slow down a process, which otherwise will destroy life as we know it. No one is too small to make a change that should begin now.

Summary

The effects of global warming demonstrate that it is inevitable to intensify an ecological understanding of our environment and accentuate the vitality of sustainable development. Sustainable development links a responsible approach to our present and to our future. This publication focuses on several aspects of social and environmental variables, which need to be addressed when discussing a sustainable development agenda on the local, national and European levels: namely energy, agriculture, transportation, waste treatment and environmental migration. It highlights the need for edification, education, information sharing, applying new technologies and increasing public participation in environmental decision-making processes, as public demand and pressure can become some of the crucial engines for change in the near future.

Introduction

In the 1990s, widespread public support, the extremely problematic state of the environment during the Socialist era and the influence of international organizations, including the European Union (EU), led to a visible improvement in the environmental conditions in the country. This notable advancement led the public and politicians to the perception that "the problem had been resolved." There are still, however, numerous gaps and deficiencies. As the *Memorandum on Environmental Protection* (2017) states, "Polluted air still harms hundreds of thousands of people, surface water is polluted by waste, … The development took a wrong turn … the situation today is [in some areas] worse than in the early 1990s." The direct and indirect effects of global warming demonstrate that we need to intensify efforts once again and emphasize the vitality of sustainable development for our survival. Sustainable development involves economic, social and environmental factors, which together form a responsible approach to our present and our future. This publication handles several aspects of the socio-environmental characteristics that need to be taken into consideration when discussing the national and European levels of the sustainable development agenda.

Where We stand

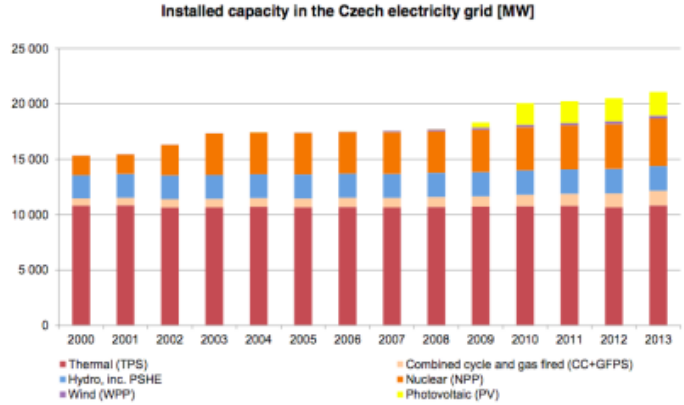
The current state of Czech environmental policy had been most profoundly affected by the accession to the European Union in 2004 but also by additional international commitments and agreements. The State Environmental Policy of the Czech Republic 2012-2020 defined four priorities: protection and sustainable use of resources (including protection of waters, waste policy, land protection); protecting the climate and improving air quality (less emissions, renewable resources); protecting nature and the landscape (preserving landscape and cultural values, improving the environment in the settlements); and a safe environment (preventing hazards, protecting the environment from human-made and natural hazards). The 2015 mid-term review found significant shortages in all these areas. The policy has suffered over the long-run from several mutually connected issues: extensive bureaucracy, fragmentation, relatively low coordination with other sectors, complexity, conflicts of interests, an extensive approach, a lack of finances and inconsistency. The correct defining of the Czech environmental policy requires a strong connection with other sectoral policies such as energy, industry, agriculture, transportation and even foreign policy. We will now investigate each one in more detail.

Energy and Industry Policy

The energy sector ranks among the top polluters in the country, along with transportation and industry. Sustainable energy is an issue in Czechia as over 50% of the energy supply come from thermal power plants (see Fig. 1) and energy consumption is on the rise. It was the highest since 1919 in 2017, partially caused by high economic growth as indicated by its decline during the economic crisis in 2009-2014 (Zilvar 2018). The share of renewable resources remained equal to

previous years at 13%, despite the increase in wind and biogas energy production (MPO 2017). It has been increasing overall though (see Fig. 2).

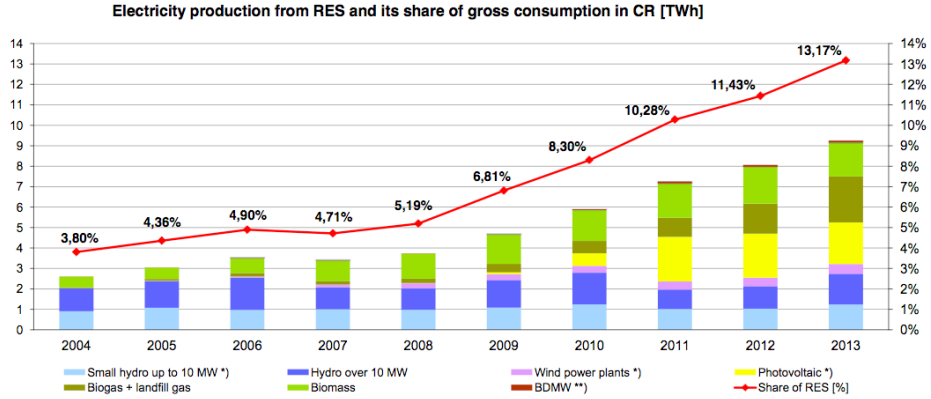
Fig. 1: Installed Capacity of the Czech Electricity Grid



Source: Energy Regulatory Office qt. in Rod, 2015.

Although Czechia has a robust industrial structure, the industry sector claims that the main sources of dust particles, which often pass the limits and pose a serious health hazard, are caused by household heating and transportation. The data of the Czech hydrometeorological institute confirmed that in 2015, 36.4% of of PM_{10} particles emissions were caused by household heating as compared with 6.5% by the public energy sector and heat production. As concerns fine dust $PM_{2,5}$, the household share reached over one half (Průmyslová ekologie 2018).

Fig. 2: Electricity Production from RES and Its Share of Gross Production in CR



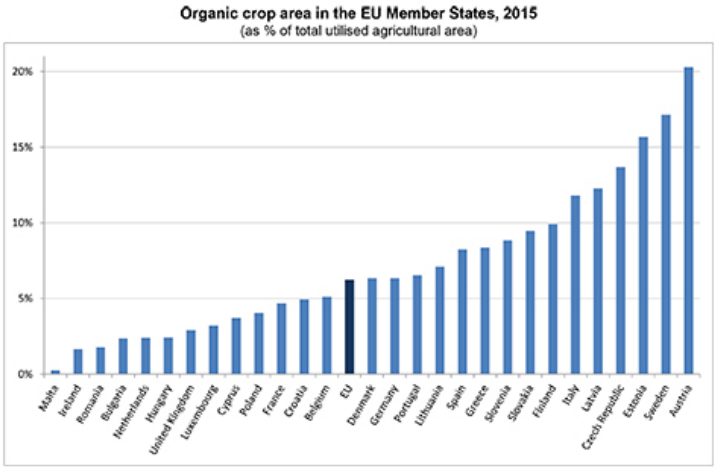
Source: Energy Regulatory Office qt. in Rod, 2015.

New technologies and new approaches, the importance of which will gradually increase, is a challenge for the traditional energy sector but a positive development for the future. These are not only renewable resources, but also smart networks and decentralization. Together with the demand for ecological solutions, they represent a trend supported by the EU and increasingly the market and the consumers. People require self-sufficiency and energy that does not produce emissions. Increasing number of consumers will produce their own energy and sell all or the residual energy to other end-users or back to the supply network. It will be very interesting to follow the case of the town of Písek, which is part of the international project +CityxChange, which aims at decentralizing trading with electric energy (for more, see Knot 2018). Other trends include promotion of new technologies, which have high-energy performance.

Agriculture

One of the crucial areas is environmentally-friendly agriculture. Organic farming provides not only safer food but also takes better care of nature and the landscape. Although Czech organic farming is 10 to 15 years behind Western Europe, it has witnessed several positive trends. The regime of organic farming applied to 17% of cattle, 35% of goats, almost half of sheep and 22% of horses in 2017. Organically farmed land consists of 12.37% of the total utilized agricultural area and is one of the highest in the EU (see Fig. 3). Czechs bought organic food products worth 2.55 billion crowns in 2016, with the share of total consumption increasing by 0.2% to 0.9 %. It has been growing steadily since 2010 but still has not reached the 3% target, which the Ministry of Agriculture wanted to meet by 2016 (Agris.cz 2018).

Fig. 3: Organic Crop Area in the EU Member States, 2015



Source: Organic Research Centre 2016.

Efficient agriculture, which faces the challenges of climate change, has to apply processes and approaches which have a symbiotic relationship with nature. The 1990s post-socialist policies did not give sufficient priority to small farms and family farms although they tend to respond better to the needs of combining agricultural, environmental, and social aspects while acknowledging that it is an economic activity that needs to generate profit. Erber (qt. in ASZ CR 2018) claims that the Czech approach lacks a general framework concept, which would administer land, forests and water mass in their totality. It should aim at improving the quality of land and biodiversity. Adaptation and mitigation need to become top priorities. Drought is a concern of extremely high urgency.

It is positive that the Czech government recently adopted a measure, which limits the area of monocultures on fields threatened by erosion to 30 ha. While the average farm size is 16.1 ha in the EU, Czechia has by far the largest average farm size with 130 ha[1], and therefore this decision will help correct some of the negative consequences of large-scale commercial farming. The primary expected outcome of limiting the area of monocultures is fighting against soil erosion and drought. Most experts agree that the large monocultures cause the limited ability of soil to detain water and that this new measure could help retain up to 30 billion cubic meters of water annually. A decision of the Czech Parliamentary Committee on European Affairs, which recommended that the government implement a redistributive payment which increases the subsidy for the first 30 ha of arable land in the current EU programming period, is related (Havel 2018).

Monoculture is also an issue in Czech forestry, especially with spruce monocultures. Together with extremely dry weather, intensive spruce plantations led to widespread infestation with bark beetles. The region of Olomouc has suffered in particular, with 3,116 m^3 of wood having been cut down in state forests because of the bark beetle in 2014 around the town of Šternberk, with 89,414 m^3 in 2015 and almost 200 thousand m^3 in 2015 (Krajske listy 2018). The first response to this calamity was to plant more diverse forests with a higher share of deciduous trees. Drought, however, is limited to the planting of new trees, because seedlings cannot survive in the dry soil. Investment into retaining water has become another investment priority. In addition, strong winds have damaged forests. Climate change represents a major challenge to Czech forestry and requires modified approaches and high investment into renewal.

Transportation

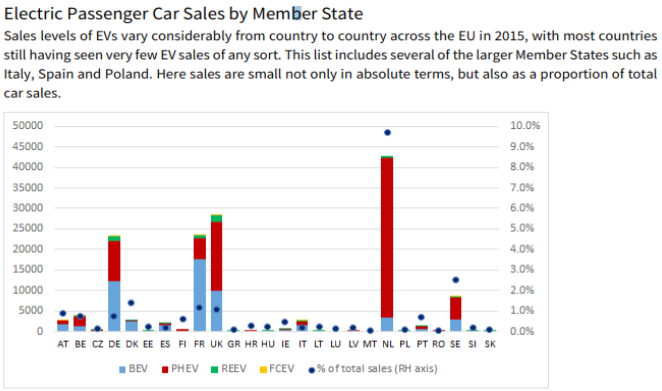
Transportation is another sector with a huge negative impact on the environment. The share of transportation on total Czech emissions has been on the increase, having been caused by positive developments in energy and industry. The absolute amount of emissions from transportation has been on the decrease due to new technologies and modern processes when producing new vehicles. The ratio of

[1] After the UK leaves the EU, the second largest will be Slovakia with 80 ha (Eurostat 2016).

personal and public transportation needs to change in favour of the latter, including increased use of railways, ecological means of transportation, investment into walking and cycling routes and noise limitation. Most transportation at present represents a high burden for the environment, with the most problematic being freight transport. Freight traffic mostly uses fossil fuels, which harm the environment and human health. Often quoted in this respect is an article published in G*uardian*, summarizing research findings according to which one giant container ship emitted "the same amount of cancer and asthma-causing chemicals as 50m cars" (Vidal 2009). Although the EU and its international partners have started to address the up until now quite neglected area of environmental safety in maritime transport, limiting emissions of land-based transportation continues to be an important topic as well. New technologies promise a better future if they are implemented within a broader context.

Although Europe is the second largest market for electric vehicles, the Czech public shows much less interest in new types of vehicles than standard cars (see Fig 4). Hybrid cars and electromobiles are still far more expensive and have questionable travelling distances. Czechia is not considering at this point subsidizing their sales or offering tax discounts on electromobility. The high average age of cars in the country slows down dynamic growth in the industry. Chmelik from ČEZ Clean Energy (qt. in iHNed.cz 2018) has argued that the Czech market is ready for electromobility and that we will see an increase in this type of transportation; with thousands soon and tens of thousands by 2020-2025. Škoda is rather late in the business when compared with other car manufacturers. It plans to start production of electric cars in 2020 as part of its 2025 strategy. It plans to have only 5 electric models by then. The first plug-in hybrid drive model will arrive in 2019 (Skoda 2017).

Fig. 4: Total EV Car Sales and EVs as Percentage of Total Sales in the EU Member States in 2015.



Battery Electric Vehicles (BEVs), Plug-in Hybrids (PHEVs) Range-extender electric vehicles (REEVs) hydrogen fuel cell electric vehicle (FCEV)

Source: Fergusson n.d.

The infrastructure connected with electromobility is crucial, especially the network and the time of recharging. Ivo Hykyš, head of e-charging and e-mobility at Siemens Czechia (qt. in iHNed.cz 2018) highlighted that this rapidly growing sector needs to be evaluated in the overall picture of the Czech energy sector, which as we have seen earlier is very much dependent on fossil fuels. Electromobility "is pointless in that case" (Hykyš, qt. in iHNed.cz 2018). Another aspect is the high number of personal cars in Czech cities. Increased attention needs to paid to reliable, well-structured systems of public transportation that would be user-friendly and accessible. The use of low emissions or non-emission public transportation would significantly contribute to a better environment but also involves an important social benefit (Kuželka, qt. in iHNed.cz 2018). The number of electrobuses, for example, is rising dramatically thanks to EU funds, while additional grants support the purchase of non-emission and low-emission vehicles such as trams and trolleybuses.

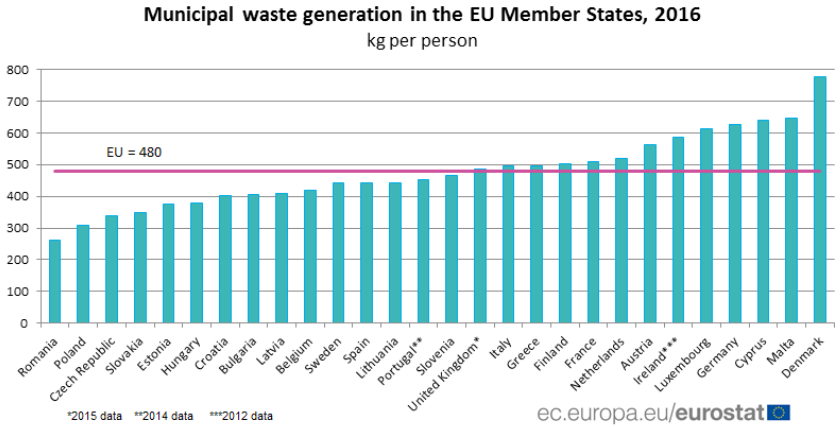
Sustainable mobility is much more, however, than electromobiles, electrobuses or even autonomous vehicles. It also includes the use of new technologies and a shared economy as defined for example in the Mobility as a Service (MaaS) concept, which aims to serve people while being ecological at the same time. It combines multimodal and sustainable mobility services such as integrated trip planning, one-stop-shop, includes various types of public transportation and shared transportation and accompanied services, such as eparking, digital information boards (charged by solar energy), streamlined public transportation, applications with timetables (including QR codes at every stop), bike, scooter and car sharing, ebike chargers, specifically adjusted parking for bicycles, etc. Although a recent Dutch study showed that it was not going to significantly change patterns in urban mobility (Smartcityvpraxi.cz 2018), as it only appeals to some segments of the market, especially young people, it represents another feature which enables people to make some difference in their everyday lives.

Recycling

Czechia has a very good record in recycling. Czechs are second in the EU after Belgians. The amount of recycled waste per person is on the rise. While 12% of municipal waste generated in 2004 was recycled and composted, it rose to 35% in 2014. In 2016 it was 44.8 kg per person, an increase by 2.5% from the previous year (EEA 2018). Around 72% of Czechs regularly sort waste, and we are witnessing a positive development not only in terms of the absolute numbers, but also as concerns the quality of recycling. Waste collection is available in 99% percent of the territory; 20,586 companies and 6114 municipalities are part of the Eko-kom system[2] (Kralova 2017). Waste production is also one of the lowest in the EU (Fig. 5), but remains a major concern.

[2] For more information, please see https://www.ekokom.cz/en.

Fig. 5: Municipal Waste Generation in the EU Member States, 2016



Source Eurostat 2018.

Migration

A major concern of climate change is not only its direct impact on Czechia but also climate driven migration. Migration is not a simple concept and research has shown that it always has several underling reasons, "including individual, social, economic and political causes" (European Commission 2015). It represents one of the crucial points where foreign policy meets sectoral policies including environmental policy and where international cooperation is the only feasible approach. The World Meteorological Organization recorded 2017 as the most expensive year for severe weather and climate events.[3] Heat-related diseases are on the rise, "30% of the world's population now [live] in climatic conditions that deliver potentially deadly temperatures at least 20 days a year… In 2016, weather-related disasters displaced 23.5 million people" (IMO 2018). The risks of climate driven migration should not be underestimated and should be considered equally important as with any other topic of environmental concern. As natural disasters become more frequent and more devastating, we will see a rising number of people displaced by drought, floods, hurricanes, forest fires, and related events such as wars over scarce resources, and epidemics. Climate change could join social, political and economic push factors that already exist such as weak institutions, poverty and overpopulation,

[3] "'The start of 2018 has continued where 2017 left off – with extreme weather claiming lives and destroying livelihoods. The Arctic experienced unusually high temperatures, whilst densely populated areas in the northern hemisphere were gripped by bitter cold and damaging winter storms. Australia and Argentina suffered extreme heatwaves, whilst drought continued in Kenya and Somalia, and the South African city of Cape Town struggled with acute water shortages,' said WMO Secretary-General Petteri Taalas" (WMO 2018).

and will grow stronger. While most migrants at present do not have the means to reach Europe, this might change in the future. Czechia should support the EU Emergency Trust Fund for Africa and the extension of its activities far behind border controls and measures against smugglers and human trafficking. More than simply refugees or economic migrants, we have to prepare a new category of "climate migrants" (European Council on Foreign Relations n.d.).

Other Instruments

New technologies have been mentioned several times already. Various new approaches to environmental challenges are addressed by so-called eco-innovations, which address a broad range of issues including waste treatment, smog, drought, floods, strong winds, transportation, etc. (SFZP 2018). Other than legislative tools, national and European programs, environmental policy is also formed by additional supportive measures raising awareness such as ecolabelling and information portals such as the Czech Environmental Information Agency (CENIA) established by the Ministry of Environment in order to collect, evaluate, interpret and distribute environmental information (Cenia n.d.), the Information Portal for Protection of Nature (ISOP), which administers and publishes expert data regarding the protection of nature and the landscape; the water management information portal VODA, and many more. These do not need to be only national, but also local such as the open data energy portal of Písek, where the public can follow real time consumption of heating, electricity and water by individual public buildings online (http://portal-pisek.enesa.cz/day) as well as on a smartphone application. Also included here can be the internet of things, education of the public, organizing seminars and lectures, local referenda, giving the public the opportunity to discuss new proposals, tools, projects, technologies and approaches that are favourable to the environment.

Participatory Strategic and Action Planning

Appropriate public participation is increasingly perceived as a key factor for successful planning of regional development, which offers a comprehensive approach to social, economic and environmental issues directly related to regional development. Engaging a wide range of protagonists directly affects the measures adopted to assist regional development. Important international developmental agencies have tried to engage local stakeholders since the 1990s, not only in development planning but also in specific development projects. A related issue is the rising effort of public administration to provide more transparent decision-making. The reasons for engaging the public might be many but usually have legal, socio-political, or pragmatic reasons.

Authorization and implementation of projects with a social impact naturally attracts the attention of the public. The current administrative and civil codes provide citizens with sufficient tools to control the results. Administrative and judicial review have

become a common practice as democratic institutions have developed and matured. Communicating with the public pays off. Socio-political reasons for engaging the public are based on findings that a compliance with the legal and technical norms does not guarantee smooth implementation of the decisions. The most important problem in this category is the so-called Not In My Backyard (NIMBY) syndrome, which described inhabitants who oppose a proposal on technically non-rational grounds. A community suffering from *apriori* NIMBY syndrome opposes any technical argumentation and favours irrational arguments against the proposal. If left unattended, it can lead to group hysteria. NIMBY can cause a rejection of the proposal regardless of its technicality compliance. Good communication on the part of the decision-maker with the public is the first step towards the acceptance that it is a competent person, who can make decisions that change his or her life conditions.

Even the best possible environment allows only a limited number of participants to engage directly in preparing the strategy. The initiators of the strategic process should assess which activities would allow a larger group of people to take part in them and how to make the process transparent and just. Each goal should be defined first ("purposive action") and presented to the public. It should be clear from the start how the results of public participation will be used, and the provider should be responsible for ensuring effective public participation in the planning process. Every process of strategic planning should be evaluated upon its conclusion. It should provide answers to the questions as to whether and to what extent, the public participation was effective defined as having an impact on the decision.

Conclusion

This publication addressed a range of issues, which relate to the environmental aspects of sustainable development in Czechia within the broader European framework. We have seen that despite many positive changes, the country needs to step up its efforts and especially in areas such as energy, agriculture and transportation, i.e., the areas, which have the largest impact on global warming, becoming far more proactive and responsible. It is advisable to follow the example of leaders in the EU. Czech environmental policy needs to become better coordinated, with streamlined guidelines, and more information and incentives available to accelerate change. The government needs to engage people in the process and public demand and public pressure can be some of the most powerful drivers of change. Participation on the part of the public in environmental decision-making processes and community planning is at this point too fragmented. Many people do not know how to connect environmental measures, which would improve individual and community lives in both urban and rural areas, with positive economic and social value added.

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