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Education and Participation in the field of Climate Protection

A comparison between six countries

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1. Introduction

Since climate change appeared on the political agenda, there has been a lot of discussion around the world as to how to curb global warming, especially among politicians, scientists and environmental groups. The 1992 United Nations (UN) Conference in Rio de Janeiro and the UN Framework Convention on Climate Change (UNFCCC) represent important milestones in the global effort to stop global warming. The ultimate objective of the UNFCCC is the “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system” (UNFCCC, Article 2). To achieve this, Conferences of the Parties (COPs) were established to support the implementation of measures to prevent and adapt to climate change, and thus ensure the ultimate objective of the UNFCCC is achieved (Holz 2010). Since the publication of the 4th progress report of the Intergovernmental Panel on Climate Change (IPCC) in 2007, it has become the general scientific and political consensus in most countries that global warming is happening and that anthropogenic emissions of greenhouse gases are “very likely” to be the major driving force of this process (IPCC 2007, 39, Mueller et al. 2007, 163).

Climate protection measures have mainly focused on reducing greenhouse gas emissions (in particular CO₂) through technical innovations and changes in energy production, transportation and industry, which are essential, but are not sufficient to reach the objectives as stand-alone measures. It is still necessary to invent and implement intelligent climate protection measures, accompanied by a change in individuals' lifestyle and behaviour. Therefore, citizens have to be made aware of climate change and become involved in stopping global warming. The changes that are required will affect the everyday lives of the whole population. Therefore, it is important that people are aware of the causes and consequences of climate change and are given the opportunity to be involved in decisions on how to react to it appropriately.

As climate change is an issue that has and will impact the lives of everyone on this planet especially in the future, young people in particular have to be made aware. They should be given the opportunity to participate in decision making. Education and the involvement of citizens should be given a key role in global efforts to mitigate and adapt to climate change. The UNFCCC has taken this into consideration in Article 6, calling on national governments to promote education and training, public access to information and public participation in the field of climate protection. The impetus to involve citizens and to enable young people to become drivers of the transition to a more climate friendly society is one of its key objectives (UNFCCC, Art. 6). Although the UNFCCC was signed in 1992, it took a further 10 years before, in 2002, the New Delhi Programme gave a new dynamic to climate change education (education for sustainable development) and public participation in climate-related policy sectors. Both of these fields of interest became especially vibrant following interaction with already established structures.

A further decade has passed since the New Delhi Programme was implemented, requiring a review of the achievement of the ambitious goals in Article 6 of the UNFCCC and the New Delhi Programme. This will ascertain whether climate change education and public participation in climate-related issues have been really established satisfactorily. Moreover, questions arise as to how climate change education and participation in climate-related issues function in practice.

This study tries to answer these questions. The aim here is not to provide a comprehensive, global overview of climate change education and public participation. Instead, it provides insights into the current state of research around the world and the actual work of climate change educators and practitioners in the field of public participation. The study aims to highlight experts' and young peoples' experience of climate change education and participation in climate-related issues in selected European countries and the USA.

Literature research was carried out together with qualitative interviews with experts and young people in Austria, Denmark, the Czech Republic, Germany, the United Kingdom and the USA, which were conducted between summer 2012 and spring 2013. The aim was to identify good practice and shortcomings as well as barriers to effective climate change education and public participation in this field. Hence, the study addressed the following research questions:

- What are the general attitudes of citizens and politicians towards climate change and climate protection in the selected countries?
- How have the topics of climate protection and climate change been integrated into educational programmes?
- Which methods are used in teaching about climate change?
- How can people participate in climate-related issues in the selected countries?
- How is youth participation taken into consideration in the fields of climate change and climate protection?
- Which methods and forms of media are used to enable and promote participation in climate protection issues?
- What are the deficits and unused opportunities regarding public participation processes in climate-related issues and climate change education in the individual countries?

First, the terms used in this study are comprehensively defined and an overview of the relevant literature and the current state of international research is given. The findings from the qualitative survey are then presented, followed by the study's international conclusions in the final section of this report.

2. Study design

This study was based on literature research and a comparative qualitative survey of experts and young people who are active in the fields of education and/or participation in environmental and climate-related issues. Between summer 2012 and spring 2013, interviews in Austria, Germany, the Czech Republic, Denmark, the United Kingdom and the USA were conducted by researchers from the Independent Institute for Environmental Issues (UfU) and project partners in the specific countries. The interviewees consisted of experts in climate protection issues who are involved in particular in education and participation, and young people who are active in youth environmental organisations. All of those selected have experience in education and participation in climate-related issues. At least two experts and one young person were interviewed per country.

Due to the low number of interviewees, this study is not representative, and rather presents the subjective views and opinions of people who are involved in the practical application of climate change education and participation. This enables various tendencies and trends in the specific countries to be identified.

The interviews were based on a standardised questionnaire to ensure that every interviewee answered the same questions, which were divided into the following subject areas: “General attitude towards climate protection and climate change”, “Environmental education and climate protection/climate change”, “Opportunities for public participation in climate-related issues”, and “Opportunities, procedures and methods for youth participation in climate-related issues”.

All interviews were recorded and transcribed. Using the Summarising Qualitative Content Analysis method as proposed by Mayring 2003, the written interview texts were paraphrased, generalised and abbreviated, so that the key statements could be filtered out. These were summarised so that a general assessment of the situation for each specific subject area was created for every country. Contradictory statements by interviewees from the same country were identified. Issues of special interest and international relevance were determined and are explained in the final conclusion.

3. Definition of terms and insights into literature and state of research

3.1 Climate Change Education

Knowledge, skills and behavioural change are all necessary to ensure the mitigation and adaptation to human-induced global warming are successful. Education is key to this, and can enable individuals and communities to make informed decisions and take appropriate action (UNESCO 2010, 5). Children and young people, the future's decision makers, in particular, should have well-founded knowledge on current and future environmental and societal challenges (UNESCO 2010, 5). Therefore, education and awareness of all relevant aspects of climate change is needed around the world. This demand is addressed by the two major climate treaties: The United Nations Convention on Climate Change (UNFCCC) and the Kyoto Protocol include articles calling on governments to implement education on climate change in their countries (Anderson 2010, 5).

Within the last couple of years, activities and approaches under the terms "climate education" and "climate change education" (CCE) have become highly visible. UNESCO recently pointed out that climate change education is currently a rapidly growing field, with 59% of countries reporting to have activities in their country. "Climate change education" as search term on "Google" is growing faster in annual hits than the slightly older concept of "education for sustainable development" (ESD) (UNESCO 2012, 17-19). However, the verdict of the International Alliance of Leading Education Institutes (IALEI), who in 2009 published the most comprehensive independent survey to date, is still valid. It states that climate change education is "still very much in its infancy" (IALEI 2009, 14).

No one has taken a clear lead in the development of climate change education on an international level. It is promoted by educational ministries, schools, non-formal education programmes, non-governmental organisations (NGOs), and UN agencies, like UNEP, UNESCO and UNICEF. (Anderson 2010, 8) UN institutions, especially UNESCO (acting as the lead agency of the UN Decade of Education for Sustainable Development, DESD) and the UNFCC (monitoring progress made under the Convention), are the major international publishers of literature in the field of climate change education. One of the rare independent studies into the status of climate change education in various countries was conducted by the International Alliance of Leading Education Institutes (IALEI) in 2009. On a national level, literature that tries to give an overview of climate change education is very few and far between. Systematic research is rare in most countries (IAELI 2009, 23). Most publications that give an insight into the situation of climate change education in a specific country are related to specific projects. It would go beyond the scope of this study to present a comprehensive overview of climate change education projects in every country around the world. Therefore, the study focuses on publications with an international scope.

There is not a single definition of climate change education in terms of its content, scope and purpose. However, it is obvious that climate change education has to have a much broader scope than that of the traditional natural science curriculum, which is limited to teaching the composition of the atmosphere and processes according to the academic disciplines climatology and meteorology. It is often the case that humans' influence on the climate as well as the social, political and economic impacts of climate change on human beings and the environment are omitted (UNESCO & UNEP 2011).

In most countries, climate change is taught as part of classical school subjects like geography and earth science (UNESCO & UNEP 2011). Comprehensive climate change education, however, should be integrated into further disciplines right across the curriculum (UNESCO & UNEP 2011), teaching the causes and impacts of global warming from the perspective of natural, political and social science and finding solutions both on the political and the individual level. This means that the purpose of climate change education should basically be helping the general public and especially young people to understand and relate to climate change (UNESCO 2010, 5).

When formulating general conclusions about successful practical approaches to climate change education, it is necessary to bear in mind that success is often dependent on the specific environmental, social and economic conditions in a country, region or city. As conditions vary greatly it is clear that there can't be a "one size fits all" solution.

According to a guidebook for educational planners and practitioners published by UNESCO & UNEP (2011), the content of climate change education can basically be split into two major sub-areas: education on mitigation and education on adaptation. While education on mitigation focuses on making people aware of causes and impacts of increasing greenhouse gas concentration in the atmosphere and presenting solutions to this issue, education on adaptation aims at preparing people for the consequences of global warming, including uncertain futures and preparation for hazards and disasters (UNESCO & UNEP 2011).

Climate change education on mitigation basically consists of teaching about the impact our lifestyles and consumption patterns have on the climate and environment as well as about possible ways to decrease these effects. There are many ways in which individuals and communities can reduce their impact through changes in their lifestyle, consumption pattern, energy use, and mobility behaviour (UNESCO & UNEP 2011). Climate change education should thus promote saving energy, the use of renewable energy sources and sustainable consumption. Learners should be made aware of the relationship between global effects and local and individual solutions and should be motivated to act accordingly (UNESCO & UNEP 2011).

Climate change education for adaptation focuses on the inevitable impacts of climate change and aims to increase people's knowledge on how to be prepared for these impacts. Climate change will have an impact on the lives of many people and communities around the world. Climate change education should enable individuals and communities to make the necessary changes in their livelihoods to prepare for the occurrence of natural disasters, reducing their vulnerability to climate-related hazards and empowering them to make well-founded decisions on how to adapt to the impacts of climate change (UNESCO & UNEP 2011).

Climate change is a very challenging subject to teach. According to the cross-national report by the IAELI (2009), climate change poses specific educational problems: on the one hand there is the problem of uncertain, intimidating future scenarios, and on the other, that possible responses are connected to complex ethical, political and technical decisions. Learners have to deal with uncertain knowledge and risks as well as become aware of complex social dynamics. Furthermore, truly interdisciplinary learning and thinking are required to understand climate change. This is challenging for the traditional education system that is separated into different academic disciplines (IAELI 2009, 14). As a reaction to this complexity there is a danger the matter will be oversimplified or be treated as something that cannot be altered (IAELI 2009, 14). Temporal urgency and the need for prioritisation, characteristic of the discourse on climate change, have also affected its expression in education. This justifies the setting of effective behavioural rules in fields such as emissions reductions or transport options. It could also heighten the importance of other sustainable development topics, as climate change will generally exacerbate other problems. The issue is also complicated by efforts to mitigate and adapt to climate change (IAELI 2009, 15-16). Against this background both the content of climate change education and the methods used to teach it may differ considerably. These differences may indicate a divergence in the underlying assumptions as to the purpose of climate change education.

The authors of the cross-national report see climate change education as an intensively discussed area of research and highlight the need for dialogue between stakeholders as well as scientists (IAELI 2009, 16). It is evident that the large range of positions and practices are not likely to disappear. Tension as described above, seems to be a permanent feature of this process in many countries.

UNESCO, in its only policy paper dealing explicitly with the content and methods of climate change education, identifies some generally-valid assumptions: To understand climate change and react to it adequately, people need to have knowledge in numerous fields, including knowledge of the “distinctions between different scientific concepts and processes associated with climate change [...]; [distinctions] between certainties, uncertainties, projections, risks [...]; history and interrelated causes [...]; mitigation and adaptation practices [...]; consequences”. Also an understanding of climate change’s “time-space dynamics” and “different interests that shape different responses to climate change” need to be conveyed (UNESCO 2009, 3).

How climate change education is implemented and how it is embedded into the educational system differs a lot around the world. Educational programmes relating to climate change and climate protection are being set up independently as well as being integrated into environmental education (EE), education for sustainable development (ESD), science education and various other school subjects. Climate change education can be part of the official school curriculum as well as informal education methods. As has been the case for education for sustainable development, a wide array of actors and institutions are involved in the promotion of climate change education. Notably non-governmental organisations (NGOs) and local initiatives from civil society have been promoting its inclusion in educational programmes both in and out of the school setting. It is therefore relevant to recognise that climate change education exists in a variety of forms.

When compiling an international overview it is important to consider the differences between local and national approaches to teaching about sustainable development and climate change as well as varying programmes and approaches proposed by government and other stakeholders. The cross-national report by the IAELI sums up findings on the situation in 10 countries, including the UK, the USA and Denmark, which are also subjects of our study. The IAELI study differs from this one in that it contains more newly industrialised countries (China, Korea, South Africa, Singapore, Brazil) and the focus lies mostly on in-school education. Still, its findings give a valuable insight into our research questions.

The report describes climate change education as being still at a very early stage of development, not yet having found a clear standing in relation to fields such as education for sustainable development, environmental education and science education in some countries (IAELI 2009, 14). Looking at the countries analysed, the field of climate change education is forecast to develop in three different directions: For the USA and China it is predicted climate change education will be integrated into science education, which would basically mean focusing on teaching climate science, and promoting behavioural change within the school setting. However for Australia, the UK, South Korea, and Singapore, climate change will be integrated into the framework of education for sustainable development. This is a more interdisciplinary approach that is open for interpretation with regards to the direction and implications of sustainable development. Thirdly, it is predicted for Denmark that climate change education could stand alone as a topic in science education and also related to education for sustainable development (IAELI 2009, 15).

The cross-national report is greatly concerned with the purpose of climate change education. The question of how climate change education is integrated into the educational system and how it is put into practice is also connected to conflicting ideas on the normative objectives of education for sustainable development, i.e. the contradiction between a “behaviour modification perspective” on the one hand and an “empowerment perspective” on the other (IAELI 2009, 11). The latter perspective focuses on interdisciplinary education, critical thinking and the ability to judge, thereby linking education to the development of proactive skills. The former could be said to reduce the complexity of the topic and lead to a reactive attitude towards sustainability.

The 2012 review on the implementation of the amended New Delhi Work Programme by the UNFCCC provides a second international perspective on the subject. It mainly reports on successful trends on the global level, which, even though the findings are very general and undifferentiated, can be seen as providing a large-scale impression of the progress made in the field of climate change education.

Thus, climate change is integrated into school education at all levels in “most developed countries and many developing countries”, increasingly being integrated into various subjects (UNFCCC 2012, Paragraphs 9 and 10). The amount of teaching material is growing rapidly, often due to support by NGOs and international networks. New forms of learning have increased, regularly using whole-school approaches that integrate the topic into various different subjects, often including “greening” the school and involving parents, media and the local community (Paragraph 12).

Informal education on climate change meanwhile has become manifold: The topic is treated in various out-of-school settings. Education is being included as an additional goal in other environmental projects more and more (Paragraph 14). Young people have adopted the issue as their own and are actively setting up non-formal organisations that are “run by volunteers, use experiential learning, provide progressive programmes, involve peer groups and develop leadership as well as a value system” (Paragraph 13). The aspect of the adaptation to climate change has been included into educational programmes, alongside that of climate mitigation. Compared to the previous review of the New Delhi Work Programme from 2010 (UNFCCC 2010), all trends seem to be heading in a positive direction.

3.2 Participation in climate-related issues

It is true that public participation has always been an essential part of the democratic system to a certain extent; however, debates on public participation have increased since the last decade of the 20th century. Since the concept of sustainable development appeared on the global political agenda as a consequence of the UN Conference on Sustainable Development in 1992 (Rio Conference), participation has become one of the key terms in discussions around future societal development (Heinrichs et al 2011). At the Rio Conference, the international community jointly agreed on the principles of cooperation and participation in dealing with global challenges (Heinrichs et al 2011). In the preamble of the third part of Agenda 21, this objective is formulated in specific terms: “One of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making. Furthermore, in the more specific context of environment and development, the need for new forms of participation has emerged” (UNEP 1992). As climate change is currently one of the most important global challenges that will have an impact on most human beings around the globe, the need for public participation and citizen involvement in decision making is obvious. Therefore, the issue of participation has been also taken on by the UNFCCC, likewise a product of the Rio Conference 1992.

The term 'participation' is widely used as a democratic principle and as an umbrella term for numerous democratic practices. On closer examination, the term can be divided into public participation and civic engagement. Public participation describes individuals' activities that aim to influence decisions within the political system (Kaase 1995, 521 cit. Walk 2008, 88). Civic engagement goes beyond this, including activities that are not directly integrated into political decision making such as volunteering, being involved in political parties, unions, clubs and projects concerning all aspects of social life and civil society (Walk 2008, 17-18, 185-187). Taking both aspects of participation into consideration is an essential starting point to recognise all of the action to stop climate change that is taking place in today's society.

The topic of climate change has been taken on by stakeholders both on the inside and outside of institutional political processes. Participation by citizens is not confined to the formal opportunities provided by the system. A very broad understanding of participation is used in this study that includes all forms of activity by members of the public that have a direct impact on the climate or aim to influence *decisions* that have an impact on the cli-

mate. Thematically we apply an equally broad understanding of “climate-related issues”. This term includes all actions that have a direct or indirect impact on the climate. These range from policies that are directly linked to climate protection, such as energy strategies and climate action plans, to law-making procedures. This can also include spatial and land use planning as well as individual construction projects that have an impact on the climate as it is important not to exclude effective and valuable climate-related processes, even if they do not officially come under the heading of ‘climate protection’.

In modern democracies, there are many opportunities for people to participate in political decision making, the most obvious of which being general elections. In many countries different political parties have different attitudes towards the importance of the issue of climate change. Citizens can vote for one party over another based on their climate policy. However, voters can only influence the government's vaguely defined political course for a certain period, and have no influence over individual political decisions and issues. Additionally, political parties or candidates are not forced to follow through with all of their election promises, meaning that the public's direct influence on specific political decisions remains relatively low. In countries that already have high climate standards, such as Germany or Denmark, most of the political parties support activities to prevent climate change and their attitudes towards the issue in general don't differ significantly. This decreases the real influence of elections on specific decisions concerning climate change (Sperfeld & Zschiesche 2012).

A more specific opportunity for the public to participate is known as 'direct democracy', i.e. participation through petitions, ballots and referendums. How direct democracy is embedded in political systems differs a lot between countries. The real influence that it can have on a political decision depends on the institutional framework and its binding character. There are distinct institutional devices, such as referendums initiated by local residents or civic groups (“citizens' initiatives”) and referendums initiated by national governments, local or regional councils (Smith 2012). Referendums can address both law-making procedures and administrative decisions (Hafner 2012). In many countries, referendums are only consultative, but in some, the outcomes of local referendums are binding (Smith 2012).

Direct democracy on climate issues has many different applications: Petitions and ballots can aim to influence the government to take a specific legal action, such as introducing stricter standards for the emission of greenhouse gasses. Local and regional referendums are also often used to influence administrative decisions with the intention of preventing projects that are damaging to the environment, such as motorways and coal-fired power stations (Sperfeld & Zschiesche 2012, Gleason 2012, Smith 2012).

Public participation is also embedded in administrative decisions, including spatial and land use planning and planning procedures for individual construction projects. In this context there are formal public participation procedures that are obligatory for the approval of a plan or project as well as informal public participation procedures, which are carried out on a voluntary basis.

In EU Member States public participation in administrative decision making is required by many European Directives. Formal participation mostly takes place according to predefined procedures, including the information of the public, the publication of documents, and the

consultation and commenting phases. Spatial planning and construction projects can have a significant impact on the climate, which is why participation on such procedures is often related to climate issues. Formal public participation is essential for the approval of a plan or project, with the intention of legitimising decisions through transparency and control. Informal public participation is often carried out in addition to make the planning process more effective for example through the use of local knowledge. This increases the identification and acceptance of the project and helps to avoid conflicts (Heinrichs et al 2011).

There are many further opportunities for participation in climate related issues, including protest, lawsuits filed by citizens and organisations, as well as self-organised actions which have a direct impact on the climate.

Due to the very wide understanding of participation that is used in this study, it is difficult to present a comprehensive overview of the current situation. For this reason, it was decided to conduct a literature survey to identify important publications in this field. In its 2010 review and 2012 evaluation of the implementation of the New Delhi Work Programme, the UNFCCC analyses the progress various countries around the world have made with respect to participation in climate issues. A very positive conclusion is drawn here which may assist in understanding the progress made on a global level.

The UNFCCC acknowledges the use of participatory processes by “a significant number” of contracting states. Even national strategies on climate change are found to have been influenced by public participation. “Among the measures taken to solicit the views of the public are national dialogues, round-table discussions, public hearings, conferences, online votes, and radio and television, phone-in discussions.” (UNFCCC 2012, Paragraph 49). Furthermore, procedures for the public to comment on draft legislation concerning climate change have been established in some countries, including via online tools (“e-participation”) (UNFCCC 2010, Paragraph 45).

In contrast to these positive aspects of the development of public participation procedures, shortcomings and barriers were also identified by the UNFCCC. Accordingly, political parties and other stakeholders have identified the need to further encourage and enhance public participation in climate related issues. In many countries, effective public participation is hindered by a lack of institutional arrangements and public awareness. The level of public interest is low in many countries and represents a challenge for the organisation of participatory processes. This means that activities to promote public participation within planning procedures and other climate related issues needs to be enhanced (UNFCCC 2010, Paragraph 51). A further problematic aspect is the equal inclusion of all groups in society, which is not guaranteed in many countries. Thus, in some countries, effort is needed to involve women, young people and indigenous, local communities in public participation (UNFCCC 2012, Paragraph 56).

Walk (2008) offers a thorough investigation of the opportunities to participate within a multi-level governance system of climate policy, focusing on the European Union and especially Germany. Her assessment of modern forms of governance critically asks for improvements of effective public participation and democratisation processes (Walk 2008, 14).

In many countries, access to information on environmental issues is granted by authorities as a prerequisite for many participation processes, due to their compliance with the Aarhus Convention. However, the implementation often lags behind the convention's standards (Walk 2008, 157). Further important aspects introduced by the Aarhus Convention are the inclusion of public participation in planning procedures and juridical aspects such as the right to file a lawsuit in case of denied access, information or insufficient public participation (Walk 2008, 158). Furthermore, the Aarhus Convention is of special importance as the only binding treaty between nation states that strengthens the role of the general public and civil society in environmental protection (Walk 2008, 158).

Walk also considers activity concerning Article 6 of the UNFCCC to be of special importance to questions of participation in climate protection (Walk 2008, 158). However, her analysis mainly considers the strategies set out at the beginning of the implementation of the New Delhi Work Programme (from 2002 onwards) as well as the international evaluation process of 2004. In Germany, for example, there were not many opportunities for public participation until 2005 (Walk 2008, 165-169). Walk concludes that the implementation of goals of Article 6 UNFCCC in Germany and other EU countries during her study period was half-hearted. There were no serious efforts to improve public participation (Walk 2008, 170), a lack of a coherent strategy being one major reason for this verdict.

As a second perspective on the subject Walk looks into civic engagement in climate-related issues. In her account she focuses on energy related initiatives on the local level (Walk 2008, 222 ff.) Walk finds that there are more and more new opportunities to participate in climate issues locally. These initiatives often exceed legal requirements. She identifies a communication gap between the local level and organisations on the national, European and international level as a problem. According to her findings, there is not enough communication between the levels and in particular insufficient awareness of international processes at the local level (Walk 2008, 222). The local Agenda 21 is a framework within which many participatory approaches have developed, also on the topics of energy systems and climate protection (Walk 2008, 223ff.; local examples 226ff.).

3.3 Youth participation

Past and present human activities have and are leading to a change in the global climate. Many of the impacts can already be seen and felt, however the majority are still to come in the future. Decisions taken by today's generation will affect the lives of future generations. It is a question of ethics and fairness to make decisions that not only benefit today's generation, but that also consider the needs of future generations. Today's children and young people will have to suffer from the legacy their parent's generation has left behind. Therefore, it is desirable to involve children and young people in decisions on how to mitigate and adapt to global warming. In recent years, the further inclusion of young people in political decision making and public participation processes has been increasingly claimed by different institutions, organisations and political parties.

According to Article 12 of the UN Convention of the Rights of the Child (UN General Assembly 1989), young people have the right to be involved and have their voice heard in decisions that will impact them. The participation of young people in decision making is the central goal of a range of strategies and organisations, for example, youth wings of political parties, youth forums convened by international institutions (including UNESCO, the World Bank, ASEAN, Council of Europe), youth councils and other participation mechanisms. However, when looking at the actual situation in several countries, youth participation is still considered more as a "nice to have" than a real right. In recent years there have been several pilot projects in different countries to ascertain best practice in youth participation, especially at the local level. However, a structural integration into formal participation procedures is generally lacking (Stange 2010, 16).

Literature on youth participation is growing and it is many and varied. However, publications and systematic research that present an international overview on the situation are rare, and even less when searching for the narrower topic of youth participation in climate-related issues. A comprehensive overview of youth participation in climate change issues is given by the United Nations' World Report Youth - Youth and Climate Change (2010). This report highlights the situation of youth participation within the United Nations and especially in the UNFCCC. Furthermore it gives examples of global action in the field of youth participation in the context of climate change.

According to this report, the UN has long recognised the importance of youth participation in decision making. Within the UN environmental policy programmes, several mechanisms that provide young people with the opportunity to contribute to climate change discussions have been established in the form of youth advisory bodies and youth caucuses. However the level of influence young people really have on final decisions remains relatively low. Also outside the UN framework, young people have become active in efforts to respond to climate change in a variety of ways. However, again and again it becomes obvious, that even though the young people's voices are being heard, they are not necessarily taken notice of. According to the report, although young people have the opportunity to participate in several higher-level policy processes, they often remain excluded from real decision making (UN 2010).

An important precondition for young people to participate in mitigation and adaptation measures effectively is that they are equipped with the relevant knowledge, which emphasises the important role of effective climate change education and capacity building. This does not only include knowledge of the scientific, political and societal background of climate change as described in the previous chapter, but also the ability to use analytical skills and enhanced decision-making capacities (UN 2010). According to the UN report, there have been several examples where young people have come together around the world to share information and knowledge, however, most of these events have been isolated, not embedded in long-term programmes, so that their impact on real politics is still weak.

According to the UN report, young people can exert the most influence on climate policy through campaigning, lobbying and advocacy. When young people join youth environmental organisations it is more likely that their voices will be heard by politicians. NGOs are involved in formal public participation procedures in many countries as well as in interna-

tional negotiations on climate change policy. Through their involvement in organisations, young people can initiate climate action and can directly influence governmental decisions. Also protests, both online and in the streets, are more likely to be heard by decision makers when a critical mass of individuals is involved (UN 2010).

4. Research Findings

In this chapter the findings from the qualitative survey are presented. Most of the information presented consists of interviews with experts and young people. It is indicated where this is not the case. Due to the study design these findings present the subjective views of experts and young people, rather than indisputable facts or the view of society as a whole in each of the respective countries. The findings are presented separately for each country. A general cross-national conclusion will be given in the next chapter.

4.1 General attitude towards climate change and climate protection

Austria

In Austria, the issue of climate change is an important topic for the population. This evaluation is also confirmed by surveys among the Austrian population (Fiala 2009, 17). Austrian society is aware of the problem of climate change; however, this does not automatically lead to appropriate action. The problem is seen as important, but not as a top priority in comparison to other topics.

The Austrian economy has paid attention to climate change, especially by representatives of energy industry and tourism. In Austria, there are a lot of hydroelectric power plants which are fed by glacier melt water. Some energy experts are concerned that there will not be enough water to operate the power plants in the future due to the retreat of the glaciers as a consequence of global warming. In tourism it is evident that the loss of ski tourism is a widespread fear.

Among Austrian politicians the IPCC report from 2007 and its findings regarding climate change are widely accepted. The numbers of politicians that deny the anthropogenic cause of climate change have strongly decreased in recent years. Also the official description of climate change by the Austrian government conforms to the view given in the IPCC report of 2007. However, (similar to the situation in the Austrian population), even though the government has recognised the importance of climate change, it is not considered to be a high priority. In some cases, fundamental cornerstones of Austrian politics are contradictory to climate protection policies. The government often gives short-term problems more attention than more long-term problems such as climate change. Of course, there has been some effort to implement climate protection measures; however, these are not sufficient, according to the interviewees. The uncertainty of politicians and the general public about the real impact of climate change and the real benefits of climate protection measures could be the reasons for this insufficient action.

Austrian politicians have released official recommendations for action to be taken against climate change, predominantly in the fields of energy efficiency and building insulation.

Furthermore, there are subsidies and development plans for renewable energy, especially for photovoltaics. Flood control is the major measure for the adaptation to climate change in Austria because it is expected that flooding in the country will increase as a consequence of global warming. Furthermore, NGOs have produced lots of recommendations for action. These NGOs implement programmes and campaigns that are partially supported by the government, such as the programme “Klimarettung” (“climate rescue”)¹. Although they are not the exclusive target of these programmes and campaigns, young people are also addressed.

Czech Republic

In contrast to all other countries involved in this study, the Czech Republic is the only country where all the interviewees agreed on the statement that climate change is not an important topic for the majority of the society. According to the interviewees, most people are not interested in the topic and in action to stop climate change. Even though Czech citizens are noticing impacts of climate change, like floods or frostbitten crops, they generally don’t link these incidents to global climate change.

Climate protection measures are not very popular in the Czech Republic. Efforts to curb climate change are sometimes even linked to the Soviet tradition of weather modification like cloud seeding, and have therefore a bad reputation among some citizens. In the Czech Republic there are not many climate experts who are visible in the mass media. Hence, a lot of people who are not knowledgeable on the issue get a chance to speak. This leads to confusion and misunderstanding of the recipients.

Environmental and climate protection are often contrasted with economic prosperity. Activities by environmental NGOs are often seen as barriers to economic growth. For many Czechs, climate change seems to be a problem for people in countries that are far away from the Czech Republic. According to one of the interviewees, the massive rejection of the issue of climate change in the Czech Republic results from the Communist period: A lot of people are of the opinion that the Czech people have been poor and not had a rich country for such a long period, that they are unwilling to accept that they have to limit themselves now just so that people in other countries can live better.

According to the interviewees, the Czech government attempts to fulfil the formal climate protection requirements on the international and EU level, but only the absolute minimum is really implemented. The external image publicised by the Czech government does not correspond to the internal reality. One of the interviewees gives an illustrative example of this: the homepage of the Czech Ministry of the Environment. In the English language version of the homepage, climate change is at the first position of presented topics, but if the language is changed into Czech, climate change falls down to the last position. According to the interviewee who presented this example, this reflects the inconsistent position of the Czech Republic; externally embedded in international and European partnerships and obli-

¹ <http://www.klimarettung.at/>

gations on the one hand, and internally indifferent in terms of the politicians and general population on the other.

A similar situation is given in the case of the official attitude of the Czech Government towards the IPCC report of 2007. The official position of the Czech Government was (more or less) in accordance with the report. The societal reality in the Czech Republic, however, looked somewhat different. According to the interviewees, the Czech Republic is one step behind Western European countries, as the current discussions are not on the question of how to protect the climate effectively, but rather on the question of whether climate change is really happening and whether human activity is the driving force behind it. Also in the Czech scientific community there are scientists who contradict the theory of an anthropogenic cause of global warming.

According to the interviewees, the current Czech government does not consider climate change to be an urgent problem. However, the Environmental Minister Chalupa supports actions against air pollution. In contrast to climate protection measures, measures against air pollution are appreciated by the Czech population. This is not surprising in a country where one of the cities with the worst air pollution from all cities in the EU, the city of Ostrava, is located (Prague Daily Monitor 2009). Intelligent measures against air pollution could also have a positive effect on the reduction of greenhouse gas emissions. This means that in the Czech Republic, the implementation of climate protection measures would be easier if the reasoning was based on action against air pollution instead of climate protection.

Denmark

The absolute opposite of the situation in the Czech Republic is the case in Denmark, where climate protection has a lot of support. All Danish interviewees agreed with the statement that climate change and climate protection are very important topics for the majority of the Danish population. One interviewee even reported to detect a difference in the awareness of climate change between Danish women and men, maintaining that Danish women are more aware than Danish men. However, this assumption cannot be verified by data.

According to the interviewees, the reason for the strong support of climate protection by the Danish population is not environmental awareness alone. The Danish people connect climate protection with economic benefits and the security of supply. This is the direct opposite of the situation in the Czech Republic, where climate protection is rather seen as a barrier to economic growth.

For the Danish government climate change and climate protection are issues of high priority. According to the interviewees, there are no Danish politicians in the parliament who deny the IPCC description of climate change. Most of the Danish political parties have reached a consensus on the necessity of ambitious climate protection goals. The Danish government uses the IPCC report to underpin its climate protection policy.

Germany

The German population considers climate change to be a serious problem. This is also confirmed by national surveys which indicate that 77% are concerned about it (BORGSTEDT et al 2012, 25). Climate protection is relevant for the majority of the population; however it is in competition with other topics.

Obviously, also the German government perceives climate change to be a serious problem and supports the view that is given in the IPCC report of 2007. The energy transition is currently one of the most important topics on the German political agenda and it receives major media attention. Climate protection is a topic which conveys a positive image of the government and is therefore a popular subject for communications. Due to current news coverage on the energy transition, the majority of the German population has been given the impression that the plans proposed by the government are very ambitious. In general, the energy transition is appreciated by the majority of the German population.

The media do not always report on it in a positive light and a lot of individual measures are heavily criticised. This has an impact on public acceptance. A lot of people feel that the planned measures are too expensive and fear that other policy areas will be cut because of it. A further widespread fear is that the energy costs for private households will increase significantly.

United Kingdom

All the interviewees from the United Kingdom struggled to give a categorical answer to the question whether climate change is seen as an important problem by the British population. There is definitely a consensus among the majority of the British population that climate change is happening, however, there is a big range between people who are very concerned about it and people who don't care at all. In the UK, most citizens don't consider climate change to be a big problem for their personal lives, however, they are aware of the fact that it is and will be an important problem globally. Furthermore, in Britain the public perception of climate change seems to be very variable. In the periods following natural disasters, the British population's awareness of climate change is much higher than in times when no natural disasters have occurred for a long time. Especially, when natural disasters occur in their own country, like for example flooding in Wales, discussions on climate change increase as a reaction.

At the national governmental level, the picture is similar: Giving one single categorical answer seems to be difficult. However, it seems that the current coalition government is giving climate change less priority than the previous government. The two parties of the current coalition government have different positions towards climate change. While the Conservative Party is less concerned about it, the Liberal Democrats tend to show more interest in the topic.

Both parties see climate change as a problem, but they don't act accordingly. The British government took on the "2 degrees goal" and has accepted that climate change has primarily anthropogenic causes. This means that two of the major cornerstones of the IPCC report

are supported by the British government. Whether the government's official position conforms to the whole content of the report however remains unclear. The UK Climate Change Bill from 2008 was a reaction to the IPCC report of 2007.

USA

According to the interviewees, the overall concern about climate change amongst the general public in the USA has been low over the past few years, but it is currently rising. According to research done by Georgetown University (Georgetown Climate Center 2013), 78% of Americans support Federal and State Government action on climate protection. There is furthermore strong regional diversity in the USA. People are more concerned in some federal states than in others.

Most American citizens are unsure about what they could do to stop climate change. Therefore there are only a few people who are actually motivated to take action. The topic is highly politicised. People with fairly low scientific knowledge can be easily manipulated by those who deny the anthropogenic cause of climate change to further their own interests.

There is not a lot of public support for climate protection measures across the USA as a whole. For example, the proposed introduction of a carbon tax does not have many supporters within the Congress. On the other hand, there is a lot of support for renewable energy, although the reason for this support is more to gain an independent energy supply than to prevent climate change. At the beginning of Obama's presidency, climate change was given a high priority on the political agenda. Obama gave a lot of attention to the topic but has yet to follow through with implementation. Politicians in Washington, DC, have very diverse opinions on the topic. Even in the Senate, which is responsible for much of the law-making in the USA, there are still some senators who deny that climate change is caused by human activity. They have the power to block many of the actions that were planned. The actions of the government itself are sometimes contradictory: On the one hand planning to introduce a carbon tax and implement stricter emission standards for cars, on the other supporting the construction of the Keystone Pipeline² transporting tar sands from Canada to the Gulf Coast, a project which will mostly have a negative impact on the climate..

4.2 Climate Change Education in the investigated countries

Austria

In Austria, climate change education is partially integrated into formal school education. Extra-curricular climate change education is also available in a wide variety of different forms: NGOs organise national campaigns, panels and workshops; people volunteer in the municipalities to provide climate change education; there are training courses for municipal climate managers and energy consultants.

² The Keystone Pipeline System is a pipeline system to transport synthetic crude oil from the oil sands of Canada and crude oil from the northern USA to refineries in the Gulf Coast of Texas.

Furthermore, NGOs carry out environmental and climate change education in schools on behalf of the Ministry of Education, where the problem of climate change is taught and recommendations for action are developed. These recommendations for young people are especially targeted at changing consumer and mobility behaviour, aiming to encourage sustainable consumption and environmentally-friendly transport options such as walking, cycling, the use of public transport and electric mobility. There are also nationwide initiatives with young people as the target group. Examples are “klima aktiv”³ (“Climate Active”) and “Forum Umweltbildung”⁴ (“Forum for Environmental Education”). Unfortunately, campaigns on topics such as ecology and climate change are in most cases only short-term.

Although there appears to be a lot of projects and stakeholders in the field of environmental and climate change education, its structural integration into the formal school curriculum is perceived as rather poor by the interviewees. While the topic is integrated into the official Austrian school curriculum, it is not yet addressed in sufficient depth. Traditionally, geography is the subject which contains most climate change-related content, but also ethics, religion and economics (environmental management) climate change can have the scope to include the topic. In addition, school education is complemented by education from NGOs, including the “Klimabündnis”⁵ (“Climate Alliance”), which organises extra-curricular projects. Examples of projects that have been implemented in cooperation between schools and NGOs in Austria are: Exhibitions on the topics of climate change and changing energy systems, film screenings, and peer to peer training courses.

The individual interest and commitment of teachers and school administration boards are important for these kinds of programmes to work. If the schools show a low interest, then the interaction between the in-school and out-of-school education does not work effectively.

Czech Republic

In the Czech Republic, the topic of climate change is integrated into the formal curriculum of schools. Generally, climate change is a topic in social studies, geography, biology and physics. The interviewees were not sure whether there is a minimum time frame scheduled for the topic. The way the topic is taught is not standardised and depends on the personal knowledge and interest of teachers. Sometimes, incorrect facts are taught, which do not in accordance with recent scientific findings. On the other hand, if there is a committed teacher, climate change can be taught in depth and to a high standard. Occasionally, there are training courses for teachers focusing on environmental topics like climate change, but they are not obligatory. Such training courses are organised by NGOs. Generally, climate change is not a topic of high priority in the formal Czech educational system. The Czech State is not very active in supporting climate change education initiatives. The government leaves the work in this field to NGOs.

³ <http://www.klimaaktiv.at/>

⁴ <http://www.umweltbildung.at/>

⁵ <http://www.klimabundnis.at/>

Apart from the NGOs that provide the training courses for teachers referred to above, there are other NGOs and “eco-centres” which cover the topic of climate change education. Scout organisations, for example, play an important role in environmental education in general. Usually they focus on nature protection, but climate-related topics are also taught to children and young people, depending on the individual interest and knowledge of the Scout Leaders. Climate change education is also integrated into NGO campaigns for related topics such as mobility, energy efficiency and air pollution, which draws much more interest among Czech citizens, because for the majority of the Czech population climate change is not an important topic (see Chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**). Furthermore, NGOs produce teaching materials which can be used in schools. The interaction between in-school and out-of-school education in the field of climate change is not organised, but relies on the commitment of individuals.

Denmark

In the case of Denmark, the answers from the interviewees are slightly contradictory. While the topic of climate change is well integrated into the Danish school system, according to the two experts, the young person interviewed reveals that he has not personally learned about the topic as part of his education. However, he admits that he is aware of the fact that this is different in other schools and that in recent years there has been an increase in climate change education throughout Denmark.

According to the two experts, climate change is integrated into general environmental education in schools in Denmark. The type of integration differs according to the type of school. In normal high schools, for example, there are obligatory interdisciplinary projects for six months: These projects often deal with sustainability topics, such as climate change and climate protection. Technical high schools deal with the topic of climate change in the context of renewable energy systems. The “Eco Schools” concept is an outstanding example from Denmark as it combines data collection and participation. It combines normal lessons with group work and debates, and promotes the participation of all students, teachers, technical staff, the school management and representatives of the political level in decision-making processes. In this type of school, climate change and environmental topics are of central importance. Irrespective of the type of school, climate change is an obligatory part of the Danish school curriculum. While the scientific basics are taught to younger students, complex political interrelations and the background of climate policy are taught to older students.

Denmark does not have a tradition of out-of-school education; instead external organisations such as NGOs go into schools to educate pupils. The cooperation between schools and NGOs that focus on environmental education is well organised. NGOs visit schools to implement education projects together with teachers and students. The educational administration expects that NGOs prepare teaching materials for schools and conduct education projects together with schools. This means that NGOs that focus on environmental education have a clearly defined position within the Danish educational system. Examples of suc-

successful projects are “Klimakaravanen”⁶ (“Climate Caravan”), “Local Youth Summits”⁷ and “Climate Ambassadors”⁸.

“Climate Ambassadors” are young college students who work as volunteers with younger pupils in primary and secondary schools. They do practical activities to investigate the challenges presented by climate change and energy shortages. They have a positive outlook and make clear that it is possible to do something against climate change. According to the interviewees, this project was done well by the young people and this success further enhances the positive understanding of the recipients.

In addition to actual education projects, there are other campaigns and initiatives in Denmark which do not focus exclusively on education, but where young people can learn a lot about environmental topics including climate change. Young people can join the youth sections of environmental NGOs. These youth groups are not necessarily focused on education, but through practical activities and participation, young people are given the opportunity to learn a lot and to gain experience. Moreover, NGOs and political parties organise panels, events and festivals. However, it can be debated as to whether these events really have an impact on young people's attitudes. According to the interviewees, Danish youths have more money available than in any other European countries, making them major consumers, which this has a large impact on the climate. Even if they are aware of the problem of climate change, most young people in Denmark are not aware of the connection between their own behaviour and the global problem of climate change.

Germany

The German school system is regulated at the federal state level and there can be significant differences between the federal states. In German schools the topic of climate change is usually part of classical school subjects, especially geography. How it is actually integrated depends on the federal state.

Schools usually focus on the scientific background of global warming and the greenhouse effect. Political interactions and relations are not necessarily part of the curriculum, although in some schools they are. Behavioural change and the empowerment of students to prevent climate change is not part of the official curriculum and it is left to the teacher to decide whether these issues are integrated into their lessons.

In most federal states the topic of climate change is taught to older students in secondary schools. Formal climate change education in primary schools is relatively rare. In Germany, school education for students preparing for their “*Abitur*” exams (final secondary-school examinations for 16-18 year-old pupils) is not very interdisciplinary and the students choose to take or drop certain subjects. If a student drops a subject in which climate change plays a role such as geography or political sciences, he or she will not learn anything about climate change during this period. Even though the integration of climate change into the official

⁶ <http://www.klimakaravanen.dk/>

⁷ <http://youthsummit2012.eu/youth/the-theme>

⁸ <http://www.climateambassadors.net/demena-youth-climate-ambassadors-2011/denmark>

school curriculum is relatively weak, there are some schools that organise education about climate change on a voluntary basis in the form of additional study groups or projects. However, such arrangements are highly dependent on the commitment of the head of school and are not standard practice in German schools.

Out-of-school environmental education is mostly provided by NGOs. Alongside nature protection, climate change is currently one of the most favourite topics in out-of-school environmental education in Germany. Youth groups of environmental organisations, such as the “BUNDjugend”⁹ or “NAJU”¹⁰, are major players in this field. In contrast to in-school education the focus of informal climate change education is more on behaviour and policy change issues. The scientific background doesn’t play such an important role. That means that in-school and out-of-school education can complement each other quite well.

Unfortunately, the out-of-school education options are not available or taken up by many young people. Even though there are some very active young people, the majority of German young people are not aware of their options. The options available is highly dependent on the location as there is a wide variety on offer in bigger cities, it is hard for young people in smaller towns and villages to find and get in touch with like-minded people.

However, if young people are really interested, it is certainly possible for them to find information on the topic from other sources. There are a lot of websites that provide information on climate change in a style appropriate for young people. In addition to this, the German state funds a voluntary “ecological year” programme for young people who just have finished school. Here they have the opportunity to work for one year in an ecologically-orientated organisation or institution. This enables young people to gain practical experience and learn a lot about environmental issues including climate change.

The interaction between in-school and out-of-school education is not standardised. There are several NGOs that go into schools to carry out projects in cooperation with them. These NGOs receive financial support from the German government and ministries. There are many good projects, however, due to the lack of standardisation and insufficient financial resources not every school can be covered so that only a small percentage of German students can access such projects.

United Kingdom

According to the interviewees, there is no formalised environmental education in the United Kingdom. Schools deal with some topics that are relevant to environmental education, but quite a lot can be omitted. Especially in England, environmental education does not play an important role. In Wales, however, environmental education seems to be at an early stage of development. The regional educational administration has made some efforts to integrate sustainability and environmental topics into Welsh schools. In Britain, climate change is a topic in classic school subjects such as geography, science, physics and citizenship classes. The basics on climate systems and the greenhouse effect are taught. Climate

⁹ <http://bundjugend.de/>

¹⁰ <http://www.naju.de/>

protection and climate awareness are not part of the official curriculum, so that it is left to the teachers as to whether they focus on these aspects. Sometimes, teachers organise visits to institutions like the “Centre for Alternative Technologies (CAT)”¹¹, but such visits are not obligatory and are highly dependent on the individual interests of teachers and pupils.

According to the impression of one of the interviewees, the Minister for Education seems to not show much interest in topics like climate change and there is currently no attempt to better integrate topics like climate change and climate protection into the British educational system. A sustainable schools statement and framework were in existence prior to 2010 to provide orientation for teachers who wanted to integrate sustainability into their lesson plans. This framework was published on a website, which was taken down in 2010 and caused confusion amongst professionals and school teachers. There are currently no official guidelines for teachers on how to integrate the topic of climate change into formal school education. Some years ago, an environmental education and climate programme was drawn up, but it has not been implemented and there has not been any activity since.

As formal climate change education in schools does not exist in the UK, regional education centres and NGOs, such as “Oxfam”¹² and the “National Citizenship Service”¹³ have to fill this gap. Extra-curricular climate change education provided by NGOs can vary and there are no common approaches. However, there are some positive examples: “People & Planet”¹⁴ is a student-led campaigning organisation that empowers young people with the skills, confidence and knowledge they need to run interactive projects. “Oxfam” has organised “Climate Change Hearings” and the “Wales Youth Forum”¹⁵ introduced a peer-to-peer learning programme and further activities such as sustainable fashion shows, film nights, assembly presentations, plays, concerts, bike rides, and petitions.

Of course, there are also opportunities for children and young people to teach themselves, for example through participating in discussion groups and visiting wind farms and wildlife education centres. Furthermore, eager pupils can tell other pupils about their out-of-school experiences, for example through giving presentations on their volunteer work. This means that it is possible to encourage climate change education from the bottom up. The young person who was interviewed gave an example from her own experience: Solar panels were installed in her school because pupils campaigned for it to be made greener. This must however be noted as a positive exception that does not reflect the regular situation of schools in the UK. Actions like this certainly require young people to show a high degree of interest and to act on their own initiative. This is not necessarily the norm for children and young people.

11 <http://www.cat.org.uk/>

12 <http://www.oxfam.org.uk/>

13 <http://nationalcitizenservice.direct.gov.uk/>

14 <http://peopleandplanet.org/>

15 <http://dyfodol.org/wp/?lang=en>

USA

The integration of the topic of climate change into formal school education is currently evolving in the USA. New national science education standards were recently released that for the first time include climate change. The interviewees see this as a huge step, but it seems that it is hard to predict how the new standards will be implemented in practice. The integration of climate change in formal school education has so far been mixed. There are environmental science courses in most schools that cover several environmental science topics, including climate change. It is handled with varying levels of intensity across the country. In some schools it is the focus of lessons for several weeks, while in others it is barely discussed at all. In most schools only the scientific facts are taught, while climate protection, climate policy and especially individual opportunities to take action don't play an important role. However, according to the interviewees, there are positive exceptions, although these are strongly dependent on the commitment of individual teachers.

In the field of out-of-school education there are a lot of climate communication and outreach programmes driven by NGOs with partial financial support from the government. Famous examples are: "350.org"¹⁶ and "iMatter - Kids vs Climate Change"¹⁷ that provide information and education on climate change. There are many NGOs and government programmes that focus on providing basic information on climate change. These NGOs conduct information campaigns and media outreach on climate policy and action plans. Additionally, there is an increasing number of NGOs that cover a broader spectrum of climate change education topics including policy and behavioural change as well as public and community engagement.

In the USA, there are more than 600 organisations working in the field of information, education and policy outreach, which are as multi-faceted as the methods they use. A lot of organisations provide information and educational materials on their websites. Others use geospatial tools, for example, to demonstrate the impact of climate change. One of the interviewees highlights an exhibition in the Eugene Natural History Museum as a positive example of interactive climate change education for both young people and adults.

There is no organised connection between in-school and out-of-school education in the field of climate change. They are basically separate, although there are exceptions: There are some NGOs that go into schools to provide climate change education, the biggest one being the "Alliance for Climate Education"¹⁸. The "Alliance for Climate Education" organises student panel events in schools on climate change and energy issues. Unfortunately, there are not enough resources to cover all schools in the USA, and therefore only a very small percentage of young Americans have the opportunity to take part in these events. Often financing is a barrier because the schools have to cover the costs for such initiatives themselves. The organisation "iMatter", which is youth-led, filed a lawsuit demanding that the government become more active in preventing climate change present their work in schools to inspire other young people to take part in societal processes. As members of "iMatter" are young people themselves, they can gain more respect amongst their peers

¹⁶ www.350.org

¹⁷ www.imatteryouth.org/

¹⁸ <http://www.acespace.org/>

than adult educators. Even though there is not much interplay between in-school and out-of-school education, some committed teachers present the out-of-school education opportunities in their environmental science courses and try to motivate their students to use these services.

4.3 Opportunities for public participation in climate-related issues

Austria

Austria widely complies with the public participation requirements of international conventions like the Aarhus Convention in climate related issues. According to the opinion of the interviewees, however, Austria is not a forerunner in this field. Although Austria has quite good regulations on citizens' rights to enter objections against construction projects, the use of these rights requires good knowledge of legal regulations, which most Austrian citizens don't have. While there are extensive rights for participation in theory, they do not function well in practice. This is due to administrative barriers, knowledge gaps, inactivity and low interest among citizens.

In Austria, the opportunities for the general public to participate are not common knowledge and in many cases, the population is badly informed about participation procedures, due to ineffective communication between authorities and citizens. Public participation procedures as part of environmental impact assessments (EIAs) are announced in the newspapers, but are not clear. Planning documents for local public participation procedures are only displayed in municipal buildings, and are not published in local newspapers, meaning that most citizens do not know the project is taking place. People participate more actively when they are directly affected by projects or plans on the local level. Protest is sometimes used as a type of participation in these cases. However, the majority of Austrian citizens usually refrain from protesting, even if they are aware of their right to protest. This seems to be a cultural habit, as one of the interviewees jokes: "We Austrians sit everything out". An exception seems to be the anti-nuclear movement, where Austrians have actively protested.

The more abstract a topic is, the lower the willingness to participate. This is not the case however for topics that gain a high amount of media attention, i.e. for topics that are the subject of NGO campaigns. In these cases there is increased participation by the general public.

In Austria, there are also dialogue-based participation procedures, most of which are informal and voluntary in nature, leaving it to the responsible administrations to decide whether they implement them or not. Especially when topics like "the future of energy systems" are debated, for example in the context of local energy concepts, dialogue with citizens is often supported. There are also "Climate and Energy Model Regions"¹⁹ that rely on the involvement and participation of citizens. Although they are not always the first to

¹⁹ <http://www.klimaundenergiemodellregionen.at/>

join a protest, Austrians are active in organising themselves and initiating projects from the bottom up.

Czech Republic

In the Czech Republic, formal opportunities for public participation in environmental issues (including climate protection) depend on the type of procedures they are associated with. There are different legal obligations depending on the scale and scope of projects and on who is responsible for carrying out the procedures. Formal public participation procedures are outlined in various planning procedures and environmental impact assessments (EIAs), however, these formalities often impede the real active involvement of citizens. Consultations have to be held, but it is not mandatory to implement the outcomes of such consultation meetings. According to the interviewees' impressions, most of the suggestions and objections of citizens are usually ignored. In addition, short notification periods at inconvenient times (for example during holidays or at Christmas) are often lead to a low level of participation. One of the interviewees gives an example for this: The public participation procedure for the allocation of emission trading certificates had been delayed for a long time. The period for raising objections was only one week in August, when everybody had summer holidays. Furthermore, the published documents were not complete, so that it was hard for people to evaluate the case properly. All interviewees from the Czech Republic agree in their conclusion that there are formal opportunities for participation, but their real impact is minimal. Of course, there is always the possibility to protest, but this has little influence on the real outcome of politics. In addition to formal participation procedures organised by the state, NGOs sometimes also organise events, for example panels where citizens can discuss issues with experts and politicians, but such events are rarely focused on the particular topic of climate change. It is rare for people in the Czech Republic to act on their own initiative and organise their own participatory projects, such as private solar power plants. Actions such as these do not receive sufficient government support as it tends to cooperate with large energy companies rather than with small groups of organised citizens.

Denmark

The Danish interviewees believe that people have a strong influence on politics in Denmark. In the context of climate change, this can be seen through the fact that no political party in the Danish parliament denies climate change and its anthropogenic causes. According to the interviewees, this is a direct consequence of the attitude of the majority of Danish society and the influence of citizens on the political agenda. NGOs in particular can influence political decision making to a large extent. Consultation and commenting periods for new legislation are often announced at short notice, for example when EU Directives are transposed into Danish national law. NGOs are able to react in these cases, although for normal citizens however this is often not possible.

In Denmark, the existing democratic instruments for public participation are well established for both citizens and organisations. There are different formal public participation procedures on climate related issues, such as renovation to improve a building's energy performance. Public participation is obligatory for construction projects that have an impact on the climate. Planning procedures for the construction of power plants, for example, as well as municipal development plans and local climate protection concepts require public hearings. It can be debated whether the quality of public participation is equal on all administrative levels, but it is, in any case, possible.

Protest is a form of public participation that can be carried out in Denmark. The interviewees doubt however that it has a strong influence on political decisions. Smaller protests are often ignored by decision makers. Decision makers only give in and revise their planning when the pressure from the population is very strong. In Denmark, protest is often two-sided, i.e. there are protests for and against climate protection measures. A planned congestion charge zone in Copenhagen and wind energy projects have been confronted with protest by the population.

Danish citizens are more or less aware of their rights to participate. However, this does not mean that they use them frequently. The willingness to participate is high when citizens see a direct benefit for their personal lives. Therefore, local participation procedures on issues that are easily comprehensible generate higher interest than those on more abstract issues with national scope. The most popular opportunities to participate are discussion meetings, public hearings at a local level, letters from readers and comments in internet forums. Direct contact with politicians is also becoming more and more popular in Denmark, a trend which is being increasingly recognised. Politicians organise discussion meetings and have contact with citizens via e-mail or "Facebook". Climate change can thus be addressed as a topic directly.

Germany

The German interviewees evaluate the opportunities for the public to participate in climate-related issues as average. Formal participation is an integral part of planning procedures. People who are directly affected by a certain project have more rights to be involved in the decision making. The barriers for people to participate are however relatively high, as the legal prerequisites for planning procedures are very complex, requiring a lot of expert knowledge. Young people in particular are not aware of how to participate in these formal procedures. There are several further opportunities for citizens to influence decisions on climate issues in addition to the formal procedures, including voting, protest and membership of environmental organisations to name just a few. There have been and still are Agenda 21 activities on the local level in many German municipalities. These give citizens the opportunity to participate actively in the development of the municipality and, for example, to support renewable energy on the local level. There are a lot of opportunities, but many citizens are not sufficiently aware of them, leading to low participation numbers.

People are not aware of their options to participate in climate-related issues. However, the debate about public participation has increased due to recent developments. In 2011, the

project to upgrade Stuttgart Central Station caused a large amount of protests and received a lot of media attention. Heated debate ensued and as a result, many experts and politicians have demanded that the public is involved earlier and more effectively to avoid protests. This would lead to better planning results that are accepted by the general public. The increased media coverage has motivated more people to be interested in the topic of public participation. According to the interviewees, German citizens were not previously very active protesters in comparison to other countries, however this seems to be changing and public protest is becoming more and more popular. One of the attractions to this sort of participation is that people find it easier to overcome their inhibitions when they are part of a larger group and are not acting alone. Climate change, however, has yet to be the topic of such large-scale protest actions. The popularity of the energy transition would seem to indicate that there is wide-scale support for climate protection. The discussion surrounding the topic is merely concerned with the minutiae, and as such, are not sufficient to mobilise a protest movement.

Civic organisations are also involved in decision making in Germany. This is also an important type of public participation as civic organisations are representative of public interests. Individual citizens can join such organisations and influence politics. The German Federal Ministry for the Environment (BMU) has organised dialogue forums to discuss the energy transition with environmental, social and economic organisations. Direct dialogue with citizens on the topic of climate change and climate protection is however not the norm. There are local dialogue forums in some municipalities that are affected by the expansion of the electricity grid and the construction of wind farms.

To actively contribute to climate friendly energy supply citizens can initiate energy cooperatives.

United Kingdom

Public participation in the United Kingdom is diverse and particularly dependent on the political sector. There are legal obligations in the field of spatial planning and land use that require public consultations. Public participation is becoming more and more important in law-making procedures. For example, there were public consultations on the new Sustainable Development Bill, which were organised using the “World Café” method: The participants were gathered in a room with several tables where they discussed crucial questions in small groups. The small groups were reorganised four times during the day so all participants had a chance to comment on each of the topics. The citizens typed their opinions and suggestions into small computers at each table, so that none of the input was lost. This was a very efficient and well-organised procedure.

The feed-in tariff was, on the other hand, decided by the government without having had any consultation on the topic. This shows that public participation in the context of law-making procedures is not standardised, and can be both good and bad. Formal planning procedures require public consultation for projects that have a positive and/or negative impact on the climate such as the construction of power stations fired by fossil fuels, wind farms and solar panels. Citizens do not always feel involved in these consultations and

sometimes have to resort to taking legal action to get their opinions heard. It often remains unclear whether the results of the consultations will be taken into consideration in the final decisions.

There is currently a lot of consultation on the construction of wind farms throughout the UK. One of the interviewees suggests that the current procedures are better than previous ones, because the awareness of the importance of public participation has increased in recent years.

In addition to formal public participation as part of planning procedures, financial incentives for the installation of private renewable energy systems are available. The application procedure is however very complex, preventing many people from applying.

In Britain it is always possible to participate in issues through protest, although its influence is considered to be rather low by the interviewees. Protests have nevertheless increased in recent years with campaigns on single issues such as those run by NGOs including “Greenpeace” and “UK Uncut”²⁰ receiving a lot of attention. The current financial crisis has triggered many of these protest movements in the UK. The majority of these protests are not to directly address climate change, but the protesters are fighting for a more sustainable economic system and against the over-consumptive lifestyle of Western civilisation. An example of such a protest is the “Occupy Movement”²¹. Currently, the trend in Britain seems to be campaigning for a change of society on the whole, not for specific issues like climate change.

In general, British citizens are not aware of all their options to participate in climate issues. Most people know they can take part in formal planning procedures, but they are not aware of each individual procedure. This is because authorities are not proactive in publicising them. It is often the case that people who are involved in such participation processes are more interested in furthering their own ends, not in preventing climate change. The actual number of both formal and informal participation procedures that are happening is rather low, meaning only a small percentage of the society can be involved.

USA

The interviewees from the USA evaluate the development of public participation opportunities in their country as generally good, including voting, referendums, protest and joining an NGO. Citizens can also directly contact their congress representative, regional and local governments to express their opinions and influence the decision making. It is however necessary for citizens to be informed of their options and act proactively.

Even though there are good participation opportunities in general, in the field of climate protection the picture is somewhat different. Formal participation procedures that focus particularly on climate protection issues are rare, especially on the federal level. However, there are a few examples, including the development of the Carbon Tax. Citizens have been

²⁰ <http://www.ukuncut.org.uk/>

²¹ <http://www.occupyuk.info/>

the given a time period to submit comments and public hearings have been organised across the country by the government. Although some individual citizens are active in their involvement, the overall number of citizens who participate is relatively low.

This seems to be a general problem in the USA: Although there are many opportunities, not a lot of people take them up. People can sometimes feel overwhelmed or disempowered, because they can't see that their actions have an impact on the final political decision. Many informal participation events with a focus on climate change have been organised by environmental organisations. A crucial point is that for some parts of the society, environmentalists have a negative image and are often stereotyped. That means that it can be hard for environmental organisations to reach people outside the environmental community and to motivate them to take action.

The public participation procedure for the planned Keystone Pipeline is a remarkable exception in this context as there have been more than a million comments from the public. While this seems to be not a huge amount compared to the total number of US citizens, this number is actually pretty high when compared to other formal public participation procedures on the federal level. The protest movement against the pipeline is very active, for example with more than 30,000 people who joined a protest in Washington, DC. On the local level, one of the interviewees highlighted the participation in the development of the climate protection strategy for the city of Eugene, Oregon, as a positive example. The procedure was well organised, a lot of citizens were actively involved and provided useful input to the proceedings. However, this is not the standard in municipalities in the US, where many of the climate protection strategies are implemented without carrying out extensive public participation.

4.4 Opportunities for participation in climate related issues targeted at young people

Austria

Only a small proportion of Austrian young people are aware of the fact that there are many opportunities to participate in climate-related issues and they have little interest in becoming involved. At this age, a lot of young Austrians have other interests and feel that climate protection restricts their possibilities to travel and use cars. Of course, young people could also participate in climate protection by changing their individual consumer behaviour. However, it is not easy to motivate them to act in environmentally friendly ways, because they have trouble relating to the complex interactions between everyday life and its impacts on global climate change.

The formal opportunities for public participation currently in place, some of which can be accessed by young people, do not address the needs and interests of the youths. Public participation methods have to become more accessible for young people and the results of participation need to be made clearer. This would increase young people's interest in participating.

Politicians have a tendency to act with only one legislative period in mind because they want to win the following elections. Therefore, in Austrian politics, day-to-day issues predominate, and long-term problems like climate change get little attention. According to the opinion of one of the interviewees, it would be desirable to give the youth a voice in the political decision-making process, because they will have to handle the consequences of current political decisions in the future. The government could improve the basic conditions for youth participation, for example, to increase the amount of lesson time spent addressing topics like public participation and citizen involvement.

In Austria, there are NGOs which offer informal participation projects especially for young people; however, these are rare. Young people have to make an active effort to find such projects as they are not present in everyday life. Most young people are not aware of these opportunities to participate in environmental and climate issues. Teachers advise young people to take part in projects like these, and they are often designed whole school classes. Therefore, the situation is similar to the case of climate change education, i.e. youth participation in climate related issues depends on the schools and teachers.

Sometimes, youth parliaments²² are organised, in which the topic of climate change could play a certain role. In Upper Austria, youth congresses on the environment and climate change take place sometimes. The region also organises a festival for sustainability, in which there are competitions for the best ideas etc. These are all good approaches, however, they do only reach a very small part of Austrian youths.

Czech Republic

According to the interviewees, young Czechs are not very interested in the topic of climate change, so they make little effort to participate in climate related issues. It is not easy to motivate Czech youths to become active in climate protection and there is no activity by the authorities to engage them. Young people receive confusing information and there is no supervision of the teaching materials which are used in schools. There is also no external supervision from the side of the authorities on how schools deal with the topic of climate change. All this contributes to a certain lack of engagement among the Czech youth.

In the Czech Republic, there are no formal procedures in place which encourage the participation of young people in particular. Young people are drastically underrepresented in formal participation procedures. Most of the Czech youth is not aware of opportunities to participate in such issues. Instead, they tend to use social networks and other internet based tools such as forums or blogs to express their opinions.

On rare occasions, informal events take place which encourage young people to participate. Once, for example, a Czech energy group organised an informative event and discussion on energy issues in order to awaken interest and involve young people. Sometimes NGO campaigns such as “The Big Ask Campaign”²³ or “Climate Advocates”²⁴ take place, which target

²² <http://www.reiniinsparlament.at/>

²³ <http://www.thebigask.eu/>

young people and have participative aspects. The “Climate Coalition”²⁵ organised a campaign where young people could express their demands to politicians through a common letter. However, all these events are flagship projects and do not represent the normal state of youth participation in the Czech Republic.

Denmark

According to the interviewees, it is easy for young people in Denmark to participate in climate related issues. This does not necessarily take the form of predetermined measures, but can be small contributions to climate protection in different areas of their lives. This means that youth participation in Denmark is more focused on young people's civic engagement than on their participation. For example, every political party has a youth organisation. Climate issues have varying degrees of importance in the work of these youth organisations, of course, depending on which party they belong to. Through being involved in NGOs, youths can influence politics directly. Furthermore, urban gardening and other activities which are both fun and have a positive impact on the climate have been increasing in Denmark over the last few years. Occasionally festivals on sustainability topics with a lot of participative elements take place, or there are side events at conventional music festivals. Also in their private surroundings, young people can exert influence on the lifestyle of their family, for example by convincing them of the importance of climate friendly behaviour.

The NGO “Energy Crossroads”²⁶ organises a lot of informal events where young people are directly involved and can actively participate. Moreover, there is a network of more than 300 climate ambassadors (see Chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**) that fosters voluntary commitment. Hence, climate change-related activities for young people are predominately initiated by NGOs and not by the authorities. However, as the government supports NGOs financially, one could argue that the State indirectly triggers such initiatives.

In Denmark, there has been an increase in participative events on climate change aimed at young people during COP 15 in Copenhagen. A lot of these events were supported by the government. For example, the results of regional youth councils that included several demands related to the issue of climate change were presented to politicians. Several national youth climate summits have taken place, one of them in the building of the national parliament.

Germany

In Germany, many of the opportunities for people to participate in climate related issues are open to young people as well as adults (especially the informal options). However, participation in general elections and referendums is only possible for those who are at least

²⁴ <http://challengeeurope.britishcouncil.org/index.php/news/524-the-climate-advocates-launched-their-peachy-fairy-tales-at-the-day-of-earth-in-bmo-czech-republic>, <http://www.facebook.com/pojdmenatolokalne>

²⁵ <http://www.zmenaklimatu.cz/>

²⁶ <http://denmark.energycrossroads.org/>

18 years of age. In relation to the total number of German young adults, only very few of them are interested and engaged in the field of climate change and climate protection. A lot of self-initiative is necessary to get involved in formal participation procedures and there is no mechanism for ensuring youth participation. Therefore, the total number of young people taking part in formal participation procedures for climate issues is relatively low.

From an official standpoint, there is no organised standard for youth participation on the national, regional or local level. However, in addition to the standard procedures, informal measures ensure the participation of young people. This is always dependent on the will of the responsible authorities and varies across the country.

In total, the number of participation procedures in the context of climate change that are targeted directly at youths is very low. Most of them are organised by NGOs, usually with financial support from the government, regional or local administrations. One positive example at the local level, pointed out by one of the interviewees, is the Youth Climate Summit ("Jugendklimagipfel") in the city of Heidelberg, which is organised by the environmental NGO "BUND" (Friends of the Earth Germany). 35 young adults are given the opportunity to be involved in the debate on local climate protection strategies and to formulate their suggestions and demands.

The awareness of participation opportunities among the youth is dependent on their social background and level of education. A sustainable lifestyle and activism in environmental issues are in trend among young people with a high standard of education, for example university students. This group of young people is more aware of their participation rights than it is the case for the most adults. Young people have more knowledge about new opportunities for participation, especially those online. There is a small number of politically active young people who are members of youth groups of environmental NGOs like "BUNDJugend" or "NAJU" and use these as platforms to participate in climate-related issues. There is a network of youth organisations and individuals called "Jugendbündnis Zukunftsenergie" ("Youth Alliance Future Energy")²⁷ that is especially focused on climate friendly energy supply. Within this network, young people advocate for a 100% renewable energy supply. Young adults who are connected to such organisations have many opportunities to get involved and participate in the political debate on climate change. "NAJU", for example, organised a discussion forum where young people had the opportunity to talk directly to the German Environmental Minister about climate and energy issues. Every country can send youth delegates to the COP events. In Germany these young people are also sent by youth groups of environmental NGOs. That means young people who are active in organisations have many opportunities to participate, however, only a very small proportion of the total number of young people make use of these opportunities.

United Kingdom

Most of British youths are aware of the fact that there are opportunities for public participation and for appealing against planning procedures. However, a lot of British people use

²⁷ <http://www.zukunftsenergie.org/>

this form of participation only if their own interests are concerned and not because of altruistic reasons such as curbing climate change. Formal public participation procedures that are explicitly targeting young people do not exist in the UK. Youth participation is usually organised in the form of individual informal projects. Among these projects there are both positive and negative examples. The project “Face Your Elephant”²⁸, for instance, can be seen as a positive example: They were present at festivals and discussed with young people on sustainability topics. Moreover, they pointed out simple practical activities young people can participate in, which contribute to a more sustainable and climate friendly society. Recently, the “Wales Youth Forum” (see Chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**!) has been established, which is supported by the Welsh government, but is mainly based on the voluntary commitment of youths.

There are several projects that involve youths in political debates. The problem is that they are not well coordinated. All the separate programmes and projects with usually ambitious ideas are very good in their concepts; their outputs however often do not have a significant impact on real politics.

USA

In the USA the federal government does not organise any official measures to promote youth participation. Young people can take part in the formal public participation events. Unfortunately, efforts are not made to ensure that they participate. On the local level, however, it is more common for government officials to involve youths in political discussions and decision making. In the field of climate change, the city of Eugene, Oregon sets a positive example: At least two or three events for young people take place annually, which aim to raise awareness of the topic of climate change and involve young people in the debate on this issue. In general the local administration organises events like this in cooperation with local NGOs. One example of an event for young people that is directly linked to climate change is “our climate our future” in which young people get the opportunity to take part in panel discussions and express their ideas, hopes and goals related to the issue.

Several surveys have shown that American youth as a whole are the population group that is most concerned and best informed about climate change. They are more likely to believe that there is scientific consensus on anthropogenic causation of climate change and they are very open to investing in and developing new technologies to solve global challenges. However, in matters of participation in climate change issues, American youth can be split up into different groups, among whom two trends seem to be particularly apparent: On the one hand, young people who go to college or university have good access to information, educational programmes and participation opportunities, are mostly aware of their opportunities and take advantage of them. They have the opportunity to participate in school clubs on environmental issues and are empowered to actively take a hand in political discussions. On the other hand, there are a lot of young people who have decided against civic engagement, who don't follow the news and have not interest in politics. In many cases

²⁸ <http://faceyourelephant.org/>

these young adults belong to communities that will be most impacted by climate change in the future, but they treat the problem as something that cannot be solved.

Young people who are engaged in the field of climate protection use new media to express their thoughts and organise campaigns and protests. Many people share articles and information via Facebook and use this tool to motivate others to become active. There are some organisations initiated by young people that are very active in climate-related issues and which have a huge amount of supporters and followers. One of the biggest US organisations which is focused on youth participation in climate-related issues is “350.org”, which was founded by a group of seven students.

A further remarkable initiative that has been pointed out by all interviewees from the US is the “iMatter Youth Movement”²⁹. It was initiated by a 13 year old boy and now has a certain amount of active young people among its many supporters across the country. The most outstanding activity organised by “iMatter” was the youth-initiated lawsuit towards the federal and state governments of the United States to secure climate recovery plans that will restore the balance of climate systems. “The plaintiffs are asking the judges to rule that the atmosphere is a common resource, [...] and hold the government accountable for its protection” (iMatter 2013).

There are many more organisations which advocate for more youth participation, but they receive little support from the government. To increase the effectiveness of these organisations’ work, it would be helpful to have a completely integrated strategy for improving youth participation and to better coordinate the action across the different organisations. In the United States it is not very typical for younger people to get involved in governmental decision making and it seems like it is a lower priority for the government to ensure that young people get the opportunity to take part in public participation.

²⁹ <http://www.imatteryouth.org/>

5. Cross-national Conclusion

The comparison of the six investigated countries has shown that people's awareness of the environment and climate change differs greatly between the different countries. While Denmark and to some extent Germany can be seen as forerunners in climate protection and the public's awareness of climate change is high, the population and politicians of the Czech Republic have largely rejected the issue. Another special case is the USA, with a relatively low concern about climate change among the public in comparison to the western European countries investigated, even though there is a high regional diversity and the concern about climate change is currently increasing. The other investigated countries can be ranked as average. The Austrian population and government seem to be more focused in particular on climate change, while in the UK the more general topic of sustainability seems to be more important in society.

The description of climate change according to the IPCC report of 2007 is supported by the governments in all of the countries that were investigated in this study, at least officially. It is interesting that in many of the countries that were investigated as part of our survey the attitudes of the government reflect the attitudes of the general public. It could be concluded that the governments in Austria, Denmark, the Czech Republic and the UK act in a democratic manner according to the will of the electorate, although this raises the question of which came first: Does a population that is very aware of climate change vote for a government that is focused on this issue, or is it rather the case that the population's awareness is a product of the government's support? This question was not addressed by this study and therefore remains unresolved. However, if we assume that the awareness of the population is a product of the support that the government gives to the issue, this would be an indicator of the success and effectiveness of climate change education and policy outreach, because these can have a direct impact on the attitudes of people. Also in Germany for both the population and the government climate change is a very important topic; however, in specific issues of the implementation of the energy transition the population does not always support the government's actions. The USA is a special case with a high diversity in climate awareness among both the population and politicians. In the Congress and the Senate on the federal level as well as within the federal state governments there is a wide range between active supporters of climate protection policies and climate change deniers who don't see at all the necessity to act. In Denmark, the climate protection goals of the government seem to be the most ambitious.

In all of the countries investigated, the issue of climate change is part of the curriculum. In formal school education it has generally been integrated into already existing school subjects such as geography, citizenship and physics. None of the countries have a school subject dedicated to the issue of environmental and climate change education. The methods and materials that are used in schools differ in quality and quantity in each country and even within the individual countries themselves. A lack of nationwide standardisation could be identified in all countries that were investigated in this study. Also the quality of climate

change education within schools depends in all countries largely on the individual interest and commitment of teachers, students and governing boards. Usually only the scientific and political background is the obligatory content of the curriculum. Awareness raising of the need for climate protection is not necessarily included in the curriculum in most of the countries in this study. In Denmark, NGOs have a strong influence on the content of climate change education in schools as the government requires NGOs to produce teaching materials for schools. With this clear position of NGOs within the formal educational system in Denmark, it seems to be the case that the issues of awareness and change of attitudes are better integrated into formal school education than in the other countries in this study. In all of the countries investigated, NGOs play a key role in teaching about climate change, as they organise educational projects and events both in and out of schools. Although Austria and the UK are both ranked as average in climate awareness, Austria seems to be more focused on climate change education than the UK. As is also the case for public sentiment, the UK concentrates more on teaching about sustainable development rather than specifically about climate change. In Austria, Germany and Denmark, there seem to be a lot more educational projects that are directly focused on climate change and climate change education is more of an independent educational subject than in the UK and the Czech Republic. These findings are in accordance with the evaluation carried out by IAELI in 2009 (for the UK and Denmark, see Chapter 3.1). In the Czech Republic, there is the additional problem that young people are not very interested in the topic of climate change, to the extent that it is easier to teach climate-related content under a different label, such as air pollution or mobility, so as to avoid rejection by the recipients. In conclusion, a lot of things have been already accomplished in the field of education about climate change in the countries included in this study, although this does not necessarily mean it is at a level which can be considered as satisfactory. Climate change education is mostly taught as part of projects in all of the countries investigated in this study. This can be seen as positive, as, from a pedagogical point of view, projects (if they are well designed) are an effective tool for educational purposes. However, this also signifies that it is not guaranteed that climate change education is established comprehensively and for the long term. Not all pupils and students in the countries are educated according to a general, nationwide standard.

Formal opportunities for public participation exist in all of the countries investigated. This is not surprising, because most of the countries are EU Member States and a lot of formal participation requirements are predetermined by EU Directives. Whether these formal opportunities for participation are actually used by the general public for the purpose of preventing climate change is however doubtful. Although this is bound to happen in some cases, it is not currently common practice. In all of the countries investigated, personal, sometimes egoistic purposes are predominantly the drivers for participation. As for informal participation, the situation is more varied. Denmark and Austria stand out with a considerable number of participative projects for both adolescents and young people that are focused especially on climate change. In the UK, a similar situation as in the field of education can be identified, where sustainability in general is more visible as a topic for participative projects and events than climate change in particular. In the Czech Republic too, informal participation projects are not directly focused on climate change, but they tackle the issue indirectly. In Germany the awareness of the need for public participation is currently in-

creasing among politicians and experts and the topic is discussed a lot in the context of the energy transition.

It is a similar situation in the field of youth participation. There are no obligatory formal participation procedures explicitly targeting young people in the countries that were investigated. There are a lot of projects and approaches that are well organised, however these are mainly flagship projects that do not reflect the everyday reality in the countries. This means, theoretically in every country there are a lot of opportunities, however they are not used for climate protection purposes to a large extent.

It can be concluded that formal participation in climate-related issues is not separate in the countries included in this study, but rather integrated into existing participation procedures on environmental issues. Informal participation is not well coordinated and its results do not exert any real influence on political decisions. Furthermore, it is not obligatory and done on a voluntary basis. More standardisation would be desirable here.

With the exception of the Czech Republic the issue of climate change is an important topic for the population in all of the investigated countries. However, knowledge of the problem does not necessarily lead the population and the government to take appropriate action. Even though there are manifold opportunities to participate the total number of citizens who are engaged in the field of climate protection is relatively low in all countries investigated. Even though in every country there are some very active citizens, organisations and initiatives, the motivation of the general public to participate and engage in climate protection issues is low.

Through our survey some general reasons for the low motivation of people to participate and engage in climate protection issues that seem to be valid for all countries investigated could be figured out: In formal participation procedures there are too many administrative barriers. Active participation requires expert knowledge of procedures and laws that most of the citizens don't have. Citizens often feel overwhelmed by the procedures. This means that education and training about the options citizens have to participate in political decision making needs to be increased.

A further reason is that there is a lack of transparency in formal participation procedures: On the one hand procedures are not published very clearly so that most of the citizens don't notice that they could participate. On the other hand, it often remains unclear how the results of participation procedures are considered in the final decisions. Citizens get the impression that they can't really take influence and feel disempowered. Therefore, a fixed procedure for the integration of the results of formal participation procedures into final decisions would be desirable for the future development of the field of public participation in climate-related issues

Another barrier for citizens to be motivated to take action against climate change is the complexity of the issue itself. For many people in the countries investigated climate change seems to be a problem especially in other parts of the world that are far away from their personal lives. It is hard for them to realize that they can influence the climate with their personal decisions and behaviour. This is an indicator for the necessity for further enhancing education on climate change and especially focus on behavioural change and individual

opportunities for action. The survey has shown that especially in these issues there is a lack of standardisation and dissemination of educational programmes and projects.

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