

The background image shows a child from behind, wearing a bright green raincoat and a yellow beanie. The child is sitting on a concrete ledge next to a stream, playing with a blue toy car. The water in the stream is brown and turbulent, suggesting flooding or heavy rain. The overall scene is somewhat somber due to the weather and the color of the water.

# Raising children in a warming climate

Offering children and adolescents a hopeful future

August 2022 | Tom van Yperen - Netherlands Youth institute

Research shows that climate change has a negative impact on the mental well-being of children and adolescents. Literature shows that in order to improve their well-being it is not enough just to inform them about what is going on and to encourage them to take action. It is crucial that they can look forward to a hopeful future. That entails the responsibility for parents and other educators to create such a future. Words are not enough. The situation calls for sustainable behaviour of parents and other educators in childcare and school, but also in the neighbourhood, society and politics. Participation of children and adolescents is essential because they can help adults develop sustainable behaviour and thus a hopeful future.

## Summary

Children and adolescents receive a variety of information and images about climate change, which influence their perception of the future and their well-being.

In this essay we answer two questions based on an exploratory literature study:

- What does climate change mean for the growing up and parenting of children and adolescents?
- How can parents and other educators offer children and adolescents positive prospects for the future?

We want to use this essay to discuss with partners how to further deepen our knowledge about the adequate actions of parents and other educators.

Research shows that about three quarters of children and adolescents are concerned about climate change. This manifests itself in fear and sadness, a loss of confidence in governments and companies, and the feeling of being abandoned by earlier generations. Roughly a quarter of all children and adolescents these feelings disrupt their daily lives or their sleep. The vast majority of children and adolescents appear to have the resilience to deal with the situation. Factors that are likely to be protective are social cohesion and a good parent-child relationship. Pre-existing mental health problems may be a risk factor. Research is needed to gain more insight into risk and protective factors.

In general, children deal with their concerns in three ways:

- they are problem-oriented and take action to solve problems;
- they downplay the problem or ignore it;
- they are mainly looking for a hopeful perspective of the future.

A combination of action-orientation, temporarily ignoring the problem, and focusing on creating hope seems a healthy way to deal with the issue of climate change. It is important that adults also take action and provide hope for a better future. In turn, children and adolescents appear to be able to contribute to this action through everything they learn at school and on the internet and by social media. In that sense, it really is a matter of working together.

Hope appears to be an important concept in climate change pedagogy. Parents and other educators have a role to help children and adolescents look for solutions and future prospects, to challenge children and adolescent' thinking patterns and to actively involve them in initiatives. Based on our study, we would like to add that it is important to regularly seek relaxation. We see that pedagogy positions adults as models for sustainable behaviour, while research shows that they also learn a lot from their children and adapt their thinking and behaviour accordingly. From a pedagogical perspec-

tive, this offers adults the opportunity to show how to deal with situations in which personal knowledge, certainties and actions are falling short, but progress can be made by finding solutions and learning together.

All in all, the action perspective of parents and other educators mainly lies in three areas:

- put children and adolescents on the track of a mix of taking action, relaxing and looking for a hopeful future;
- working together with children and adolescents in learning to live more sustainably and to be open to everyone's knowledge and ideas in this area;
- working towards strong relationships in the social network and on society as a safety net and as a collective to contribute to.

Educators in domains beyond the family also have a specific responsibility in this regard. For example, research shows that when children are introduced to nature at an early age, for example in childcare and youth work, there is a greater chance that they will become more involved with it later on. Research also shows that focusing on knowledge transfer in education about the climate problem can harm the mental well-being of children. That is why it is important that education contributes to the three areas mentioned before. In this way educators in other domains also strengthen home education, because we know that children and adolescents influence their parents.

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# 1. Introduction

## 1.1 The situation: an existential problem

The earth is warming because humans release large amounts of greenhouse gas into the air. That is hardly cause for debate anymore. The report of the Intergovernmental Panel on Climate Change (IPCC) of April 2022<sup>1</sup> speaks of still increasing emissions. The IPCC reports that the critical limit of one and a half degrees of warming is very likely to be reached in ten years and will be exceeded afterwards. The World Meteorological Organization even speaks of a fifty percent chance that this exceedance will take place in five years' time.<sup>2</sup>

The long-term consequences of this global warming are very serious. It leads, among other things, to more extreme weather, rising sea levels and areas drying out. Some regions are becoming difficult to live in. Health problems are caused, for instance by heat stress, an increase in allergies and infectious diseases.<sup>3</sup> But climate change has also been identified as a psychological and social problem.<sup>4</sup> Important psychological consequences include mental health problems, a feeling of helplessness and hopelessness, and intense feelings of loss.<sup>5</sup>

It has also been called the greatest threat facing humanity.<sup>6</sup> In literature, the term 'existential' is also used to express that climate change has major consequences for our existence and for the social system.<sup>7</sup> This makes it also a pedagogical problem. Because how do you raise children in a situation with such a bleak perspective?

## 1.2 Why this essay

Children and adolescents learn a lot about what is happening in the world through their parents, school, media and through mutual contacts. This inevitably affects their well-being because it shapes their vision of the future. The mission of the Netherlands Youth Institute (Nji) is to contribute to a promising youth by providing knowledge. Our mission is to improve the lives of children, young people and their parents and other educators.

In view of the climate change and its consequences for the future of children and adolescents, we feel responsible for searching knowledge about what this means for parenting and the education of children and adolescents. How can we offer them promising prospects for the future?

## 1.3 Goal and setup of this essay

In order to answer this question, we conducted an exploration of international literature. We have searched for:

- what climate change means in particular for the well-being and mental health of children and adolescents and
- what educators, especially parents and teachers, can do to promote the well-being and mental health of children and adolescents and their perspective for a promising future.

We have collected Dutch and English sources in literature through search engines on the internet and the so-called snowball method, in which one source leads to another. We mainly reviewed recent documents, from 2019 onwards, because older sources are often included. This gave us a first, fairly broad exploration of the theme. In the future we want to carry out systematic and more extensive searches with more focus and with specific questions on sub-themes.

In this document we report on the first exploration. We want to use this for further discussions with knowledge partners, such as pedagogical and social scientists, knowledge institutes, policy specialists and experts by experience. We want to discuss which follow-up actions are needed to deepen our knowledge of the issue.

This essay is not aimed at the target group of children, young people, parents, and other educators. For them, we translate our findings into practical information that we offer in a knowledge file on climate change on the Internet ([www.nji.nl/klimaatverandering](http://www.nji.nl/klimaatverandering)). The essay is available to them in this knowledge file.<sup>8</sup>

## 2. Climate change influences the well-being of children and adolescents

### 2.1 Many children and adolescents are worried

#### Children are more vulnerable than adults

Our impression is that most of the literature on the impacts of climate change is based on research investigating the effects of climate disasters, such as forest fires, hurricanes and floods. This research shows that the consequences are greatest for vulnerable groups, including children, the elderly, populations in developing countries and people with an underlying physical or mental condition.<sup>9,10</sup> The literature indicates that children are more sensitive to the effects of climate change than adults<sup>11,12</sup> because they depend more on adults and on social support networks in their dealings with those effects.<sup>13,14</sup> After climate disasters, children show more serious problems than adults, such as post-traumatic stress disorder and depression. The consequences are often present long after a disaster through persistent grief, interrupted schooling and developing behavioural problems.<sup>15,16</sup>

#### Gradual climate change is an environmental stressor

The effect of gradual climate change is less clear. Nevertheless, there is sufficient evidence that gradual climate change has an influence as an environmental stressor. Climate change is experienced as a real and global threat with all the associated concerns. The awareness that there is no simple solution evokes uncertainty and fear for the future.<sup>17</sup> International research shows that around 75 percent of adults over the age of 17 are concerned.<sup>18</sup> We see the same percentage in many studies among children and adolescents, and their concerns manifest themselves in fear and grief, a loss of confidence in governments and businesses, and a sense of abandonment.<sup>19</sup> In a study among Dutch children and adolescents aged 8 to 14 years, 7 percent of a representative research group said that they sometimes have difficulties sleeping because of climate change. In a group that responded to an open survey, this was 30 percent.<sup>20</sup>

### 2.2 The stress is normal, functional, and connected with resilience

#### Don't pathologize, normalize

Scientists write that it is important not to pathologize the emotional response to climate change – also known as ‘climate anxiety’ – too quickly. According to them, we must avoid seeing the response as maladapted and focusing on the individual while disregarding the context.<sup>21</sup> It is better to focus on the ability of many people to adapt, rather than labelling all of them ‘traumatized’ and assuming they need treatment.<sup>22</sup> The response to climate change can also be seen as a healthy, functional response to an environmental stressor, which can motivate one to make one’s voice heard and activate one to do something about the situation.

### **The stress can become disruptive**

It is possible that a dysfunctional response to climate change develops, with, for example, sleep disturbances, apathy and anxiety, interfering with daily functioning.<sup>23</sup> Although adequate research is lacking, it is estimated that 17 to 27 percent of the population is experiencing stress due to climate change which affects their normal functioning in some way. Literature does not provide an unambiguous picture of the effect among children and adolescents. Many studies indicate that young people are generally more concerned about the future than adults. It is therefore plausible that dysfunctional climate anxiety is also more common amongst this group.<sup>24</sup>

### **But most of the time we see resilience**

Research into the consequences of climate disasters shows something important: instead of pathological outcomes, we mainly see resilience among the population. After an initially disturbed functioning, people often report a good recovery. They also report that the events have brought families and communities closer together. This is less the case for children. This is possibly due to the loss or missing of a parent, missed school or a greatly changed environment. Nevertheless, the vast majority of children show resilience and recover within a year. The longer the threat and stress last and the more complicated the situation is, the less favourable the picture.<sup>25</sup> Without a good approach, this can ultimately damage mental health and well-being.<sup>26</sup>

## **2.3 Positive and negative influential factors**

What makes climate change cause mental effects that are functional or dysfunctional? Research provides few indications when it comes to gradual climate change; it mainly says something about factors that influence the mental effects after climate disasters. Those are the following:

- **Social support and social cohesion.**

This counts as a strong, influential protective factor also known as ‘social capital’. It gives access to sources of support, such as direct help, information, childcare, financial resources and emotional and psychological support. Researchers agree that social support and social cohesion act as catalysts in restoring family routines, returning to school and a variety of community activities.<sup>27</sup> Support from peers seems to contribute mainly to a reduction of feelings of anxiety.<sup>28</sup> Living in communities with a lack of social support is considered a risk factor for anxiety-related pathology.<sup>29</sup>

- **The quality of the parent-child relationship**

Although there is still little evidence, there are indications that the parent-child relationship may have a negative influence if there is a negative parenting style, a hostile or conflicted family climate, little sense of a mutual bond and a lack of good connection with the environment.<sup>30</sup> A good family relationship, on the other hand, is a protective factor, especially against feelings of sadness.<sup>31</sup>

- **Pre-existing psychological problems**

Psychological problems that children and adolescents already have, such as anxiety disorders, can amplify the mental effect of climate disasters.<sup>32</sup> Pre-existing psychological problems of parents are also associated with negative reactions from children.<sup>33</sup>



**It makes sense that the same factors play a role in climate change, but research is needed**

These kinds of findings cannot simply be extrapolated to the risk and protective factors that play a role in the mental consequences of gradual climate change. It is logical to assume that the same factors are at work here. But research and experience will have to tell whether that is really the case.

## 3. How do children and adolescents cope with climate change?

### 3.1 Different coping strategies

Children can deal with the threat posed by climate change in different ways - known as coping strategies. A much-cited Swedish study of 12-year-old children found three such strategies, which were later specified in more detail.<sup>34,35</sup> The names of the strategies are not very clear. That is why we adjusted them slightly here and give a short description.

#### **Coping focused on problem solving (action-orientation)**

This is called problem-focused coping in literature. Children with this strategy mainly perceive climate change as a problem they must work to solve. Related statements are:

- 'I think about what I myself can do.'
- 'I search for information about what I as a child can do.'
- 'I talk with my family and friends about what one can do to help.'

According to literature, these children show a high degree of involvement. But because the problem is not easy to solve, awareness of the magnitude and seriousness of climate change can also lead to more psychological distress. The research shows that children in whom this strategy is dominant generally score higher on negative feelings than other groups.

#### **Coping aimed at denial of the problem**

Literature here talks about Emotion-focused coping or about De-emphasizing the seriousness. The children are mainly focused on minimizing or denying the significance of climate change, in order to reduce fear. Related statements are:

- 'I think that the problem is exaggerated.'
- 'I don't care since I don't know much about climate change.'
- 'Climate change is something positive because the summers will get warmer.'
- 'I can't be bothered to care about climate change.'
- 'Nothing serious will happen during my lifetime.'
- 'Climate change does not concern those of us living in Sweden.'

These children score low on involvement, but high on negative feelings. They seem to be able to explain away the threat which leads to less fear in the short term. But this appears to have insufficient effect on negative feelings about the issue, because they do not get rid of those easily.

### **Coping aimed at creating a meaningful future perspective**

This is also known as meaning-focused coping. These children place the problems in a historical perspective and try to find hope in the solving capacities of society and science. Statements related to this attitude are:

- ‘More and more people have started to take climate change seriously.’
- ‘I have faith in humanity; we can fix all problems.’
- ‘I trust scientists to come up with a solution in the future.’
- ‘I have faith in people engaged in environmental organizations.’
- ‘I trust the politicians.’
- ‘Even though it is a big problem, one has to have hope.’

These children show great involvement. Their strategy reduces their fear, without denying the problem, and strengthens optimism and commitment to tackling it. They also experience fewer negative feelings.

## **3.2 A mix of coping strategies helps**

### **No single one is the best**

Those who oversee the effects of the coping strategies may be inclined to label the strategies aimed at problem solving and denial as ineffective, and those aimed at future prospects as the best. But the truth may be a bit more nuanced. Problem-solving coping may have a positive effect when awareness of the magnitude and complexity of the problem is not yet as high, as is the case with young children. It can work well for them to take small actions themselves, such as separating waste, taking shorter showers, not leaving lights on unnecessarily, and so on. But a strong commitment to climate change can also cause considerable and long-term stress because the problem is not easy to solve and may get worse.<sup>36</sup> Therefore, coping aimed at denial can also be useful. After all, it can be healthy to temporarily downplay it, ignore it and look for other activities.<sup>37</sup> It can act as a kind of mental break.

### **Many adolescents apparently need a break**

Interestingly, some studies show that adolescents (aged 14 to 18) are often less concerned about the climate than other age groups.<sup>38</sup> This is also known as ‘the adolescent dip’. One of the explanations is that many young people in this age group are starting to realize that the problem is global, their own influence is small, and that governments and companies are doing (too) little to turn the tide. Some young people are therefore climbing the barricades, but for most a sense of trivialization seems to be the first way to deal with understanding the seriousness of the problem.<sup>39</sup> Another explanation is that adolescents are mainly concerned with themselves, with their own identity. According to this idea, their involvement in the environment will be revived later, especially if the school and the environment pay a lot of attention to the climate issue.<sup>40</sup>

### **A dosed mix that fits the age**

Research into climate change coping strategies has been relatively new and has focused mainly on children and less on young people. With the current state of knowledge we cannot say that one specific coping strategy is better than others. In the first place, age or level of development plays a role. With young children it seems appropriate to keep the issue small and action-oriented, with young people an approach with a broader perspective and a focus on society seems more adequate. For them, balancing the different strategies seems to be a more or less natural way of dealing with the vast and complex problem of climate change. Action-orientation is good, but if it gets too much, a certain amount of avoidance isn't bad at all. Optimism and trust in society are also positive, but if that trust is damaged it can temporarily feel good that you can put your own hand to the wheel or, alternatively, temporarily withdraw into your own world.

## **3.3 The significance of hope**

### **Hope offers perspective**

The striking thing about the coping strategies is that hope plays an important role. Hope is about people expecting a desired change to occur.<sup>41</sup> In problem solving coping, the hope is that individual action contributes to tackling climate change. In denial coping, the hope is that the problem isn't as big as it seems and that it will blow over. In coping aimed at creating a meaningful future perspective, it is mainly the optimism that society and science will eventually be able to cope.<sup>42</sup>

Looking to the future with hope is not only in the interest of young people. The continuation of society needs young people who look to the future with confidence.<sup>43</sup> Such a meaningful future perspective is not easy to achieve, especially for young people. Studies show that – when it comes to climate change – they are more or less trapped in images of threat, gloom, apocalyptic scenarios and failing politics that are spread by the media. These make it difficult for them to think in a nuanced way about the future and include more positive scenarios.<sup>44</sup>

Can positive future prospect be stimulated? A study in the US among adults shows that hope for a better future can be promoted in general, but can at the same time lead to people downplaying the climate problem more often and letting go of personal responsibility to take action.<sup>45</sup> That could lead to a limited, one-sided coping strategy. It seems important to continue to emphasize also the individual's responsibility to take action. This leads to a more hopeful future perspective: if society, science and we as individual citizens prepare well and make considerable efforts, the goal of a liveable and sustainable future can be achieved.

### **The brain adapts hopeful information into existing thinking patterns**

A very strong psychological mechanism involved in the promotion of hope is the confirmation bias. This is the automatic tendency to notice information that fits an existing belief. Once that belief is in your mind, it is not easily changed. For example, if you think that climate change won't affect you that much or will blow over, you are mainly focused on confirming that idea with information. In fact, this process is fuelled by a form of reasoning in which you fabricate arguments to arrive at the conclusion you want, even when there is a lot of evidence that this conclusion is wrong. Conversely, if you think that climate change will destroy civilization, it's hard to get out

of that mindset. Any information to the contrary is filtered through your prejudices, pre-existing knowledge and beliefs. Hopeful information does not easily change your thinking pattern.<sup>46</sup> The extent to which a person indeed gains hope from this information depends on the established pattern. This is not to say that existing beliefs of young people cannot be changed. It is possible to raise hope, but it takes a lot of time, it requires frequent contact with other points of view, and it needs established beliefs to be challenged by making them subject for discussion.<sup>47,48</sup>

### 3.4 The meaning of participation and agency

#### **Not just victim, but also actor**

In the preceding paragraphs, children and adolescents appear to be the main victims of climate change. However, literature demonstrates a gradual shift in focus towards children and adolescents as important actors in the necessary changes.<sup>49,50</sup> Asking them to think along and participate is an important step in this regard. But how do we make sure this happens in a proper way? In 2020, The Washington Post published an article concerning the enormous fear and gloom among young people about what awaits them. Can we ask them to act, with the risk of increasing their fear of an apocalyptic future? According to the article, the answer is yes: we must ask them to act because the problem cannot be fixed in the time frame of the current generations. Future generations will suffer the consequences of climate change and need to adapt their way of life considerably. But according to the author, if we ask them to take action, they deserve an apology from the older generations who brought this situation upon them.<sup>51</sup>

#### **Developmental task for children, young people and adults**

Whether an apology is indeed called for, is something parents should consider for themselves. In any case, such an apology is not enough. Adults will have to put in just as much effort in developing more sustainable behaviour themselves. Asking children and adolescents for their active involvement in tackling the problem can only be healthy for them if they have the necessary resilience and a meaningful future perspective.<sup>52</sup> For that resilience it is important that children and adolescents feel supported when they do not want to deal with the problems for a while and that adults show understanding. It is essential for a meaningful future perspective that many citizens, companies and politicians are already taking action and that their commitment will only increase. Such developments can indeed be seen internationally.<sup>53</sup> There are also hopeful signs in the Netherlands that the mindset and behaviour of the Dutch population, the business community and politics are changing across the board.<sup>54</sup> Many prospects have now been created through which children and adolescents can gain a view of a habitable planet.<sup>55</sup> Not the fossil status quo, but the sustainable alternative is winning, as aptly put in the well-known Dutch magazine 'De Correspondent'.<sup>56</sup> It is clear that this alternative cannot be established by one generation. It is a developmental task for children and adolescents, as well as for adults.

## 4. What does this mean for parenting?

### 4.1 Parenting, pedagogy, and climate change

#### An evolving field of knowledge

There are many articles on the internet about what parents and other educators can do to work for and with children and adolescents towards a more sustainable future. In our exploration of literature however, we did not find much research that provides empirical support for the actions to be taken. This is probably partly due to the relatively recent attention for the issue in social sciences. The increasingly clear picture of what climate change is doing to children and adolescents will fuel that attention. In addition, our study was limited to Dutch and English literature. Since there may be more material in other languages, we want to explore this in a follow-up study.

#### The pedagogy of hope

In Dutch literature we regularly read about the interesting concept of ‘the pedagogy of hope’ (the Dutch pedagogical domain includes parenting as well as teaching). In 2018, Micha de Winter, a leading pedagogue in the Netherlands noted that children grow up in a world that is shaking to its foundations due to, among others, terrorism, undermining of the rule of law, the weakening of Europe and rough manners in social media. All of those will undoubtedly influence the future of these children. He argues – partly based on thinkers such as Dasberg and Dewey – in favour of a pedagogy of hope: ‘that we encourage young people [...] to do justice to the social heritage of their ancestors, and to the importance of future generations.’<sup>57</sup> According to De Winter, parents and educators are able to create hope in the following ways:

- by teaching children and adolescents an inquisitive and curious attitude, in which they individually and together with others look for backgrounds, sources, arguments and possible solutions;
- by interrupting quick judgments of children and adolescents, asking them to list their own arguments and to put themselves in the place of the other person and listen to their arguments and feelings, even if they disagree with this person;
- by presenting optimism as a parent or other educator and by working together in creating hope for the future;
- by promoting the active participation of children and adolescents, as a tool because they learn by participating, and as a goal because democratic society exists by virtue of the active participation of all.<sup>58</sup>

De Winter’s plea does not specifically concern the threat of climate change. A few years earlier, a report of a symposium focusing on climate change was published under the title ‘The climate crisis and a pedagogy of hope.’<sup>59</sup> The Dutch pedagogues Both, Miedema and Schraevesande also refer back to earlier thinkers, in this case Freire, Langeveld and – again – Dasberg. Hope is described as an ardent desire to realize values in which you believe, such as ecological sustainability. In that context, actions are driven by conscious or unconscious emotions and thinking patterns. Parenting should focus first

on these emotions and thinking patterns, and only later on knowledge and competences. This requires self-examination, honesty and setting a good example by parents and other educators in caring for the climate. It is important that children participate and that caring for the climate is embedded in life at home and at school. In this way, small-scale, local action is linked to solving global problems. Great importance is attached to meeting people with different points of view. After all, there are also people who long to maintain a lifestyle that threatens the climate. Therefore, the message is to facilitate the meeting of different views. The authors make critical comments about the premise that solutions should result in a win-win situation. It is pedagogically more sound to be honest about the fact that the necessary changes in lifestyle can also be painful and cause loss. Their advice is to express this and to guide the debate accordingly.

### **The main line of reasoning**

If we compare the plea for the pedagogy of hope with our earlier findings about coping strategies, thinking patterns and the meaning of participating and co-determining, we see clear connections. Parents and other educators are given the role of helping children and adolescents to look for solutions and future prospects, to challenge children's and adolescents' thinking patterns and to actively involve them in initiatives. The pedagogy of hope pays less attention to the need to regularly seek relaxation. It positions adults as important role models who should practice appropriate thinking and behaviour for children and adolescents. As we noted earlier, this is not very realistic, because many adults are still searching for a stand to climate change. In our view, this only makes the issue more pedagogically relevant. Climate change is pre-eminently a subject in which adults can show children and adolescents how to deal with ignorance and uncertainties in life. It allows adults to search together for a more sustainable way of life while learning, and how children, young people and adults can work together in this. It also shows that a successful approach is not only a responsibility of the individual or a number of individuals, but also of the collective of citizens, politics, companies and others. Although hope cannot be drawn from certainties and individual actions, it can be drawn from the growing number of adults who – together with children and adolescents, individually and collectively – contribute to a sustainable future through learning.

### **To visible results**

The difficulty with gradual climate change is that it is a very slow process. Lifestyle changes cannot be perceived to translate into a brake on global warming in the short term. In fact, as we noted earlier, there is a good chance that the climate situation will worsen in the years to come. Will it therefore not be very difficult from a pedagogical perspective to teach and motivate children and adolescents that their efforts really do matter?

This does not have to be so, for two reasons. In the first place, the results of the efforts are clearly visible. It is important to focus on measurable or noticeable actions that are important in relation to tackling climate change, such as reducing gas consumption at home or the amount of waste that the children in the classroom throw in the trash bin every day. The second reason is a more fundamental one. It is good to teach children and adolescents that contributing to a greater goal – even if not immediately visible – is part of our society and contributes to a meaningful life.<sup>60</sup> In fact, what matters here is the role of parenting and education in the transmission and development of values and in

giving meaning to life. Just as we donate money to the Red Cross when there is an emergency somewhere in the world, we also adjust our lifestyle in the hope that this will help us realize a sustainable future. The more children, young people and adults contribute, the more successful the campaign. Participation is the result here.

## 4.2 Teaching a healthy way of thinking

### Start early

When parents and other educators introduce children to nature and sustainable behaviour at an early age, they appear to be more involved with the environment at a later age.<sup>61</sup> Furthermore – in the knowledge that thinking patterns once anchored are difficult to change – it makes sense that parents and other educators contribute to children learning a functional thinking pattern as early as possible. Such a thinking pattern helps to deal with matters in a healthy way and to contribute to the solution of the global problem. Based on literature, this seems to mean three things:

- **Discuss the problem, the solutions and a hopeful future**

It is important that parents and other educators encourage children and adolescents to become acquainted with the problem and express their feelings about it. At the same time, they should emphasize that these feelings are normal and that many people experience similar feelings. It is of course important to take into account their developmental age: small and focused on the immediate environment or experience of the young child, and increasingly focused on society at an older age. It helps to express appreciation for what is happening to improve their prospects of the future. And it is important to be honest, indicating that the lifestyle change that is needed can hurt because we may have to say goodbye to nice things that are very bad for the climate. Clearly point out the positive developments that are hopeful and that are gaining momentum.

- **Contribute to solutions**

It makes sense to work on solutions in the family, school and neighbourhood.<sup>62</sup> Extra appreciation should be expressed if the child and the young person also actively contribute to solutions and come up with ideas. All of this should again be done in an age-appropriate way.

- **Taking a break is healthy**

It is good to teach children and adolescents that it is normal and healthy to seek relaxation in the here-and-now and not to be constantly preoccupied with global problems. Sometimes a short or longer break from contributing to the solution is necessary to regain the strength to continue. Not continuously keeping abreast of the news and instead doing fun things contributes to mental health and resilience.



## 4.3 Acting together, thinking along and co-decision making

### An invitation to children and adolescents

It is an important responsibility of parents and other educators to jointly give shape to a more sustainable life. Practicing sustainable behaviour as parents and educators is contagious: it motivates children and adolescents to join in. It is important to not just invite children and adolescents to participate, but to also ask them to think along and participate in decisions about further steps in tackling the climate problem. This is possible at all levels: in the family, at school, in the municipality, in the region, at national level, and at world conferences. Researchers point out that this leads to a more effective and fairer climate policy.<sup>63</sup>

### Parents and other educators can learn from children

At the same time, it helps if parents and educators are open to learning from children and adolescents in this area. Parents and other educators will have to get used to the fact that their children sometimes know more about climate change than they do.<sup>64</sup> Some parents may not be as advanced as their child in their willingness to change their behaviour. Children and adolescents may learn at school how to find solutions for the disagreements in the family. Children and young persons can for instance learn to express their worries about the future and what they learned at school about possible solutions. This helps to discuss ideas with their parents. Teachers can let their students participate in sustainability projects, creating exhibitions for parents and organizing meetings between parents. It is important to work together: in the case of climate change, hope cannot be created by the individual, it arises in interaction with others.<sup>65</sup>

## 4.4 Working on strong relationships and diversity

### Invest in your family and network as an educator

Good family relationships and contacts in the family, school and neighbourhood contribute to greater resilience. Relationships and contacts provide a connection, a safety net, and a network for exchanging feelings and ideas on how to act. They also help to limit the mental consequences of major events, such as floods.<sup>66</sup> They also offer relaxation by doing fun things together. It therefore makes a lot of sense as parents and other educators to invest in relationships and contacts in families, schools and neighbourhoods. Furthermore, such social connections indicate that people are willing to do something for each other without always having a selfish interest. Educators can convey the important value that supporting each other and working towards a good society, also for the future, is part of life.

### Also step outside your 'bubble'

Contacts do not have to take place exclusively between like-minded people. Meetings with a variety of people with differing views are helpful. They help to build a repertoire of thinking in which problem solving, future prospects and living in the here-and-now can alternate. Diversity seems to be the key word here: meeting peers outside one's own social circles and getting to know inspiring adults. Educators can play an important role in facilitating such encounters, for example by bringing children in contact with other people, pointing out interesting speakers and cross-thinkers on the Internet or

taking them to meetings. Children or young people can also be invited to help look for people who, for example, have interesting ideas and strengthen the hope for a liveable world in the future. In this way everyone contributes.

## 4.5 The role of educators other than parents

### Educators outside the family

So far we have mainly talked about educators in general and parents in particular. Of course it is not the exclusive responsibility of parents to shape a more sustainable life. Other educators, such as pedagogical staff of childcare centres, teachers in education, youth workers and volunteers in scouting also play a role. We will pay more attention to their contribution in another trajectory.<sup>67</sup> The first exploration of the literature on climate change presents quite a lot of information about the role of childcare and school. We will limit ourselves here to a brief illustration of how professional educators can play their part in those domains.

### Childcare and after-school care

- Several studies show that nature has a beneficial influence on the overall development of children.<sup>68,69</sup> Pedagogical staff in childcare and after-school care would therefore do well to offer children the opportunity to play in nature and to discover what nature is. It provides physical movement and stimulates fantasy, and development of social, emotional and play abilities. That is partly the reason why Dutch partnerships and organizations such as Healthy Childcare (*Gezonde Kinderopvang*) and the Institute for Nature and Environmental Education (IVN) collect and share suggestions about how childcare and after-school care can shape activities in and about nature. For example, IVN together with childcare and schools is developing so-called Tiny Forests, small forests no more than a football field in size. In addition to children's introduction to nature and fun play and discovery space that this provides for them, the forests also lead to more biodiversity and contribute to CO<sub>2</sub> storage and water retention in the areas.<sup>70</sup> In recent years, these initiatives have gained an additional meaning. As we described earlier, it appears that children who are introduced to nature and sustainable behaviour at an early age are more involved with the environment in later life.<sup>71</sup> In this way, childcare and after-school care contribute in a playful way to a more sustainable future.

### The school

One of the core educational goals in the Netherlands is that students learn about the climate and energy sources in our country and in the world. Several sources in literature point out that it is not enough to properly inform students about climate change and try to make them understand what is happening.<sup>72, 73, 74, 75, 76</sup> Transferring knowledge about climate change to children and adolescents without a hopeful perspective for action can have adverse effects. The image of a bleak future can promote apathy and negativity. In that light, education that focuses exclusively on knowledge transfer could be seen as a risk factor for the well-being of children and adolescents. It is important to combine proper knowledge transfer with an action-oriented approach and a hopeful future perspective. Interesting recommendations for this can be found in literature:

- Teachers can encourage children and adolescents to look for *alternative scenarios for the future*.<sup>77</sup> These scenarios can, for example, deal with questions such as: what does a CO<sub>2</sub>-neutral future look like? What does a sustainable city look like? What examples are already available?
- It is also possible to *link sustainability issues to utensils* that are important to children and adolescents, such as their smartphones.<sup>78</sup> For example, where do its materials come from, what does this mean for the environment and how can the impact on that environment be reduced?
- Because living more sustainably is a quest, there must be *space to explore, to come up with solutions, try them out and learn from them*. This allows for the subject to be excluded from the atmosphere of doom and gloom: it is exciting, requires creativity, entrepreneurship and offers an interesting future perspective.<sup>79</sup> For example, which companies are making significant efforts to become more sustainable in the region? What do they encounter and how do they solve issues? What inspiring examples can we find on the internet?
- Programmes offering a repertory of activities have been developed for schools. The so-called *Eco-Schools*<sup>80</sup> and the *Whole School Approach* of the Learning for Tomorrow<sup>81,82</sup> cooperative are well known. These types of programmes characteristically not only offer children and adolescents knowledge and put them into action mode, but also work towards a positive future perspective. An interesting aspect of the *Whole School Approach* is the explicit premise that both students and educators have a lot to learn in this area. Here too, it can be seen that children, young people and adults can work together to shape a more sustainable future. It is the pedagogy of hope at its best.

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