PUBLIZIERBARER ENDBERICHT

A) Projektdaten

Kurztitel:	AUTreach
Langtitel:	Communicating climate aware behaviour to young people in Austria
Programm inkl. Jahr:	ACRP, 6th Call (2013)
Dauer:	01.05.2014 bis 30.04.2016
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Projekt- und KooperationspartnerIn (inkl. Bundesland):	Austrian Institute for Sustainable Development (Wien) Environmental Agency Austria (Wien) Climate Outreach (Oxford, UK)
Schlagwörter:	Climate communication, climate awareness, climate aware behaviour, climate youth study
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B) Project overview

1. Kurzfassung

Die heutige Jugend wird von den Auswirkungen des Klimawandels massiv betroffen sein. Dennoch erscheint es oft schwierig, bei Jugendlichen Interesse für Klimathemen und klimabewusstes Verhalten zu wecken. Einen Beitrag dazu dürfte die Art wie Klimathemen derzeit vermittelt werden leisten z.B. in Form nüchterner, schwer nachvollziehbarer, wissenschaftlicher Fakten oder katastrophenfokussiert in Verbindung mit düsteren Zukunftsprognosen.

Das Projekt AUTreach untersucht welche Klimakommunikationsstrategien und -formate bei der Zielgruppe junger Menschen auf positive Resonanz stoßen, welche Kritierien Erfolg versprechen und worin mögliche Barrieren für mehr Klimaengagement in der Zielgruppe zu verorten sind. Folgende **Forschungsfragen** standen dabei im Vordergrund:

- Wie können Klimathemen speziell an Jugendliche erfolgreich kommuniziert werden?
- Welche Kriterien zeichnen gut gelungene und effektive Klima-Kommunikationsformate aus der Sicht von Jugendlichen und aus der Sicht von Stakeholdern aus?
- Welche klimarelevanten Einstellungen und Alltagsentscheidungen prägen den Alltag von Jugendlichen und bilden geeignete Andockstellen für Klima-Kommunikationsformate?
- Über welche Kanäle informieren sich junge Menschen über Klimathemen und welche Formattypen (z.B. Videos, Social Media, Veranstaltungen, Unterrichtsmodule) eignen sich besonders um klimabewusstes Verhalten bei jungen Menschen zu fördern?

Methodik

Im Rahmen des Multi-Method Ansatzes des Projekts wurden sowohl quantitative als auch qualitative Daten erhoben und in einer Synthese zusammengeführt. Den Beginn des Projekts markierte eine umfassende **Literaturstudie** (WP2), die darauf abzielte den internationalen Stand des Wissens zu den Themen Klimawissen und klimabewusstes Verhalten bei Jugendlichen zusammenzuführen. Parallel dazu wurden Stakeholder mittels Kurzfragebogen zu möglichen Good-Practice Beispielen und Erfolgskriterien befragt. Im Anschluss daran wurde eine **quantitative Online-Befragung** von 14-24 Jährigen in Österreich durchgeführt (WP3-1). Ziel der Befragung war es die Themen Klimawissen, Informationsgewohnheiten und –präferenzen, Werthaltungen sowie die Bereitschaft zu klimabewusstem Verhalten von Jugendlichen näher zu beleuchten zu können. Eine **qualitative Ex-post Evaluierung** von drei ausgewählten Veranstaltungen mit Klimabezug sollte zudem aufzeigen, welche Spuren diese bei den jugendlichen TeilnehmerInnen hinsichtlich Interesse, Neugierde, Wissenszuwachs und konkreter Verhaltensänderungen nach sich zogen (WP3-2). In einer Serie von 8 **Klimakommunikations-Workshops** mit ca. 150 Jugendlichen wurden 25 bestehende Klimakommunikationsformate (z.B. Bücher, Apps, Online-Spiel) in Form moderierter Kleingruppen getestet, um zu dokumentieren welche Aspekte Jugendliche zur Nutzung der Formate anregen bzw. von der Nutzung abhalten würden (WP4).

Ergebnisse

Die **Literaturstudie** verdeutlichte, dass Jugendliche europaweit betrachtet den Klimawandel mehrheitlich als großes Problem ansehen, dass jedoch ihr Verständnis von Ursachen und Auswirkungen des Klimawandels in vielen Ländern noch nennenswerte Lücken aufweist. Zudem fällt auf, dass sich die relativ hohe Problemwahrnehmung kaum merklich in persönlichem oder politischem Engagement niederschlägt. Als mögliche Gründe dafür gelten, dass die Folgen des Klimawandels zeitlich weniger akut wirken als andere Themen (z.B. Wirtschaftskrise) und die Verantwortung an die Politik und große Unternehmen abgeschoben wird.

Die **Online-Befragung** unter ca. 300 Jugendlichen in Österreich hat ergeben, dass sich rund 40 % eher nicht gut über den Klimawandel informiert fühlen, wobei dieses Gefühl mit steigendem Alter und formalen Bildungsgrad abnimmt. Zudem war der Anteil an Ursachen-SkeptikerInnen, welche den Mensch nicht für die globale Erwärmung verantwortlich sehen, mit 14% der Befragten relativ hoch. Hinsichtlich des Klimaengagements zeigt sich, dass sich die Befragten v.a. an niederschwelligen Maßnahmen beteiligen. So nehmen 23% an Unterschriftenaktionen teil. Als Hauptbarrieren für Klimaengagement werden fehlende zeitliche Ressourcen sowie mangelndes

Interesse angegeben. Mehr über den Klimawandel würden die Befragten gerne im Fernsehen oder über Youtube erfahren. Einschlägige Klima-Apps und Bücher stoßen auf relativ wenig Interesse.

Die **Ex-post Evaluierung** von drei einschlägigen Veranstaltungen mit Klimabezug hat deutlich gezeigt, dass diese vor allem von bereits sensibilisierten und klimabewusst agierenden jungen Menschen besucht wurden. Aus den Interviews geht zudem hervor, dass bei den BesucherInnen durch den Veranstaltungsbesuch großteils keine konkreten, neuen klimabewussten Verhaltensmuster entstanden bzw. hinzugekommen sind. Einige verwiesen aber darauf, dass die Veranstaltungen aber einen wichtigen Beitrag dazu geleistet hätten die eigene Lebensweise zu reflektieren, wobei besonders häufig dabei die Bereiche Ernährung, Mode und Mobilität erwähnt wurden.   Zudem fühlten sie viele in ihrem bereits adaptierten (klimabewussten) Tun durch den Austausch mit anderen BesucherInnen oder Impulse von inspirierenden Vortragenden bestärkt.

Aus den Ergebnissen der **Klimakommunikations-Workshops** wurden weitere jugendspezifische Erfolgskriterien abgeleitet sowie einige der in der Literatur identifizierten Erfolgskriterien bestätigt. Häufig wurde positiv erwähnt, wenn die getesteten Formate gut auf die Werte und Interessen der Zielgruppe abgestimmt waren und einen Bezug zu ihrem Alltag herstellen konnten. Die befragten Jugendlichen lehnten ein Format schnell ab, wenn sie sich (inhaltlich) unterfordert fühlten, sie wollten „Neues" erfahren und fundiertes Wissen („Fakten") vermittelt bekommen. Besonders wichtig war Jugendlichen auch die Wirkung ihrer eigenen Handlungen erkennen zu können („Selbstwirksamkeit"). Konkrete Maßnahmen, Empfehlungen oder Zielvorgaben wurden dennoch oft kritisch hinterfragt, wenn sie aus Sicht der Jugendlichen nicht „realistisch" erschienen. Auch die Möglichkeit zu Interaktion und Austausch mit Gleichgesinnten (z.B. online-Spiele, Veranstaltungen) oder das Aufzeigen von Good-Practice Beispielen wurde sehr geschätzt. Darüber hinaus kam ein als professionelles und „glaubwürdiges" Design bei jungen Menschen gut an.

Bei der **Zusammenschau** der quantitativen und qualitativen Ergebnisse kristallisierten sich drei zentrale Aspekte heraus, die primär adressiert werden sollten um Klimathemen und klimabewusstes Verhalten für Jugendliche attraktiver zu machen:

1) **Klimawandel - ein ‚uncooles' Thema:** Durch die jahrelange *problem- und katastrophenfokussierte Vermittlung* von Klimathemen scheint der Begriff Klimawandel bei jungen Menschen stark negativ konnotiert zu sein. Zusätzlich scheint das Thema Klimawandel stark mit der *Prägung ‚Schulstoff'* verknüpft zu sein. Zudem scheint die Annahme, dass klimabewusste Verhaltensänderungen von der eigenen sozialen Gruppe nicht akzeptiert werden könnten, für viele Jugendliche eine *zentrale Barriere* zu sein. All dies trägt zum eher „uncoolen" Image von Klimathemen bei und scheint einer freiwilligen, engagierten Auseinandersetzung mit dem Thema eher entgegenzuwirken. Zur Steigerung der *sozialen Akzeptanz* von klimabewusstem Verhalten dienen vor allem Vorbilder - ‚Verhaltenspioniere' in der eigenen sozialen Gruppe ebenso wie berühmte, vertrauenswürdige Vorbilder.

2) **‚Stellschrauben' für Jugendliche aufzeigen:** Viele Jugendliche haben das Gefühl dem Klimawandel als Individuum machtlos gegenüber zu stehen. Die Kommunikation von klimabewusstem Verhalten sollte daher grundsätzlich positiv und lösungsorientiert sein und *konkrete Maßnahmen* für ihre *Lebenssituation* anbieten. Verzichtsgebote und moralische Appelle lassen Jugendliche diesbezüglich eher auf Distanz gehen.

3) **Notwendigkeit einer breit gefächerten Klimakommunikation**: Insofern, als Klimawissen und -engagement innerhalb der Zielgruppe junger Menschen unterschiedlich ausgeprägt sind, führen Einheitslösungen bei vielen Untergruppen zu keinerlei Verhaltensänderungen. Verschiedene Kommunikationsstrategien sollten eingesetzt werden, um auch die Vielfalt an Werten und Interessen von jungen Menschen (und damit verbundenen Anknüpfungspunkten für Klimakommunikation) auszuschöpfen.

Um die gesammelten Ergebnisse auch für Stakeholder niederschwellig zugänglich zu machen wurde eine *Online-Plattform* entwickelt, welche eine Sammlung von Good-pratice Formaten sowie eine „Do-it-yourself Toolbox" enthält, die als Hilfsmittel bei der Entwicklung von neuen, zielgruppenorientierten Formaten verwendet werden kann (www.autreach.boku.ac.at).

2. Executive Summary

Young people will be most affected by the impacts of global warming. However it seems rather difficult to engage young people in climate issues and promoting climate aware behaviour amongst them. This might be due to the fact that up to now climate communication towards young people often focussed on complicated scientific facts, used catastrophic imagery only stressed other cheerless scenarios for their future.

The project AUTreach investigates the effect of different climate communication strategies and formats on young people to identify existing barriers and potential drivers to tailor climate communication in a more target group-oriented manner.
The project covered the following research questions:

- How can climate issues be communicated more effectively towards young people?
- What is the perspective of young people and stakeholders on potential success criteria for good-practice climate communication?
- Which values, attitudes and interests could be used as bridges in re-framing climate communication towards young people?
- What are young people's information preferences regarding climate issues and and which format types (e.g. videos, social media, event, lectures) imply the potential of (climate aware) behaviour changes?

Methods
A multi-method-approach was applied to collect both quantitative and qualitative data.
At the beginning a **literature review** was conducted (WP2) to assess the state of knowledge regarding climate literacy and climate engagement among young people.
Additionally a stakeholder survey was conducted to gather success criteria and good-practice examples for climate communication formats.
Further a **quantitative online survey** was installed targeted at 14-24year olds in Austria (WP3-1). The survey covered carbon literacy, information patterns and preferred channels, values and attitudes towards climate change as well as climate engagement.
In the frame of a **qualitative ex-post analysis**, young participants of selected climate events were interviewed (WP3-2). These qualitative, face-to-face interviews were scheduled 4-6 weeks after the events, as they focussed on possible impacts regarding carbon literacy, interest or concrete changes of behaviour.
In a series of 8 **climate communication experiments**, about 150 school and university students were asked to test and evaluate 25 selected climate communication formats (e.g. apps, books, online games). The tests were conducted in focus group settings facilitated by researchers and tape-recorded, to document what inspires or prevents young people from using climate communication formats (WP4).

Results
The results of the **literature review** indicated that although concern about climate change is rather high in the group of young people Europe-wide, there are wide-spread deficits regarding the carbon literacy of young people. It further pointed out that the relatively high levels of concern do not directly translate into personal or political engagement to combat climate change. Both psychological distancing combined with the prioritisation of more urgent issues (e.g. economic crisis) and the fact that young people consider basically politics and industry responsible to tackle climate change seem relevant in this context.
The **online survey** among 300 young people in Austria showed that 40% of the respondents felt rather not well informed about climate change. However the stated carbon literacy increased with age and higher levels of education. 14% of the respondents proofed to be sceptic that humans are responsible for climate change. Regarding public engagement respondents supported mainly low-threshold actions with minimum inconvenience (e.g. 23% sign petitions). To the young people that stated not to perform any climate action up to now, a lack of time and interest seem to be the most relevant barriers.

The majority of respondents stated to prefer videos (TV and youtube) as communication formats to learn more about climate change and climate action. Whereas, ratings for books and climate apps were rather low.

The results of the **ex-post analysis** suggested, that young people participating in climate events displayed considerably high levels of carbon literacy and engagement compared to those stated by respondents of the quantitative survey. However, participating in the events did not lead to concrete, new climate aware behaviour patterns among participants. Whereas several interviewees hinted at the fact that the event inputs as well as other participants did inspire them to reflect their lifestyles particularly regarding food, fashion and mobility. Further meeting inspiring speakers or peers through the events seemed to have an affirmative effect on already established climate aware behaviour patterns of the young participants.

The testing of selected communication formats (in **climate communication experiments**) resulted in a weighted list on youth-specific success criteria and points of critics. Young people perceived formats particularly positive when the content resonated to their values and interests and covered solutions relevant and applicable in their daily lives. They stated to be eager for new as well as sound information, whereas they criticised formats with contents they felt under challenged by. Further, young testers perceived it very positive when formats addressed the impact of measures lying within their scope of individual action as this increased their feeling of being self-efficient.

Whereas concrete measures, recommendations or suggested targets were considered critically if they were too ambitious or rather impossible to reach (e.g. target setting in online games and applications). Tester did very much appreciate when formats provided interaction with peers or like-minded people or when they illustrated good-practice examples. Further authentic, professional design was stated to be crucial for the acceptance of climate communication formats.

Looking at the **synthesis** of quantitative and qualitative results, three issues emerged, that should be primarily addressed in order to engage young people more deeply in climate issues and climate aware behaviour:

1) **The 'un-coolness' of climate change:** Also among young people climate change seems to be negatively connoted due to years of problem- and catastrophe-focused climate communication. Further young people strongly associate climate change to educational contexts and put it on a level with other school subject materials. What is more, a central barrier to young climate action is the fear to adopt a (climate aware) behaviour that is not accepted within the own peer group. Taken together, this manifests the rather „uncool" image of climate issues and impedes a voluntary, motivated engagement with climate change issues. Therefore empowering and promoting role models (e.g. peers, trusted persons or celebrities) might play a crucial role to increase the social acceptance of climate aware lifestyle.

2) **New empowering frames for climate issues**: Climate change makes a lot of young people feel rather helpless in their role as ‚small' individuals. This stresses necessity to reframe climate communication towards young people in a more positive and solution-oriented manner, that relates to concrete, impactful contributions they can pick up on. Whereas moral appeals or claims for abstinence can easily backfire and disengage young people.

3) **Need for diversified climate communication**: As carbon literacy and climate engagement vary significantly within the target group of young people 'one-size-fits-all' approaches for climate communication might not work for many of the subgroups within this group. Furthermore, the diversity of values-sets and interests of young people that constitute possible entrance points for climate communication call for diversified strategies of framing climate issues.

To disseminate the results of the project to a wider audience of stakeholders and multipliers of climate issues an **online-platform** was developed, providing a good-practice selection of communication formats as well as a „do-it-yourself toolbox", that should support the development of new, target group oriented climate communication formats (www.autreach.boku.ac.at).

3. Background and objectives

Although climate change might significantly impact the future scope of action of young people, their engagement to take individual or collective action still seems to be somewhat limited. However, profound behaviour changes are essential to ensure that global warming does not exceed the limit of 2°C (Stagl et al. 2014). Against this background it seem crucial to reach out for the target group of young people with tailored, appealing and solution-oriented climate communication to increase their awareness of climate issues, their knowledge of possible solutions and their personal engagement.

Barriers and drivers influencing climate awareness and climate aware behaviour

Several studies revealed that young people in Europe perceive climate change as a serious problem and a grand challenge humanity is facing (Corner et al. 2015, Albert & Schneekloth 2010, Littich 2012). However, this relatively high level of climate concern does not automatically translate into climate aware behaviour. This discrepancy is referred to as value-action gap (Kollmuss & Agyeman 2010, Wibeck 2013, Whitmarsh 2009). Regarding the status of current individual climate action a Europe wide survey on climate change revealed that young cohorts (<24y) stated to contribute even less to mitigate climate change through behaviour changes than older cohorts (Eurobarometer 2014). Further, behaviour changes young people have already adopted comprise mainly low-threshold activities e.g. recycling or using energy saving light bulbs resulting in minor impacts on cutting down of greenhouse gas emissions (Eurobarometer 2014).

Underlying patterns that contribute to the value-action gap and the according legacy of individual climate action have been described by both environmental psychologists and sociologist based on models for pro-environmental behaviour (e.g. Kollmuss & Agyeman 2010, Bamberg & Möser 2007, Hines et al. 1987, Fietkau & Kessel 1981, Ajzen & Fishbein 1980). A summary of those partly conflicting, personal and situational factors relevant to climate aware behaviour have been identified in the scientific literature are summarised in Figure 1.
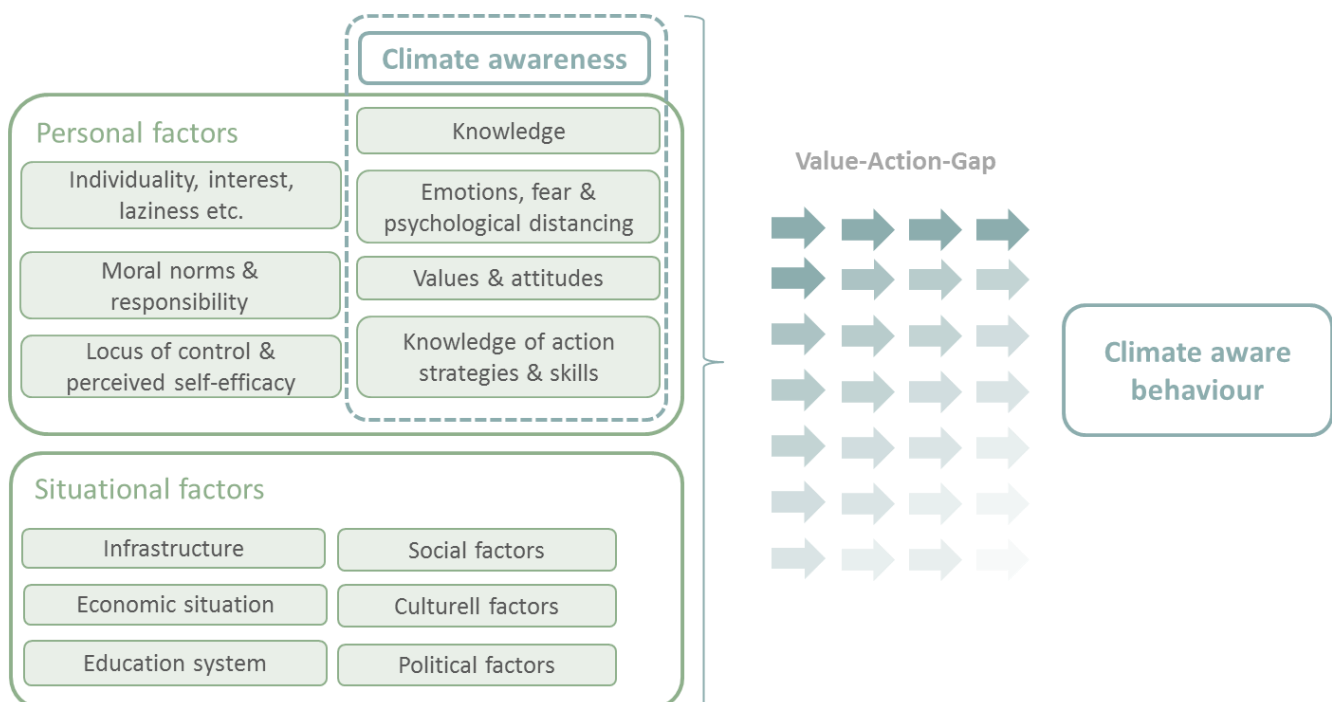

Figure 1: Factors influencing climate aware behaviour (own illustration, adopted after Chiari et al. 2016, Bamberg & Möser 2007, Kollmuss & Agyeman 2010, Hines et al. 1986, Swim et al. 2009, Blake 1999)

Environmental psychologists have identified a psychological phenomenon referred to as „psychological distancing" impedes individual climate engagement (Moser 2014, Swim et al. 2009,

Corner et al. 2015, Spence et al. 2010). According to this theory people in the northern hemisphere perceive climate change as a problem of faraway places impacting faraway times and attach more urgency to other societal problem e.g. the economic crisis or unemployment.

However, attempts to increase urgency by using only catastrophic, fear-inducing representations on climate change can backfire and seem to have only limited potential to stimulate climate aware behaviour (O'Neill & Nicholson-Cole 2009, Lowe et al. 2006, Swim et al. 2009, Nerlich et al. 2010).

Besides the negative notion of climate change, particularly for young people the lack of self-efficacy, empowerment and responsibility seems to be a crucial barrier (Fielding & Head 2012; Moser 2010, Pidgeon 2012). Further peer pressure needs to be considered (Moser et al. 2010, Corner & Roberts 2014b, Leitner 2011) as potential negative feedback from peers influences young people's willingness to adopt climate aware behaviour (Kollmuss & Agyeman 2010).

To promote climate aware behavior these potential barriers and pitfalls need to be outweighed by tailored, solution-oriented, and engaging climate communication approaches.

Objectives of the project

The research project AUTreach focused on identifying more effective ways to engage the target group of young people[1] with issues around climate change and climate aware behaviour. It further aimed to identify and empirically test youth-specific barriers and drivers relevant in this context.

The project covered the following research questions:

- What is the perspective of young people and stakeholders on potential success criteria for good-practice climate communication?
- Which values, attitudes and interests could be used as bridges in re-framing climate communication towards young people?
- What are young people's information preferences regarding climate issues and which format types (e.g. videos, social media, event, lectures) imply the potential of (climate aware) behavior changes?

In addition, the transdisciplinary research approach and the according involvement of potential multipliers and stakeholders (teachers, scientists, youth organizations, NGOs etc.) should help to support them in effectively communicating on climate issues towards young target groups by providing them with tailored tools.

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[1] the target group was defined in accordance with the Austrian Youth strategy ranging from 14 to 24 years

4. Content and results

An inter- and transdisciplinary research approach including both quantitative and qualitative methods was chosen to address the research questions (see Fig. 2)
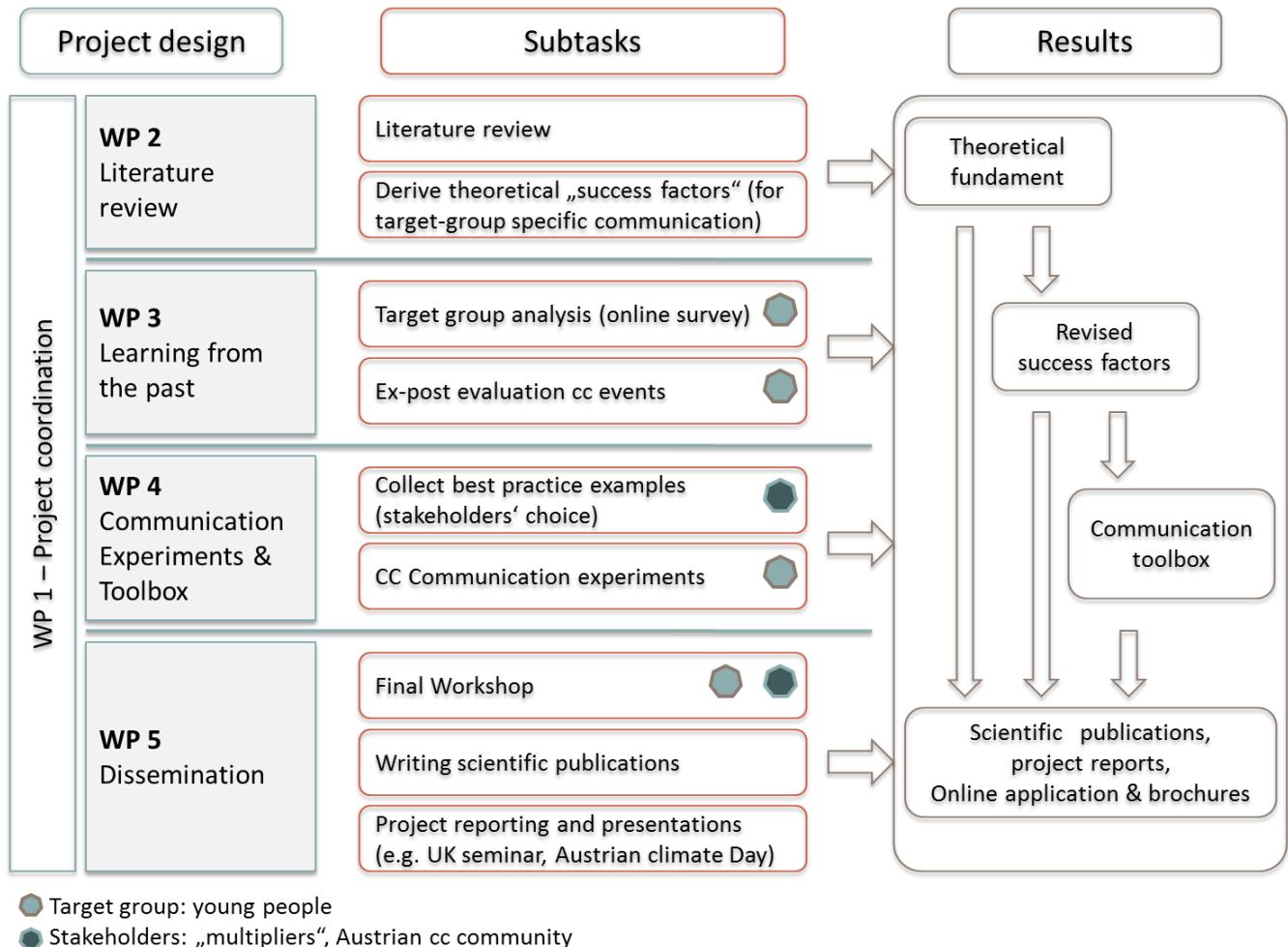

Figure 2: overview of work packages (WPs), tasks and dissemination products

4.1. Project coordination (WP1)

Objectives
Putting high effort in consistent and clear communication seems essential when facing the challenge of a bi-lingual, multi-stakeholder project setting. Hence the project coordination on the one hand aimed to provide regular opportunities for internal discussion and exchange among the consortium to ensure agreement regarding methodologies as well as in-depth clearing of questions coming up with project progress.
On the other hand project coordination focused on maintaining a stakeholder dialog that ensured that project products were developed in a participatory manner according to stakeholders' needs and preferences.

The project products oriented towards stakeholders (online platform & toolbox) were co-developed with selected stakeholders and tested with about 60 Austrian stakeholders and multipliers in the setting of the final project workshop. The testing showed, that the do-it-yourself toolbox provides valuable support for defining aims and for identifying young sub-target groups. The usability of the toolbox was improved by integrating stakeholder feedback into the final version.

4.2. Literature review (WP2)

Objectives
The objective of the extended literature review was to screen existing knowledge on young people's **interest** and **concern** regarding climate issues but also on potential barriers and drivers for **climate engagement.** The results should outline a draft list of success factors for young climate communication as theoretical fundament for the empirical research.

Results of the literature review

Climate change - concern, solvability and responsibilities

The urgency people attach to climate change is often linked to a psychological phenomenon referred to as "psychological distance", where possible impacts of climate change are projected to far away places in a far away future (Swim et al. 2009). Psychological distancing is also described as part of a psychological coping process, whereby positive emotions are marshalled in order to provide strength when difficulties or even serious threats occur (Folkman & Moskowitz 2010, Ojala 2012).

However, the results of several European youth studies indicated that concern about climate change is rather high among young Europeans. The findings of a representative study from Austria and Germany[2] suggested that more that 70 % of young Austrians and 75 % of young Germans consider climate change a very or fairly big problem (Bertelsmann Study 2009). A comparable swiss study[3] resulted in 79 % of young Swiss displaying high levels of problem awareness (Stiftung Umweltbildung Schweiz 2011).

With respect to the solvability of the problem these studies unfolded a picture of young people perceiving climate change as a serious but solvable problem (Bertelsmann Stiftung 2009, Stiftung Umweltbildung Schweiz 2011, Schneekloth & Albert 2011[4], Eurobarometer 2008). For instance, in the Shell Youth Study (2010) the statement "It is already too late, nothing can be done against climate change" gained merely 14 % approval whereas 69 % of respondents opposed it (Schneekloth & Albert 2011).
Given that more than 80 % of young respondents of the Shell study shared the view that climate change is directly induced by humans, climate scepticism seems to be of minor relevance for this target group (Schneekloth & Albert 2011). This assumption is further supported by survey results regarding the responsibility for tackling climate change. The Allianz study[5] found that 81 % of young respondents considered themselves responsible to tackle climate change. Besides this significant awareness of personal contributions, they also considerably attributed responsibility to industry (86 %), traffic (80 %), the economy (79 %) and politicians (68 %) (Littich 2012).

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[2] The representative **Bertelsmann Study** (2009) covers the awareness of problems and sense of solutions with regards to ecological and social sustainability issues. A total of 1007 youngsters between 14 and 18 years were interviewed via phone (506 respondents from Austria, 501 respondents from Germany)

[3] The **SUB Study** (2011) built on the Bertelsmann Study (2009) relying on the same method and questionnaire. The study covers a total of 508 adolescents between 14 and 18 years that were interviewed via phone.

[4] The representative **Shell Youth Study** (2010) was conducted in Germany. A total of 2604 adolescents between 12 and 25 years were interviewed on the phone. In its 16th edition it covers the topics of climate change and globalisation for the first time.

[5] The **Allianz Study** (2011) titled "Climate change awareness of the young" covers interest levels, attitudes, feelings, sense of responsibility and individual initiative and comprises 500 young people between 14 and 24 years.

Climate engagement

Several studies suggest, that although young people state a rather high willingness to contribute to climate change mitigation, behaviour changes are often restricted to rather convenient and easy to adopt alternatives with limited impact regarding carbon emission savings (e.g. separating waste or switching off lights), whereas high impact mitigation measures, e.g. avoiding long-distance traveling, purchasing green electricity or seasonal, organic food, were only adopted by a minority of young people (Schneekloth & Albert 2011, Kromer & Hartwagner 2005, Littich 2012).

The findings of this work package were summarized in a review article (Corner et al. 2015) and fed into a draft list of youth-specific „success factors", which were further tested and revised by the results of the evaluation of climate communication formats (WP3) and the communication experiments (WP4).

4.3.   Online survey (WP3-1)

Objectives
This work package aimed to provide a better understanding for the target group's communication preferences, attitudes and everyday life concerns that might be conflicting with climate change adaptation and mitigation. These issues were analyzed using a quantitative online survey.

Results
The results of the online survey showed that around 40 % of the young respondents do not feel well informed about climate change. However the stated carbon literacy increased with age and higher levels of education. 14 % of the respondents proofed to be sceptic that humans are responsible for climate change.

Sources of information
The young people were asked which source of information they prefer to learn more about climate change (see Fig.3). Around one quarter prefers TV, closely followed by YouTube. While the online survey shows, that young people mostly use apps to get informed, only 5 %of them name this format as their first preference for information about climate change. Therefore in the opinion of the adolescences it is foremost video material which should be used in climate communication. Print media was ranked lower whereby magazines were rated more positive than books (favourite climate information source of only 4 %).
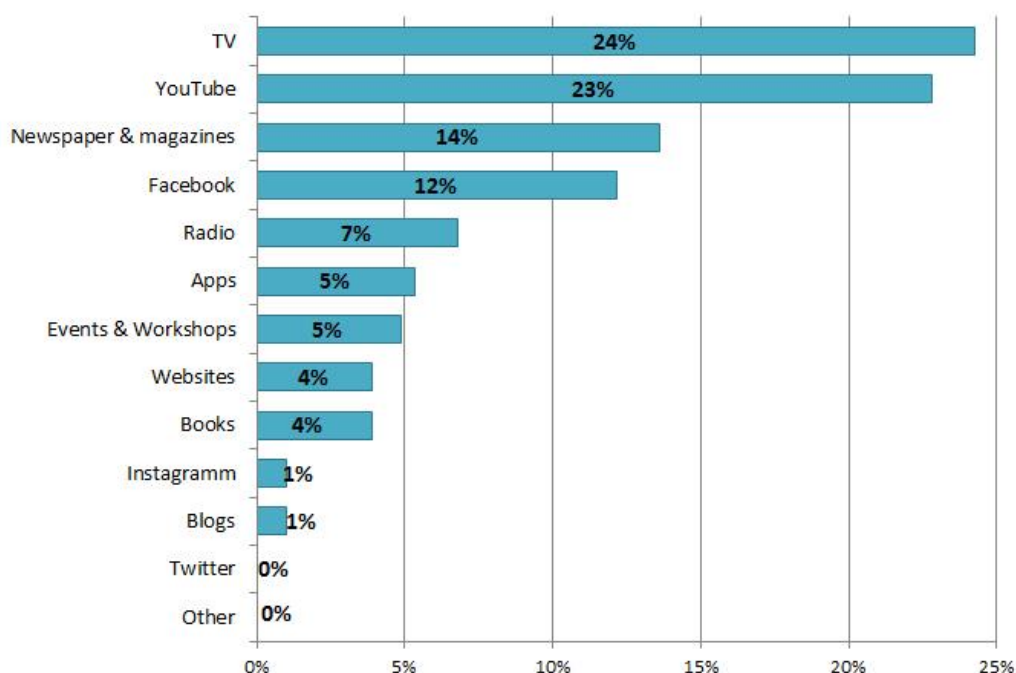
Figure 3: stated preferences for climate communication formats (n=206)

Framing the information

As the results of the literature review show, it is important to connect climate information to special interests of the target group. The young respondents' main interests are foremost the topics "love, friendship", "music" as well as "education, jobs" (Fig. 4). "Domestic policy" was of least interest for them. This means that connecting climate communication with relationship aspects or music can be useful to also reach those young people, who would not be interested in straightforward communication of climate topics.
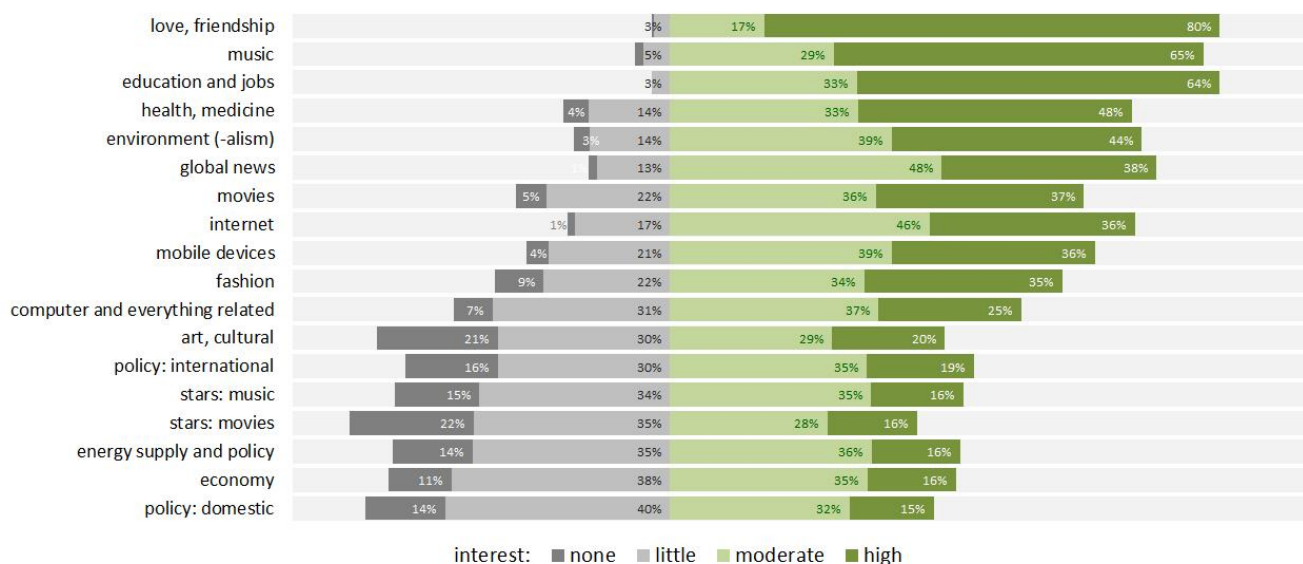

Figure 4: stated interests of young respondents (n=276 to 278)

Climate friendly behaviour and public engagement

Asked for their daily routines, the young respondents showed a tendency for cheap and less time-consuming climate protection measures. Around three quarters of them state that they sort their waste for recycling and the same portion that they avoid stand-by. Less adolescents reduce traveling by plane (one third) or eating meat (7 %).

Regarding public engagement to tackle climate change, about 50 % of the respondents stated to actively support climate campaigns and policies e.g. by signing petitions or donating money to NGOs.

Typology of the young respondents

Numerous studies prove that tailored communication strategies are more frequently noticed, understood, remembered and considered credible than generalized information (Hine et al. 2014). Therefore it seemed reasonable to not only describe the characteristics of young people as a whole but also identify different types of adolescences. To do so all of the respondents were clustered on the basis of their value sets and interests and afterwards described along their main characteristics (age, feeling informed about climate change, engagement for climate protection, user frequency of different sources of information, preferred information source for information on climate change).

Four different groups of young people could be identified (Fig. 5):
- actively engaged & intellectual
- cosmopolitan & interested in various topics
- consumption oriented & moderate environmental awareness
- materialistic & little interested in the environment

	Values/Interests	age	Feeling informed*	engagement **	Use of information sources	Prefered information source: cc
Actively engaged & intellectual	**Values**: climate and environmental protection, social justice **Interests**: politics, environmental protection, art, contempory issues **Not so interested in**: fashion, movie stars, cell phones, musicians	14-17: 18% 18-20: 28% 21-24: 46%	Ø 1,7	Ø 1,7	✔ Books, events ✗ Blogs, TV, Instagram	books
Cosmopolitan & interested in various topics	**Values**: climate and environmental protection, social justice **Interests**: interested in various topics	14-17: 22% 18-20: 24% 21-24: 32%	Ø 1,9	Ø 1,3	✔ All formats	books
Consumption oriented & moderate environmental awareness	**Values**: climate and environmental protection, social justice **Interests**: fashion, movies, cell phones, computer **Not so interested in**: economy, politics, musicians	14-17: 39% 18-20: 29% 21-24: 18%	Ø 2,5	Ø 0,7	✔ TV	TV
Materialistic & little interested in the environment	**Values**: authority, wealth **Interests**: internet, cell phones, fashion, musicians, cinema/movies **Not so interested in**: environmental protection, politics, economy, art, health	14-17: 21% 18-20: 20% 21-24: 4%	Ø 2,8	Ø 0,5	✔ YouTube ✗ books, events	YouTube

*Figure 5: Typology of the young respondents (n=265);   *feeling informed (average): 1= totally agree/4=totally disagree; **engagement (average): 7 activities queried*

4.4. Ex-post evaluation of events issued around climate topics (WP3-2)

Objectives

Three event-like communication formats addressing climate change issues[6] towards young audiences were evaluated from an ex-post perspective in order to investigate learning effects and possible behavioral impacts (e.g. recalled messages, images, emotions and actions that were triggered by the format).

Results

Description of the sample - climate knowledge and climate aware behavior

The interviews with young event participants (19 to 24 years) were kicked off with questions on how well interviewees felt informed about climate issues before the events and on fields where they had adopted climate aware behavior to daily life routines before the event (Tab.1).

Table 1: Sample overview & participants' climate knowledge and fields of action

Event name		Interview Nr.	Sex	Stated climate aware lifestyle	Stated climate knowledge	Fields of climate aware behaviour					
						Food	Clothes	Mobility	Recycling	Energy	Make-up
1	Earthtalks (annual evening event)	1-1	f	+++	+++	x	x		x		
		1-2	f	++	++	x		x			
		1-3	f	++	+	x		x	x		
		1-4	m	+++	+++	x			x		
2	Encourage sustainability (event series / lecture)	2-1	f	+++	+++	x	x	x	x		x
		2-2	f	+++	+++	x	x	x			
		2-3	f	+++	+++	x	x	x			
		2-4	f	+++	+++	x	x	x	x		
3	UN-Climate reporter (event series / social simulation)	3-1	f	+++	+++			x			
		3-2	f	+++	+++	x		x	x		
		3-3	m	++	+++			x	x	x	
		3-4	f	+++	+++	x		x	x	x	
		3-5	m	+++	+++	x		x			
		3-6	f	+++	+++						

The results of this pre-analytical step suggest that young people participating in climate events feel rather well informed about climate issues even before participating in the event. Compared 40 % of young people participating in the online survey (WP3-1) that stated to feel not well informed about climate change (see chapter 4.3), almost all interviewees of the ex-post analysis felt very well informed about climate change. In compliance with that, all participants agreed to have adopted climate aware behavior as part of their lifestyle before participating in the event.

> *"There are not many fields where I do not at least try behave climate aware" (Nr.3-5)*

This was consistently evident for the two events series that had been tested (Nr. 2 and 3), which also required a relatively high commitment timewise from the participants, respectively. However, also the participants of the singular event (Nr.1) displayed relatively high levels of interest and

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engagement. Only two participants put their knowledge on climate change and their personal contribution to tackle it somewhat into perspective.

This observation is further backed up by the fact, that also more inconvenient behavior changes associated with a high potential to cut down emissions where frequently adopted, e.g. avoiding flights, living without a car or not eating meat.

> *"I do second hand shopping, go to swap parties. And food is important to me. I am member of a foodcoop. This is really important to me to buy regional and seasonal."(Nr.1-1)*

> *"I'm a vegetarian and I only buy organic food although I'm a poor student. Also I try to fly as little as possible." (Nr. 1-2)*

> *„When traveling to my home town in Germany I take the train. Flying is no longer an option for me. Mobility is an important issue to me. Our family does not have a car."(Nr.2-4)*

> *"My parents don't have a car. Neither do I. I don't even have a driving licence. I also eat little meat and try to separate waste." (Nr. 3-2)*

Impact of the events: inspiration, system thinking skills and peer-to-peer learning

Earthtalks

The interviews revealed that inspiration and a feeling of empowerment were the main impacts triggered by the one-off intervention **'Earthtalks'** (Nr.1). For some participants inspiration mainly routed in the presented content, e.g. strong, novel claims and messages (e.g. a radically novel angle to look at urban mobility) that were perceived as inspiring and eyes-opening.

> *"He (the speaker) brought up some issues that I haven't thought of before." (Nr. 1-2)*

> *"I have not been as much aware of some the issues he (the speaker) raised. e.g. that streets counteract social cohesion" (Nr.1-4)*

Others felt particularly inspired by the personalities and the stage presence of the four keynote speakers. As the talks ranged from rather scientific to rather emotional presentations, interviewees expressed diverging opinions on likes and dislikes. Some respondents resonated strongly with the emotional appeals some speakers raised, others felt slightly uncomfortable when confronted with a too strong emphasis on emotions and personal insights at the expense of hard facts.

> *"One keynote speech I kept particularly in mind because she talked very concretely about her own personal experiences. This was very inspiring for me." (Nr.1-2)*

> *"Two of the keynote speakers, the biologist and the cook, really impressed me a lot." (Nr.1-3)*

The interviewees expressed that events like this stimulate the continuous *reflection of daily life routines.* However, the interviewees could not name any specific behaviour changes they adopted due to the event.

> *"It is general about progressively re-issuing one's lifestyle. Every time I get an input like this, I weigh it up and consider what I could adopt. But a lot of it is happening unconscious. I like events like this, but real changes are hardly ever directly induced by them." (Nr.1-2)*

Encourage sustainability

The impact analysis of the event series 'Encourage sustainability' disclosed that peer-to-peer inspiration through close interaction with other event participants turned out to bare a high potential for stimulating climate aware behaviour. Particularly the internal event units, where students discussed and presented do-it-yourself behavioural experiments to others were perceived as main source of inspiration.

> *"I like the results of the do-it-yourself student projects. I was impressed by the ideas other students came up with." (Nr.2-3)*

> *"It is really interesting to learn so much from each other. It was fun being with the other students. One student became a real friend of mine." (Nr.2-1)*

However, some of the public units of the event consisting of talks and discussions of invited guest speakers were perceived as disengaging and too negative. The interviewees claimed that the ratio

problem / solution needs to be thoroughly considered in climate communication and recommended to put a strong emphasis on solutions.

> *"I like the concept of very different guest lecturers being part of the lecture. […] But there were too many pessimists among the invited speakers for a lecture that is called 'encourage sustainability'."* (Nr.2-1)

> *"Sometimes after the guest lectures I did not think 'I am on the right way' but rather 'there is no use in doing what I do'. That was not motivating. I already learnt enough about negative issues, now I want to engage with these issues in a positive way. […] I would have liked more positive examples of what works." (Nr. 2-2)*

Overall the participants stated that the rather wide scope of the event has contributed to increase their system thinking capacities.

> *"It is nice to get the chance to reflect what living sustainably means, what you could adopt and what extrinsic and intrinsic motivation has to do with it. […] I chose it reflect about myself and about my field of study." (Nr. 2-4)*

Similar to the first event, they also felt a strong motivation to re-think their lifestyles, although there had been no significant changes adopted in the weeks after the event.

> *"I wanted to download the 100-points-app that was presented and try the carbon footprint calculator, but I did not do it yet." (Nr.2-1)*
> *"I downloaded the toxfox-app one student presented. […] I feel more motivated to go to events and talks." (Nr.2-3)*

UN Climate reporters

The event series UN Climate reporter, where young people were guided in several interventions to prepare and finally perform the role of national delegates in a simulation of the climate negotiations, put participants in the most active role of the three events investigated.

The interviewees stated that the typecasted change of perspective was completely novel and enlightening to them. Many stated that the realistic setting of the simulation evoked strong and varying emotional responses (e.g. excitement, impatience, frustration). Negative emotions were expressed in context with other young participants that enthusiastically took over the role of delegates impeding the negotiations by all means. However, participants felt these negative emotions had been outweighed by the feelings of enjoyment and fun given through the close interaction and exchange with peers.

> *"I was overwhelmed by the group dynamics. We really became friends. Everybody was so passionate."* (Nr.3-1)

> *„My delegation partner impressed me a lot. He participates in an exciting master programme…I now consider to choose that, too." (Nr.3-6)*

> *"It was a mixed crowd you would never meet within your studies. The participants are motivated and interested – interesting people." (Nr.3-3)*

Again, participants were inspired by the skills, knowledge and persuasive power of their peers, but also by policy makers (Austrian delegates) that supported them in preparing their roles. The interviewees appreciated that these policy makers opened up the room for a personal dialog with the young participants and considered them trustworthy and engaged.

Besides inspiration and social learning effects, participants also benefited from an increase in climate policy knowledge through the event and expressed to feel much more confident now to discuss international climate policy issues. Similar to the other events, no significant behavioural impacts were detected six weeks after the event.

4.5. Good-practice climate communication formats (WP4-1)

Objectives

Besides identifying youth specific success factors, a good-practice collection of youth specific climate communication formats (e.g. apps, games, videos, and books) should help to practically illustrate the purpose and possible ways of implementing these success factors.

This collection should include both stakeholders' selection of good-practice formats and the results of a systematic review of communication formats based on success factors as criteria for selection.

Results

As a result of the stakeholder circular about 20 stakeholders nominated up to 3 contributions for the good-practice selection. The reasoning of their choices was integrated in the list of youth-specific success factors (see Tab.2 and Annex). The review resulted in a database of links to about 250 good-practice formats (online available under http://autreach.boku.ac.at/good-practice/).

4.6. Communication Experiments (WP4-2)

Objectives

The key objectives of these 'communication experiments' are to empirically reissue youth-specific success factors for communicating climate change issues by testing communication formats and to identify hot spots for pinpointing climate relevant contents towards young people. Based on the findings of these experiments, a 'communication toolbox' was developed together with young people in a one-day workshop.

Results

Through the workshops it became apparent that a differentiated view is utmost important when analysing potential success factors and barriers in climate communication. The following analysis tries to include the similarities and divergences of perspectives captured with these workshops.

Print formats

Interestingly, the focus groups showed that when given specific print media dealing with climate topics, young people tended to talk more positive about this kind of format, than when asked about it in general, as in the online survey. The winning formula for print media tested in the workshops seems to be modern design as well as many illustrations. Asked if they would prefer school books to be illustrated in a similar manner than the books tested a focus group responded:

> *„Yes, that would be cool."*
> *„That would be much more exciting."*

Also it was important for the young people that the print media was easy to understand. Positive narrations used were for example "*clearly summarized*", "*appealing*", "*funny and innovative*" as well as "*has something special*". Furthermore, print media dealing with the everyday life of the adolescents was favored. However, none of the young people joining the focus groups was willing to pay money for a book dealing with climate topics, even in cases where the print media provided practical tips or vouchers.

Videos

Information delivered through videos was favored in the workshops. Furthermore relevant documentaries the youngsters have already seen during school lessons were mentioned positively (e.g. "Blue Ocean" or "An Inconvenient Truth"). It was also observed, that videos are a very good source for evoking emotions among adolescences. However, as with print media, imparting sound and novel knowledge was mentioned as important factor for appealing videos as well as the use of professional design. Messages delivered in videos were taken less serious when the adolescents did not like the design of the video. When it comes to switching to climate-conscious behavior, some young people did not consider it sufficient to show a video from time to time, as they perceive the impact to be somewhat limited.

> *"While watching a video you think 'that is really bad' but even 5 minutes later you do not think of it any more."*

Apps

The rating of climate-apps varied considerably within and between focus groups. Generally, many of the young people shared the opinion that climate-apps are well suited to reach out to the target group of young people, as the usage of many apps is part of their everyday life: "*I always have my cellphone at hand - therefore I like apps*" or "*I could use the app on my way to school to get informed*". Also the possibilities of interacting with other young people via the tested climate-apps were appreciated.

Nevertheless, numerous focus groups came to the conclusion that using the tested climate-apps would be too time consuming in the long run.

> "*You have to deal with it intensively and I don't have the time to do this within my daily routine.*"

> "*How long would I really be willing to use this app?*"

Peer pressure was also mentioned as potential barrier for using such apps:

> "*If I know that none of my friends will be engaged in this app, than I won't use it either*"

Online games

As with apps, young people did not like climate related online games that needed to be played on a regular basis. Furthermore, the young focus groups started comparing this kind of games with the more expensive ones they use to play. It was shown, that hardly anybody of the focus groups could imagine playing one of the tested climate games during their leisure time.

> "*I would never do this in my leisure time*"

> "*It is not exciting enough to spend my [leisure] time with it*"

Furthermore the focus groups came to the conclusion, that playing climate related online games would not affect their behavior: "*…you don't think about these issues being also important in real life*". However, the idea of getting information in a playful manner was liked by the young people.

Success factors emphasized by adolescents

Taken together most of the success factors derived from scientific literature were confirmed by the results of the workshops. The success factors depicted in Figure 6 were mentioned most often within the focus group discussions (min. 6 mentions).
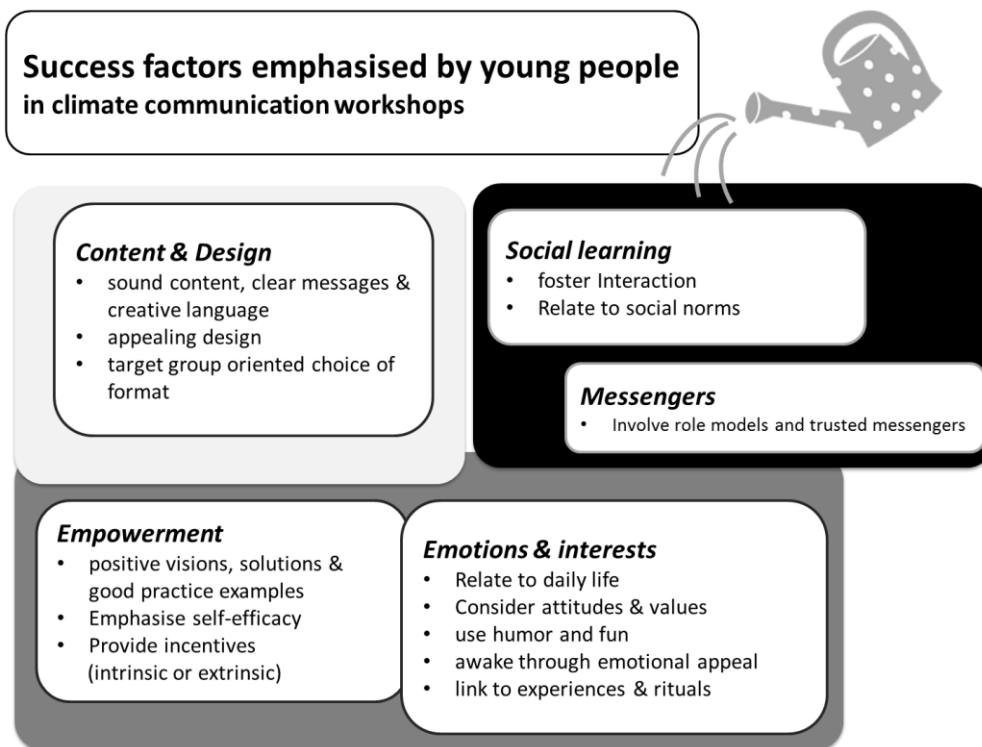
Figure 6: Success factors emphasised in communication workshops (after Chiari et al. 2016)

Rather often young people stressed that formats messages and contents need to relate to their daily life concerns: *"The topic was well chosen – very much true-to-life".*

Design seems to be another critical issue to be considered. Young people claimed for choosing an authentic and cool design that reflects messages and content (*"that looks authentic because of the recycling paper"*) and criticised designs include "*too childish*" icons and imagery.

Opportunities to interact virtually or physically with other like-minded young people were highly appreciated by the young testers (*"it is good to be inspired by other peers" or "one can benefit from postings of other people and learn about how to save energy"*).

Good-practice examples relating to practices of young people's daily life proved to be an important source of inspiration. One student stated: "*often you don't know where to start or what to do – this format provides you with concrete suggestions."*

Barriers emphasized by adolescents

Particularly school students admitted, that although they like the appeal of many of the presented formats, they did not consider them interesting or "cool" enough to engage with in an out of school context. Social pressure seems to be a relevant barrier in this context:

> *"I would not recommend this format to my friends."*
> *"My friends would laugh at me, if I confronted them with this."*
> *"You don't chat with friends about how to stay cool in a heatwave."*

According to the testers, it is somewhat delicate to get content and messages right. On the one hand „*too much text*" was a barrier often mentioned by tester that claimed for clear and understandable facts and messages. But on the other had they wanted to be confronted with stunning, novel facts and dislike formats they felt under challenged by.

Regarding rather time-consuming formats that require frequent usage e.g. online games and apps, one adolescent stated: *"this needs intensive engagement and you do not have the time in everyday life to do so."*

Whereas young people generally appreciated concrete climate mitigation measures that touched upon their scope of action and daily life decisions, they criticized suggestions that did not seem realistic or in reach for them. When testing a carbon footprint tool a student complained: „*Even if*

you go down to the most moderate lifestyle, you cannot reach the target (of consuming 'only' one planet)."

4.7.   Dissemination

A website was developed as a platform to disseminate these projects results (http://autreach.boku.ac.at/):
1) background **information & links** to project **reports** and **publications**
2) a **good practice-collection** of **climate communication formats**
3) a do-it-yourself **toolbox** to support the **development of new formats**

Besides disseminating the results in the scientific world with publications and contributions at international conferences, the project aimed to actively stimulate stakeholders und multipliers. Therefore the results of the cluster analysis (WP3-1), the interview series (WP3-2) and workshops (WP4) were translated into an interactive online guideline tool (see Annex, 'do-it-yourself tool') that supports the conceptualisation of novel, tailored climate communication formats. In a first step users are asked to choose whether the prior aim of the format to be developed is A) to inform, B) to lead to attitudinal changes or C) to induce specific behavioural responses. In a second step they are guided through selecting prioritised sub-target group(s) of adolescents, in order to clarify and outline those groups' values, interests and preferences for media. Based on these decisions users are then provided with a suggestion of format types (and links to good-practice formats) that are in line with their prior selection of aims and the potential sub-target groups' preferences.

The project results were further shared in a final stakeholder workshop (Vienna Impact Hub, 08.03.2016) that was co-facilitated by young people and aimed to help participants reflect upon and increase their climate communication skills. More than 60 stakeholders participated in the workshop (NGO's, teachers, young people, policy makers, scientists etc.). Additionally to keynote inputs, 12 organisations presented youth-oriented climate communication formats in a market place setting. Finally the draft toolbox (developed in WP4) was presented and discussed in small group discussions. The stakeholders' feedback was implemented in the latest version of the toolbox.

5 Synthesis, conclusions and recommendations

The integration of key findings across workpackages resulted in several project products that allow for a better understanding of youth-specific barriers and drivers in climate communication, of preferences regarding climate communication formats as well as potential shortcomings and plus points of existing formats according to young people's point of view.

Out of this integration process a checklist of 25 youth specific success factors emerged (Table 2). A more detailed overview on each workpackage's contribution to that list is incorporated in the Annex.

Table 2: Synthesis of youth-specific success factors for climate communication

Format design	target group orientation
	avoid fear inducing messages
	encourage & use positive visions
	provide clear messages
	include novel & sound information
	tell stories
	consider language issues
	consider design
	foster continous involvement
Social learning	relate to social norms
	include interaction with peers
Role models & good practice	involve role models & trusted persons
	provide solutions & good-practice examples
	consider authenticity & credibility
Empowerment	address self-efficacy
	relate to everyday life
	make it easy to engage
	provide opportunities for self-experiments
	emphasise global efforts
	provide incentives (intrinsic & extrinsic)
Emotion & values	use humor & fun
	trigger emotions
	relate to values
	consider rituals & experience
Evaluation	test & evaluate formats with target group

Looking at the overall synthesis of quantitative and qualitative results, three issues emerged, that should be primarily addressed in order to engage young people more deeply in climate issues and climate aware behaviour:

1) The 'un-coolness' of climate change

Many young people in Austria share the view that the practice of problem- and catastrophe-focused climate communication, combined with moral appeals and claims for bans and abstinence led to a strong negative connotation of climate issues. Further young people strongly associate climate change issues to formal educational contexts and put them on a level with other school subject materials they would not engage with in their leisure time. What is more, peer pressure is a strong determinant influencing the curiosity and willingness of many young people to experiment with and engage in climate aware behaviour.

Therefore it seems crucial to counter this rather "uncool" image of climate issues among young people with climate communication formats that are thoroughly and professionally co-designed with young people, reaching for the standard of other (media and event) formats popular in the target group (O'Neill & Nicholson-Cole 2009, Moser 2010). As fun, humour and social interaction with peers are utmost relevant to young people's daily lives, it might be promising to consider these issues when putting new climate communication formats into practice. However, this should not foil the soundness and reliability of the format's content (Moser 2010).

2) New empowering frames for climate issues

Climate change makes a lot of young people feel rather helpless in their role as 'small' individuals. This stresses necessity to reframe climate communication towards young people in a more solution-oriented manner that relates to concrete, impactful contributions they can pick up on. Relating to young people's predominant values and interests seem essential in order to identify and create more responsibility and ownership for climate issues (Evans 2013, Corner et al. 2014a). Further, empowering and promoting role models across social classes and groups (e.g. peers, trusted public persons or celebrities) might help to catalyse the transformation of climate aware lifestyles as well as increase their social acceptance (Boykoff and Goodman 2009, Moser 2010).

3) Need for diversified climate communication

The project results suggest that carbon literacy and climate engagement varies significantly within the rather heterogeneous target group of young people. Hence, 'one-size-fits-all' approaches for climate communication might not work for many of the subgroups within this group. Further the diversity of values-sets and interests that constitute possible entrance points for climate communication call for diversified strategies of framing climate issues.

Further need for research and (policy) action

The projects outcomes illuminated a variety of issues in the context of young people's engagement with climate change and should provide stakeholders with some sound guidance on what to consider when designing new climate communication formats. However it also revealed some research gaps.

One of them regards the issue of peer pressure. It seems questionable whether efforts that aim to stimulate individual climate action are appropriate for this sociable target group of young people, whose lifestyles are so closely interconnected to those of their peers.

Further strong scientific evidence that would allow a better understanding of the role of social norms, values and appropriate entrance across different social classes within the target group of young people is still lacking. This would be particularly important to better tailor climate communication towards target groups with lower levels of carbon literacy and climate engagement.

C)   Project details

6 Methodology

WP2 Literature Review
At the beginning a literature review was conducted to assess the state of knowledge regarding climate literacy and climate engagement among young people. International scientific literature and German Youth studies as well as other relevant "grey" literature were reviewed. Detailed description of the methodology and the results can be found in Corner et al. 2015. Simultaneously publications on climate communication were reviewed to concretise the methodological approach of the empirical work within the other WPs.

WP3-1 Target Group Analysis
Based on the results of the literature review a quantitative online survey among around 300 young Austrians (age from 14 to 24 years) was conducted. The survey covered carbon literacy, information patterns and preferred channels, values and attitudes towards climate change as well as climate engagement (see 3).

Table 3: Overview of variables and main questions of the online survey

Variables	Main questions
Carbon literacy	What do young people know about climate change, climate protection and climate change adaptation?
Values and attitudes towards climate change	What are the youth's key values and how important are different climate topics (like sustainable food, mobility and energy) for them?
Climate engagement	Which climate protection and climate change adaptation measures do young people take/would they like to take?
Perceived responsibility	Who has to bear responsibility for climate change in the eyes of adolescences?
Communication formats	Which sources of information do young people use and which of those do they prefer for climate communication?

The target group is very heterogeneous with different educational background, a wide range of interests and diverse engagement for climate protection. Aiming to reach out to all of them, the online survey was spread using the following contact points:
- Austrian youth association
- Universities & Universities of applied science
- Schools
- „Klimabündnis"
- „Sozionexus"
- „Naturfreunde"
- „Jugend-Umwelt-Plattform" (JUMP)
- Protestant youth organisation

All respondents took part in a price draw of three DVDs. As the data was collected using a convenience sample, it cannot be interpreted as representative for the whole youth of Austria. The online survey covered mainly closed questions and was programmed with the online application „limesurvey". The data was analyzed using the statistic software "SPSS" (Wittenberg/Cramer 2003) and outlined descriptively using frequency analysis and cross tabs. Correlations were tested using chi2- and Spearman-tests (confidence interval: 95 percent). To group the young respondents a two-stage cluster analysis was carried out (Hatzinger & Nagel 2009).

WP 3-2 Ex-post Evaluation

Selected event-like communication formats addressing climate change issues towards a young audience (lectures, workshops, events) were evaluated from an ex-post perspective (see Table 4) using qualitative face to face interviews in order to investigate learning effects, possible behavioural impacts (e.g. recalled messages, images, emotions and actions that were triggered by the format) and possible spillover effects.

The following research questions were addressed with this survey:

- Which psychological, social and other factors influence the positive or negative reception of selected events?
- In which way did the event affect young people's attitudes as well as their daily life behaviour?

Table 4: Events selected for ex-post evaluation

Event	1 Earthtalks	2 Encourage sustainability	3 UN-Climate Reporter
Type	One-off event	Lecture (16 units +incl. guest speakers)	Lecture (preparation unit, 1 day pre-test, 1 day social simulation & dissemination units)
Host	Neongreen Network	gWN BOKU / Environ. Agency Austria	JUMP / University Vienna
No. of participants	800	40	30

To identify relevant questions for the interview series, a literature review was conducted to better understand barriers and drivers relevant for climate aware behavior. Those depicted in Figure 7 were considered most relevant for the target group and were reflected with the questions raised in the face to face interviews with young event participants (Whitmarsh 2009, Swim 2009, Blake 1999, Chawla 1998, Hines et al. 1986; Kollmuss & Agyeman 2010).
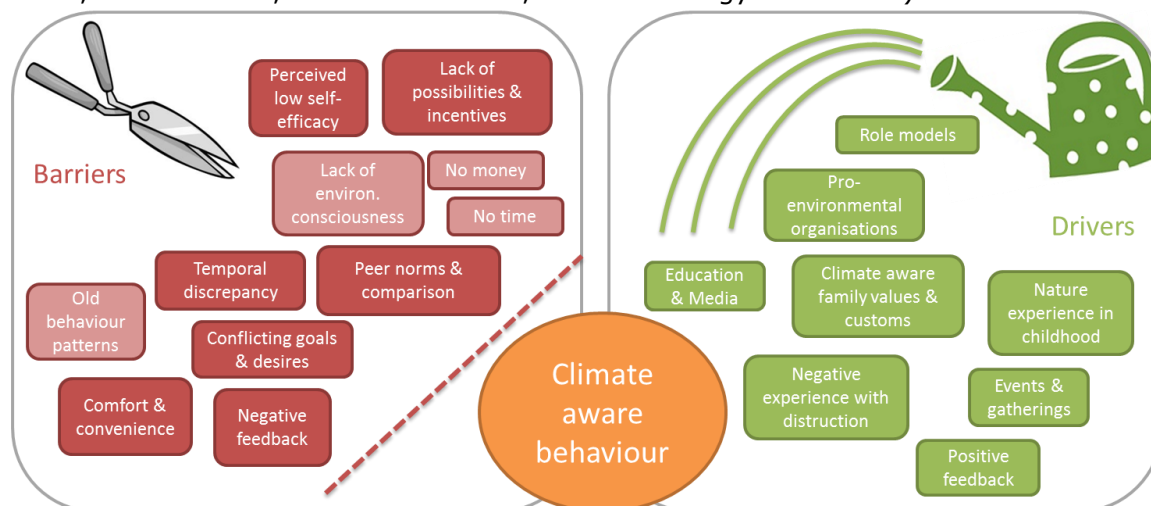

Figure 7: Barriers and drivers for climate aware behaviour amongst young people (dark red considered most relevant for this target group)

Face to face Interviews

Firstly, the organizers of the three events were interviewed to gain insights into their motivation, aims and possible mission of the events (e.g. inform, awake, activate) as well as further reasons underlying the events' conception and choreography. Then, young participants of the events were interviewed 4-6 weeks after the events. 14 interviewees aged 19 to 24 were recruited during the events (11 female, 3 male) (see Table 6).

The interviews were tape recorded and transcribed. A qualitative content analysis using deductive coding and the qualitative data analysis software AtlasTi 7 was conducted to derive awareness and behavioural impacts on the interviewees induced by the events (Mayring, 2007).

WP4-1 Best Practice Formats

At the same time a stakeholder survey was conducted to gather success criteria and good-practice examples for climate communication formats. Around 60 stakeholders (NGOs, teachers, youth organisations, scientists, policy makers etc.) were invited via e-mail to bring in best-practice examples for target-group oriented climate change communication as well as reasons for their choices.

WP4-2 Communication Experiments

The effects of these selected formats were tested and evaluated together with representatives of the target group to find out more about youth specific communication barriers and drivers. Overall 8 workshops with around 140 pupils and students took place. Four different schools from 3 federal states and 2 universities classes participated in the experiments (see Table 5).

Table 5: Overview - Participants of Communication Experiments

WS-Nr.	School/University	Date	Number of participants	Age
WS 1	BRG Bludenz	20.11.2015	8	17-18
WS 2	BOKU students	18.12.2015	8	20-24
WS 3	HAK Ungargasse	28.01.2015	25	14-15
WS 4	HAK Ungargasse	29.01.2015	29	17-18
WS 5	BRG Billrothstraße	10.02.2015	22	17-18
WS 6	BRG Billrothstraße	13.02.2015	12	17-18
WS 7	BOKU students	07.05.2015	13	20-24
WS 8	BH Linz	02.07.2015	25	17-18

As warm up, the workshops started with a climate version of "who wants to be a millionaire". Afterwards focus groups (4-10 persons each) were formed. The (overall 22) small groups tested and discussed 3 different formats each. In a first step the formats were presented to the groups by the AUTreach team. The young people were then asked to spontaneously tell which one they liked best and why. Afterwards each of the presented formats was tested by the groups and discussed (using an interview guideline). Subsequently the groups were asked to rank the tested formats again by allocating 5 points. As last step the results of the small groups were discussed in a plenary session. All of the discussions were taped, partly transcribed and analysed to find out fundamental barriers and drivers of climate communication (Meuser & Nagel 2002, Hödl 2009; Halcomb & Davidson 2006). The basis of the analyses formed a code system of 21 influence factors (42 sub-codes) (deduced from the literature, WP2) and the evaluation questions. In total more than 200 key messages of 66 format evaluations (25 different formats, Table 6) were collected.

Table 6: Overview - Evaluated communication formats

Format typ	Format title	Tested in workshops
Print formats	Ein guter Tag hat 100 Punkte (Buch)	WS 1, WS 3 (2 groups); WS 8
	Klimakochbuch	WS 1; WS 3 (2 groups);
	APCC Kurzbericht	WS 2; WS 4 (2 groups);
	Gebrauchsanweisung für den Planeten Erde	WS 2; WS 4 (2 groups);
	Klimasparbuch	WS 5; WS 8
	Wolken, Wind und Wetter	WS 6; WS 8
	Ecotastic	WS 1, WS 3 (2 groups);
Apps	Get-neutral-App	WS 5; WS 6;
	Treeday	WS 7 (2 groups), WS 8
	Die Rechnung	WS 1, WS 3 (2 groups);
Videos	APCC Film	WS 4 (2 groups); WS 2
	Es trifft uns alle	WS 5; WS 8
	CC talk Hitzeinfo + Tipps	WS 5; WS 8
	Partycipation	WS 6; WS 7 (2 groups)
	For the love of	WS 5; WS 8
	Ein guter Tag hat 100 Punkte (Website)	WS 5; WS 8
Websites	Klimaschlau Kampagne	WS 5; WS 7 (2 groups)
	www.aktivwerden.at	WS 2; WS 4 (2 groups);
	Pumpipumpe	WS 1, WS 3 (2 groups);
	Bildungscent-spiel Klimawandel	WS 5; WS 8
Online games	Ökotopia	WS 6; WS 8
	Ecochallenge	WS 2, WS 4 (2 groups);
	Green gang	WS 1, WS 3 (2 groups);
	Konsumaniac	WS 2, WS 4 (2 groups);
	Fußabdruckrechner (kate Umwelt und Entwicklung)	WS 5; WS 6;

7 Work- and time schedule

Task	Subtask	2014								2015												2016			
		M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
WP-1	**PROJECT COORDINATION**																								
Coordination	Sustain team communication & stakeholder process																								
	Install database, gather & organise data	1 project platform installed																							
	Formal consortium meetings (all partners)	2 Kickoff			2.9. Skype meeting							Midterm meeting 3							4 Meeting Vienna						
WP-2	**LITERATURE REVIEW**																								
Literature review	Screen talking climate database & cc talk results																								
	Supplementary literature research			1		Literature review completed																			
Success factors	Summarise results to a list of success factors					2 List of theoretical "success factors" finalised																			
WP-3	**LEARNING FROM THE PAST - EVALUATION**																								
Target group analysis	Pre-test																								
	conduction of quantitative online survey						1 Install online questionnaire																		
	Send out link to mailing lists																								
	Analysis																								
	Report on survey results										2 Report on quantitative survey														
Ex-post evaluation	Short review on ex-post evaluation techniques																								
	Elaborate Questionnaire + pre-test																								
	Lecture "Encourage Sustainability" - interviews																								
	Earthtalks (Neongreen Network) - interviews																								
	UN-Climate reporter (JUMP) - interviews																								
	Transcribe + analyse interviews													3 Report on qual. survey											
WP-4	**COMMUNICATION EXPERIMENTS & TOOLBOX**																								
Best practice formats	Gather stakeholders' best practice examples									continous collection until toolbox completion															
	Additionally screen WP2 results						1 Selection of best practice formats completed																		
	Install dynamic homepage incl. online plattform																								
Communication experiments	Preparing Workshop design																								
	Student Workshops																								
	School Workshops																								
	Document + analyse workshop results																								
Toolbox	1 day workshop with young people (informal setting)															Toolbox Workshop									
	all workshops documented															2 Workshops carried out									
	Development of toolbox																			Final version completed 3					
WP-5	**DISSEMINATION**																								
Reports	Submit interim and final report										1 Interim report submitted										Final report 4				
Presentation	Presenting results at Austrian Climate Day																								
Workshops	Final stakeholder workshop																				Final WS 2				
	Dissemination seminar UK																		Consortium meeting + dissemination seminar UK 3						
Scientific publications	Paper 1								5 Results WP2																
	Paper 2																				Submission 6				

Milestones according to project proposal

Events & Workshops

8 Publications and dissemination activities

<u>Publications</u>

- (In prep) How to engage today's youth with climate change: Insights from a mixed-methods analysis of different communication approaches; Global Environmental Change.

- Chiari, S., Völler, S., Mandl, S. (2016): Wie lassen sich Jugendliche für Klimathemen begeistern? Chancen und Hürden in der Klima-Kommunikation. In: GW Unterricht. 141 (1). S.5-18.Doi:http://www.gw-unterricht.at/pdf/gwu_141_05_18_chiari_voeller_mandl.pdf

- Corner, A., Roberts, O., Chiari, S., Völler, S., Mayrhuber, E., Mandl, S., Monson, K. (2015): How do young people engage with climate change? In: WIREs Climate change. 6. S.523-534.

- Mandl, S., Lessky, F., Chiari, S., Völler, S. (2015): Klimawandel & Kommunikation. Online-Befragung von Jugendlichen, 25 S. doi:http://oin.at/_publikationen/PublikationenNEU/Forschungsberichte/AUTreach_KlimawandelKommunikation.pdf

- ORF Online-Artikel: http://steiermark.orf.at/news/stories/2767131/ (07.04.2016)

<u>Conference contributions</u>

- Chiari, S., Völler, S., Mandl, S., Corner, A. (2016): Wodurch werden Klimabewusstsein und klimafreundliches Verhalten bei jungen Menschen gefördert? Schlussfolgerungen aus dem Forschungsprojekt AUTreach. Österreichischer Klimatag 2016, Graz. (Vortrag)

- Chiari, S., Sylvia, M., Sonja, V., Corner, A. (2015): How to change climate change? Challenges & drivers in communicating climate issues towards young people to foster climate engagement. 11th Conference of youth (COY), 25.-27.11.2015, Paris, France. (Vortrag)

- Mandl, S., Chiari, S., Völler, S. (2015): Are young people different? Climate knowledge, concern & engagement among 14-24 year olds. 11th Conference of youth (COY), 25.-27.11.2015, Paris, France. (Vortrag)

- Chiari, S., Sylvia, M., Sonja, V., Corner, A. (2015): Communicating climate aware behaviour to young people. 11th Conference of youth (COY), 25.-27.11.2015, Paris, France. (Poster)

- Chiari, S., Sylvia, M., Sonja, V., Corner, A. (2015): Stimulating climate aware behavior among young people in Austria. „Our common future under climate change" conference. 07-10.07.2015, Paris, France. (Poster)

- Chiari, S. (2015): Klimafreundliches Verhalten sucht jugendliche User. 1.Nachhaltigkeitstag der Universität für Bodenkultur, 04.05.2015, Wien. (Vortrag)

- Chiari, S., Völler, S., Mandl, S., Corner, A. (2015): Vom Zuschauen zum Anpacken - neue Wege in der Klimakommunikation an Jugendliche. Österreichischer Klimatag 2015, Wien. (Poster)

- Völler, S., Chiari, S., Sylvia, M., Corner, A. (2015): New Paths for Climate Change Communication to the Young. 2nd European Climate Change Adaptation Conference (ECCA), Copenhagen, 12-14.05.2015. (Vortrag)

<u>Project products and activities tailored towards stakeholders</u>

- Project website: http://autreach.boku.ac.at/

- Good-practice collection: http://autreach.boku.ac.at/good-practice/

- Do-it-yourself toolbox: http://autreach.boku.ac.at/toolbox/

- Final stakeholder workshop „Klimawandel trifft Jugend…und umgekehrt?", 08.03.2016, Impact Hub, Vienna

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