

Executive Summary:

Climate change issues are clearly a growing concern for the public today. In recent years, people have received a great deal of information from the media on the causes and consequences of climate change. Phenomena and issues related to the climate change process are complex, and the quantity of information is vast. On the internet, and through other media, citizens and young people have free access to a large variety of in-depth information concerning many aspects of climate change, while they are not often prepared to evaluate such information and to elaborate their own opinions.

Moreover, the involvement of society in climate change issues is fundamental for the development of effective adaptation and mitigation strategies, as well as in the implementation of actions to minimize the impact of climate change. In this realm, there is a need to know which kind of new sustainable lifestyles citizens are willing to adopt in order to reduce the negative impacts of climate change.

Fifteen relevant organizations, among science centres, science museums and aquaria, were engaged by the ACCENT project in a coordination action aimed at rationalizing their two-way communication practices and at strengthening their collaborations with the scientific community on climate change issues.

ACCENT proposed contributing to a global effort, in order to move the campaign for climate change from the "informative" to the "active" phase, through the exchange and dissemination of the best practices, with specific actions that encouraged the involvement of citizens in actions and in dialogue. Through ACCENT, the science centre community itself strengthened the efforts, which its institutions made at the local level in a one-year European Communication Action on climate change issues, the "I Do Campaign", for the dissemination of research results, and established a dialogue among scientists, stakeholders and the public through participatory practices. They capitalized on their skills in a European sustainable web platform that acted as a "collector", as well as a "disseminator", for any organizations dealing with public engagement in science. ACCENT assessed the outcomes from the engagement and the participation of the public, and delivered reliable data on the European citizens' opinions on and perceptions of climate change issues through Local Citizens Debates.

ACCENT took the form of a European participative campaign, where the 15 institutions shared their experience under a common framework, and made interactive and participative communication tools available to a large number of European citizens.

The first 12 months of the project were dedicated to the identification and the sharing of the best practices, which were used during the I Do campaign of communication on climate change in all science centres, museums and aquaria of the consortium in the second year. The I Do campaign was launched during COP 15, in December 2009. The project assessed the outcomes from the engagement and the participation of the public, and delivered reliable data on the European citizens' opinions on and perception of climate change issues following the European recommendations.

The principal results obtained during the Local Citizens Debate were:

- People need a clarification on the effects of climate change, as they expressly ask for. They would need to know to what extent global warming is caused by human activity and to what extent it is a natural phenomenon.
- The panelists, and the citizens in general, ask for more (scientific) information very often; the citizens seem to believe that the more they know, the more they are likely to act.

Considering the number of the science centres, museums and aquaria involved in the project, and the duration of the activities among the members of the public, which was twelve months, ACCENT certainly had a significant impact on the high number of the implemented informal educational practices.

Project Context and Objectives:

The project contributed to the expected impact expressed in the work programme for this action that is aimed at "encouraging cooperation and networking between science events and organisers of public engagement in science" through an integrated process of networking between the local and the European levels. The European Environment Agency in the European environment | State and outlook 2010 Synthesis write. The environmental policy in the European Union and its neighbors has delivered substantial improvements to the state of the environment. However, major environmental challenges remain, which will have significant consequences for Europe if left unaddressed. The prospects for Europe's environment are mixed, but there are opportunities to make the environment more resilient to future risks and changes. These include unparalleled environmental information resources and technologies, ready-to-deploy resource accounting methods and a renewed commitment to the established principles of precaution and prevention, rectifying damage at the source and the polluter pays. These overarching findings are supported by 10 key messages; one of them is: Climate change - The EU has reduced its greenhouse gas emissions, and is on track to meet its Kyoto Protocol commitments. However, global and European cuts in greenhouse gas emissions are far from sufficient to keep average world temperature increase below 2°C. Greater efforts are needed in order to mitigate the effects of climate change and put adaptation measures to increase Europe's resilience in place. Access to reliable up-to-date information on the environment provides a basis for action. To answer such questions, citizens and policymakers require accessible, relevant, credible and legitimate information. According to various polls, people concerned about the state of the environment see that providing more information on environmental trends and pressure is one of the most effective ways of tackling environmental problems. The seeds for future actions exist: the task ahead is to help them take root and flourish.

In this context, the ACCENT project started this process with its I Do campaign in each partner country involving a lot of people of different targets (students, researchers, teachers, policy makers and citizens).

Moreover, the EU has a strong will to encourage sustainable development, and has supported significant research projects where environmental protection goes hand in hand with economic prosperity and social cohesion.

The European Council confirmed the need for an integrated approach to climate change and energy policy. The established binding target is to reduce greenhouse gas emissions by at least 20% by 2020, and a binding 30% target should other industrialized nations, including the US, take similar steps. Citizens are well-informed by the media on these international commitments, but they are less aware of the impact of European research. They also face difficulties in connecting this information to regional and local actions, as well as the consequences affecting their daily lives (quality of air, desertification, water resources, etc). Moreover, the involvement of society in climate change issues is fundamental for the development of effective adaptation and mitigation strategies, as well as in the implementation of actions to minimize the impacts of climate change.

With ACCENT, the European science centres and science museums made a commitment to strengthen the efforts they made at the local level in a global European action, by gathering their practices in science communication and public engagement in climate change issues.

ACCENT took the form of a European participative campaign, where 15 institutions shared their experience under a common framework, and made interactive and participative communication tools available to a large number of European citizens.

The ACCENT proposal aimed at relying on research institutions in Europe committed to this research to spread the latest results to the public.

The ACCENT consortium contributed to taking this dimension into society and to generating interests and increasing public awareness of the global and local aspects of climate change.

In this context, four main objectives were identified for the ACCENT project:

The first one was exchanging practices and integrating synergies among the science centres, museums and aquaria engaged in the communication of climate change. That means creating a long-term set of tools (catalogue) for exchanging data and activities among a high number of organisations committed to public engagement in science communication in Europe. Such activities were published on the ACCENT website, used in the second year for the European action on climate change in all science centres of the consortium and are available to others.

The second one was to implement a global communication action based on the two-way science communication of climate change issues in Europe. All science centres of the ACCENT consortium concentrated their efforts on the organisation of public programs, mainly in the second year of the project.

The third one was disseminating the latest results of research and its contribution to the advancement of climate change comprehension. The presence of the University of Lapland and of the Scientific Advisory Board assured the quality of the climate change publications chosen and suited to teachers, students and citizens.

The fourth one was the engagement of citizens in debates, and the collection of data concerning their perception in Europe on climate change issues, risks and impact, both for the general public and for policymakers and other stakeholders. The project proposed to associate the communication action with a participative approach engaging citizens in the debate of climate change. This approach integrated complex scientific issues with interactive actions. The strategy of engaging citizens in dialogue and discussions about emerging science and technologies, and their social, ethical and legal aspects, was recognized by the European Commission as a fundamental component to create the knowledge economy on the basis of the European Union's Lisbon Agenda.

Such objectives were achieved through a coordinated work plan of activities during the two years of the project.

The first step was dedicated to the selection and cataloguing of existing programmes and activities aimed at raising public awareness of climate change phenomena and the related impacts. A wide range of communication tools was considered, such as science demonstrations, theatre performances, participatory games, educational activities, workshops, lectures and debates. An online catalogue was developed by the consortium, sharing and exchanging the best experience in Europe. Each partner established relationships with local research institution groups working on climate change at the European level for the implementation of their public programmes.

The main achievement, during the first 12 months of the project, was the sharing and the definition of the best practices that were used the year after for the I Do campaign for the communication of climate change in all science centres, museums and aquaria of the consortium. Methodological inputs concerning the implementation of activities to be performed with the public during the Awareness Campaign and for the organisation of the Local Citizens Debates were done by the WP leaders (IDIS, ECSITE, Observa, the University of Lapland and the Experimentarium) and sent to the partners to implement all communication activities in each country.

The second step was dedicated to developing the European Communication Action to the Public (the I Do campaign) with two actions: public programmes and LCDs. First of all, each science centre/museum and aquarium of the consortium defined the calendar of events during the 12 months, including a list of science demonstrations, theatre performances, participatory games, educational activities, workshops, lectures and debates, involving the general public (citizens, students and teachers), and the organisation of at least two Local Citizens Debates (LCD), involving a representative sample of citizens from young people to senior citizens on a structured discussion about the expectations of climate issues.

All partners coordinated the communication campaign targeted at the European public on the latest research on climate change, and the related social and economic aspects. Starting from the activities selected in WP2, science centres, museums and aquaria chose the best way - according to the local conditions and the target audience - and the communication tools, which became a part of the list of activities and events programmed in their institution.

The main audience of science centres can be divided into three clusters: schools, families (general public) and interested professionals (scientists, industrials and politicians).

Science centres, aquaria and museums were seen by visitors as reliable sources, and they were also recognised as places for debate and dialogue, and they supported the development of science rather than just acknowledging it.

The activities proposed disseminated some research results and their support to the comprehension of the functioning of the climate and the earth system, including the ocean and the polar regions, determining the causes of changes in the past and predicting their probable future evolution.

Finally, all activities of the campaign were introduced in the general annual promotional tools of the science centres: catalogues, programmes and websites, as well as in specific ones, such as press releases, printed announcements and posters. The project provided the public with different levels of information, allowing various degrees of depth according to the needs and backgrounds of the public.

All centres of the consortium organised special communication activities by stimulating the curiosity of visitors about climate change phenomena. The two-way approach - considering the social, ethical and economic aspects - suggested organising, as much as possible, communication activities with human interface (explainers, researchers and experts) and transforming the centre into an "agora" encouraging the meetings of ideas, opinions and stimulating the discussion among people in a place where visitors could compare their ideas, opinions and points of view. For these reasons, the exchange of the best practices among partners privileged activities of engaging the public, such as science demonstrations,

performances, participatory games, educational activities, workshops, lectures and debates with scientists, more than large exhibitions and multimedia products. The high number of activities implemented in science centres was coordinated at the European level as a communication campaign by ECSITE, and in a resources web platform that came from the shared toolkit of the best practices.

Two Local Citizens Debates were organized in each science center partner in the project, including a representative sample of (around 30) citizens, from young people to senior citizens, in order to have a well-structured discussion about the expectations of climate issues.

The "Local Citizens Debate" (LCD) involved various actors: scientists from local research institutes, stakeholders, decision makers at the local level, civil society organizations and, of course, citizens. In this way, citizens had the possibility of dealing with the local dimension of climate change (at the regional and local levels) in relation to the global dimension.

The goals of the LCDs were to identify specific needs and to implement the appropriate processes of agenda-framing, getting people engaged in a real dialogue on the future, where they can freely express their fears concerning the consequences of climate change and their expectations and propositions, in order to offer useful tools for European decision makers.

The principal aim of the project was the involvement of society in climate change issues, which is fundamental for the development of effective adaptation and mitigation strategies, as well as in the implementation of actions to minimise the impact of climate change. In this reality, there is a need to know which kinds of new sustainable lifestyles citizens are willing to adopt in order to reduce the negative impacts of climate change. With this, the European science centres/museums and aquaria made a commitment to strengthen the efforts at the local level in a global European action, by gathering their practices in science communication and public engagement in climate change issues.

Project Results:

The ACCENT project involved 15 European and two Israeli science centers, science museums and aquaria, which made a commitment to strengthen the efforts they made at the local level in a global European action, by gathering their practices in science communication and public engagement in climate change issues.

Science centers, museums and aquaria have a long tradition in engaging the public in science and technology topics. NGO representatives, politicians, scientists, teachers, teenagers, parents, journalists and all citizens found in science centres and museums a unique setup and a wide portfolio of offers, where they could debate, discuss, and analyse scientific and technological issues in a truly democratic way. Science centers, aquaria and museums are natural venues for such activities, since they offer an opportunity for a wider exchange of ideas, providing information that is generally perceived to be reliable and providing a neutral ground for individuals to meet and voice their concerns.

"Do you commit to action on climate change? I do" was the message of the ACCENT project, which coordinated a one-year European Communication Action on Climate Change, engaging the public inside and outside of science centers and museums across Europe with exhibitions, school labs, science demonstrations, participatory games, teacher training sessions, lectures and debates throughout 2010. The proposal was to associate the communication actions with a participative approach in order to better engage citizens in the debate on climate change, so that they can actively contribute to reducing climate change through their actions, behavior and attitudes.

The main results achieved are described in the following:

1. Catalogue of the best practices

Before defining the catalogue of the best practices, a list of scientific materials was organised, which was collected by the experts and was related to the topics of the project in a comprehensive package to be used by the partners of the project, as reference scientific documents for all the activities and campaigns on climate change issues, and by all the people who are interested in these topics and would like to deepen into some of the aspects and consequences of climate change all over Europe.

The scientific publications were collected through an accurate scientific search using reliable available sources, such as university libraries, online journal databases and scientific reviews. The total list was approved by the members of the Scientific Advisory Board (SAB) of the project. The available data were organised in categories starting from the basic facts on climate change to the more complex ones, integrating human and environmental dimension, as well as the global implications of climate change. The list was made available for the project members and the general public on the website of the project.

For a long time, science centres, museums and aquariums have introduced specific programmes about climate change in their agenda, because it is a subject of concern for citizens. The large variety of activities showed that these institutions addressed specific issues related to climate change in many areas of practice: exhibitions, hands-on exhibits and

science demonstrations explaining science phenomena behind the greenhouse effect and the consequences of climate change, educational labs and workshops with school groups, lectures and debates with scientists involving the general public, participative games, forums and citizens' conferences have been implemented in many countries, especially addressed to young people. ACCENT integrated and rationalised this expertise and created a long-term set of tools (catalogue) for exchanging data and activities among a high number of organisations committed to public engagement in science communication in Europe. To this effect, the project implemented a web platform where the selected activities were catalogued and published. The catalogue included basic description of the actions and the guidelines on how to implement it, as well as the scientific content explanation. It helped the whole consortium plan and implement the European communication actions and provided contents for the web platform <http://www.i-do-climate.eu>.

The activities were categorised into the following categories:

- -Educational programmes (Both students and teachers)
- -Participatory workshops (educational labs and workshops)
- -Science demonstrations (science shows)
- -Science theatres (storytelling and summer theatre)
- -Exhibitions (travelling and photo exhibitions)
- -Hands-on exhibits
- -Websites (webpages)
- -Games (computer and online games)
- -Lectures (science cafes and conferences)
- -Films (TV programmes and documentaries)

This list of the selected communication activities contains the name of the activity, the name of the provider of the activity and the category of the communication activity.

All this material is available on the web <http://www.i-do-climate.eu>.

2. The I Do campaign for the science communication of climate change in Europe

The second main result of ACCENT was to implement a global communication action on climate change issues in Europe. Some important facts must be considered as a real added value for the project in terms of impact on the public. Firstly, the consortium represented a large number of organizations (fifteen) and countries (nine) involved in the project, with a well balanced geographical representation in Europe. Secondly, we considered the long-term impact of the action, which is focused not on a short period (day or week) but throughout a full twelve months during which these organizations were open to the public every day. ACCENT activities were implemented in the agenda of these centres, both through specific (press release, print announcements and posters, internet website, etc) and usual channels targeted to different audiences: list of labs targeted for school groups of different ages (primary to secondary school), family events, science demonstrations calendar, media, etc. Efforts were made by each institution that took advantage of special events to disseminate ACCENT activities. In this sense, synergies were created with national events and

celebrations (National Science Weeks, Science Days or National Science Festivals) when science centres, science museums and aquaria opened their doors with specific programs of the public understanding of science.

The implemented ACCENT activities ensured two-way communication opportunities, taking into account the multifaceted aspects of these issues, in particular:

- explaining the causes and consequences of climate change through friendly and interactive approaches (hands-on, science demos, theatre performances, etc);
- disseminating the results of research and encountering scientists engaged in such research (lectures and debates, scientists lab demonstrations, films and multimedia products);
- debating social and economic aspects related to climate change in addition to the scientific ones (local citizens debates, participatory games and workshops).

An important branding strategy was developed in order to target all these events as a unique action of communication on climate change at the European level. A unique logo and common messages were created and used by all partners of the consortium in the implementation of the project. A thorough dissemination plan was established and implemented by ECSITE in order to give the greatest visibility to the project, both within its member institutions and outside the network.

The I Do campaign provided a framework for delivering key messages about climate change issues to the target audience, and it discusses the recommended actions in order to raise awareness of climate change and its impacts.

The I Do campaign represented an opportunity to advocate the role of science centres in climate change issues in a large and worldwide audience of institutions and experts. We need to act locally but think globally.

Climate change is a complex issue. The complexity of the issue makes it difficult to understand and causes controversy. It is also difficult to discern change over short-time periods, as normal variability masks the climate change trends. The messages clearly communicated were:

- That climate change is real and the effects are long-term.
- That it is possible to adapt to the impacts climate change will bring and mitigate the causes.
- That there are risks to the "do-nothing" option.

From the number of the participants involved, it is possible to deduce that there is a big interest in the topics of climate change and of global warming, concentrating more on the information on the contribution to reducing climate problems than on scientific topics.

Considering the number of visitors of the science centres and museums involved in the project, about 2.600.000 persons (teachers, students, pupils and the general public) were informed and engaged in the I Do campaigns in all partner countries (exhibitions on climate topics and science shows, seminars, and debates), while about 200,000 people have been directly and actively involved in activities (science demos and labs, debates, participatory activities).; more than 670 people were involved in the LCDs. This result is described in the

D4.6 National Report on Public Activities Implemented by Science Centres/museums with the Press Release and Review.

An explicative example came from the AHHAA partner: The relative number of the ACCENT visitors is therefore 54000! It means more than 4% of the Estonian population was provided with information on climate change and sustainable energy economising by AHHAA directly. The number of informed people is probably even bigger, since our practice showed that mouth to mouth is still one of the main information channels here.

All activities and events proposed during the I Do campaign had a great appeal, and people need to be informed and they want to participate and to be involved in places where they can develop and be informed. We can say that those activities changed the opinions on climate change of the people involved.

A token of the good results of the I Do campaigns organized by the partners is the information from the national reports.

From FTI, Belgium: In total, 8,224 visitors were involved in the ACCENT activities. In general, the target groups were very enthusiastic about the activities chosen, and found the themes on the environment and climate change very interesting. They said that it was difficult to convey climate change issues to the public, but the given activities allowed to do so. The activities were given in a stimulating and educational way. Their interest and awareness on environment and climate change rose.

From the Experimentarium, Denmark: Topics related to climate change and energy issues are, however, quite new and somewhat complicated for teachers to integrate into schools, so the ACCENT activities and projects have been very popular with schools. Moreover, a number of the ACCENT activities are still the most popular activities with the biggest amount of bookings from schools. The climate show in particular has given the Experimentarium a show that is integrated into the daily programme and a possibility to target many visitors at any one time.

Many researchers in alternative energy forms have been involved in the ACCENT activities, and they presented their research at the Experimentarium, often in close dialogue with the students. This network of researchers and scientists will also be valuable in the future when creating similar projects.

From AHHAA, Estonia: All ACCENT activities addressed a wide range of people falling into different categories without any distinctions, based on age, gender, level of scientific training or social category. AHHAA supported the participation of a "floor team" of science centres in climate change communication training and conferences in 2010. Animators and facilitators are more competent, and can use different sources in case of controversial topics independently.

The science centre AHHAA will use the partnerships created by this project in the future, as well. The exhibits we made for ACCENT will be placed in our brand-new building that will open in the beginning of May 2011. We will use science demonstrations and workshops continually.

From Heureka and LAY, Finland: To sum up, the influence of the ACCENT project is the strengthening of Heureka's contacts and partnerships with research institutions and with the scientific community, the participation and activation of the audience of the science centres, the instruction of our own explainers, and other staff, to build up their expertise on a current scientific issue, a good outreaching program and permanent practices for the public events on climate change. The project has been very successful and satisfactory.

From NAISICAA, France: To extend the outreach, Nausicaá mobilised the information and education multipliers, such as teachers, environment educators, explainers and awareness, by raising professionals and by putting a mechanism in place, which will allow the continuation of educating the general public for ocean and climate change issues after the project is over.

Also, to promote the ACCENT campaign and to disseminate information and tools regarding general public education about key climate change and ocean challenges, Nausicaá reinforced partnerships with international, European, national and regional networks, and NGOs, each of them having circulated the information on ACCENT to their own audience.

From Mada tech and BSMJ, Israel: The ACCENT I Do project enabled both museums, MADATECH & BSMJ, to strengthen, to deepen and to widen their sustainability and environmental activities.

The ACCENT program enabled both institutions to be involved in many fruitful partnerships with many institutions and organisations, regional or country-wide. For example, the cooperation with the Israel Ministry of Education and the Israel Ministry of Environment Protection; with the Israel Electric Corporation; with the Jerusalem Municipality (BSMJ) and Haifa Municipality (MADATECH); with the national and local organizations for sustainability and for the environment.

We expect that this cooperation and partnerships will continue in the next years.

The ACCENT project enabled both institutions to learn from the other partners in the project; to enrich our sources; to face new audiences and to enable the continuity of our activities to target groups.

The knowledge and the experience gained by this project will contribute to all our activities in the future.

The project also enabled the museums to focus on regional, national and global environmental issues and to create a steady basis for future activities.

Through our activities and events, we reached a great number of people (adult and young people, pupils and teachers) in order to increase the awareness of climate change and the involvement in the environment issues, especially in the need for reducing greenhouse gas emissions.

In 2010, 36,985 visitors attended the ACCENT I Do activities at BSMJ and 43,993 at MADATECH.

From Acquario di Genova, Italy: The Accent communication actions have touched directly more than 2,800 people but, considering the information spread by the press, the number becomes larger than this. The different ways to spread the information on climate change

issues allowed us to reach different targets, experimenting also new kinds of activities with success, such as theatrical performances and local citizens debates. In particular, the local citizen debates allowed us to put scientific experts and public administration representatives in contact with the citizens, and during the debates it was possible to talk about new future initiatives to carry out in cooperation with them. The cooperation between the aquarium and the environmental organisations got stronger and let us act concretely on a common theme.

From Fondazione IDIS-Città della Scienza, Italy: From the number of the participants involved, it is possible to deduce that there is a big interest in the topics of climate change and of global warming, concentrating on the information on the contribution to reducing climate problems than on scientific topics. A big necessity to meet scientists and experts is present. A request shared by students and teachers is to insert the climate change and global warming topics into the school programme. All activities and events proposed during the I Do campaign had a great appeal, and people need to be informed, they want to participate and to be involved in places where they can develop and be informed. The media presented a little information, especially on scientific topics, as well. A good proposal is to develop contacts with the work world and with the territory.

From Universeum and Teknikens Hus, Sweden: In 2010, more than 600,000 visitors to the Universeum and Teknikens Hus had the opportunity to experience the ACCENT "I Do" campaign through exhibitions, science shows, debates, school labs and teacher training. More than 11,000 of those visitors participated in targeted activities according to the ACCENT project plan. Just before the activities started in the beginning of 2010, the climate issue had been given a lot of attention and was highlighted due to the preparations for the negotiations at COP 15. After the not-so-successful COP15 meeting, the interest in climate issues dropped dramatically. With this background, the ACCENT project was of great importance for engaging citizens in taking action against climate change.

From Techniquet, UK: Overall, 12,586 people were involved in the Accent project in Wales. Techniquet has been able to broaden its partnership with many institutions across Wales. It has widened the knowledge of our visitors and given us an opportunity to engage with them in a difficult subject. The long term impact on Wales is significant. Jane Davidson - the Welsh Assembly Minister (<http://wales.gov.uk/about/cabinet/cabinetm/janedavidson?lang=en>) has championed the project and is using the findings to inform the Welsh Assembly Government future response to climate change. This, if anything, is the most significant development the ACCENT project has achieved in Wales: that the project has been a catalyst for allowing the public to influence future government policy on climate change.

3. European recommendations on climate change problems by citizens from all partner countries

The main goal of this step of the project was to raise interest and to stimulate debates on climate change issues, risks and impacts, both for the general public and for policymakers and other stakeholders. These topics are of growing concern for today's society, as much as the consequences of climate change in daily life.

However, the understanding of citizens and their engagement in these issues must not be taken for granted. Science centres, museums and aquaria have a long tradition in engaging the public in science and technology topics. NGO representatives, politicians, scientists, teachers, teenagers, parents, journalists and all citizens found in science centres and museums a unique setup and a wide portfolio of offers, where they could debate, discuss and analyze scientific and technological issues in a truly democratic way. Science centres, aquaria and museums are natural venues for such activities, since they offer an opportunity for a wider exchange of ideas, providing information that is generally perceived to be reliable and providing a neutral ground for individuals to meet and voice their concerns.

In order to organize the Local Citizens Debates in a good way, a preliminary survey was carried out under the supervision of Observa, in October 2009, in each science centre of the consortium (1,254 questionnaires) to understand the citizens' perception of climate change, and it was oriented towards choosing significant actions and activities for the I Do campaign, which could modify perception and make citizens act in order to reduce global warming. The study confirmed that people consider climate change as a serious problem that requires urgent actions. The citizens think that the media (radio, TV and newspapers), movies and books pay little attention to global warming, and they would like more information on the global warming impacts on human health, and on what they can do to reduce global warming.

Twenty-five Local Citizens Debates took place across Europe and Israel. In total, 670 people (aged 18-65), of whom 56% were female, attended the meetings at the science centres in Europe, and discussed with experts, decision makers and stakeholders. 150 panel experts were involved in the discussions. Given the fact that each science centre contributed to developing the initiatives on climate change from different perspectives, information from participants was collected during the LCDs, concerning the following issues: information, communication, economics, politics and responsibilities regarding climate change.

Considering the main findings reached, we can consider that climate change seems to be a distant phenomenon according to the biggest part of the panellists; they are not used to connecting climate change to local events. They showed they were aware of this fact and of the need for more information. Climate change is usually associated with global warming and the melting of the glaciers in the North Pole, without considering the consequences on the local environment and what everyone can do to avoid them. In the age of globalisation, the interconnection between the local and the global dimensions is inevitable, so we can talk about a "global" reality. As some citizens suggested, it is necessary to think globally and to act locally. For this reason, more pressure on countries with the highest CO₂ emissions was asked in order to lower their carbon footprint emissions.

Some citizens feel they do not have enough information in order to answer the question if climate change is due to human responsibility. They mention that climate change phenomena, such as cooling and warming phases have been cyclic during the history of the Earth. The participants remind us that the scientific community was of the opinion that we were slipping into another ice age in the 70s and 80s; "why has this changed in 30 years?". A few panellists extend to hypothesising that the actual focus on global warming is due to a small minority of scaremongers.

It is evident that people need a clarification on the effects of climate change, as they expressly ask for. They would need to know to what extent global warming is caused by human activity

and to what extent it is a natural phenomenon. The citizens would like to have indisputable and statistically based evidence. The citizens acknowledge that, on the one hand, science and technology contributed to the improvement of general conditions of life, though on the other hand, the two subjects caused problems they themselves are called to solve. Even if it is shared by few, there is still an idea of never-ending development, which is typical of the positivist and capitalist theories. In any case, the citizens recognised that the causes of environmental disasters may be both natural and human. However, most impacts are caused by human actions due to an inattentive technological development, and this makes the citizens feel overpowered.

Institutions and the mass media must make it easier for citizens to know how to be more environmentally friendly. As far as food is concerned, the citizens from southern Italy to the north of Europe ask to stimulate the consumption of products that have not been transported on long journeys.

Almost all citizens agreed that it is necessary to change lifestyles, in order to consume in a more responsible manner. It is hoped that, in the future, citizens will be informed on positive behaviour that may be implemented without turning out to be penalising or tiring, focusing instead on the fact that they represent a more intelligent, useful and also pleasant lifestyle.

The political class is afraid of losing consent and is trying to spread positive but unpopular alternative models; as a result, the maintenance of the present (unsustainable) standards is always taken for granted. This is why citizens ask for more information and sensitisation campaigns through the media (TV, internet, SMS, radio, etc) to release types of culture and behavior, which are less damaging to the environment.

Another important point is how information on climate change is presented: messages are intermittent, confused, alarmist and contradictory. As a consequence, people have difficulty understanding an issue and making decisions. The mass media exacerbate different positions, manipulate information, present theories and predictions as they were proved. Everybody, journalists included, agrees on the fact that journalists are not often interested in scientific data, as they are not sensationalist enough.

Journalism seems to be far from being a "watchdog". The mainstream media are not independent from economic and political interests; the public is aware of this. As a result, the Eurobarometer surveys show that Europeans do not trust the mass media very much. But in spite of this, even if implicitly, it is evident that the public longs for a watchdog journalism that is capable of investigating.

The citizens expressed a need for some sort of popular "education" on climate change, as if they believed that climate-friendly behavior might be induced. They showed a way of thinking based on the principle that human behavior is oriented by a cost-benefit analysis. We can note changes in general environmental behavior during the last decades, but they are slow. Perhaps we have not been hit by the effects of climate change hard enough to try seriously to remedy the situation (or we do not have an exact perception of these effects).

The panellists, and the citizens in general, ask for more (scientific) information very often. In accordance with the theory of the Public Understanding of Science, the citizens seem to believe that the more they know, the more they are likely to act. Besides, they underline the need for laws (i.e., to produce less packaging and reduce power and water consumption).

As far as alternative energies are concerned, the panellists' opinions are contrasting. On the one hand, the citizens think that these sources represent the future, and on the other hand, they have some doubts in terms of costs/benefits. Some of them also asked why there are no laws that stimulate the use of green energy. Climate change is, first of all, a problem of short consideration that resources are limited, and for this reason it is necessary, on the one hand, to avoid waste, and on the other hand, to increase research activities in order to improve the efficiency of technology.

Climate change seems to be a "big narration" of the new century, an interpretative frame with which it is possible to try to explain the present age in a systemic way. Effectively, it is a very complex issue that involves many social factors and subjects: politics, economics, science and technology, nature, consumption and lifestyles. The number of the intervening factors and the complexity of society (and the interests involved) are such that it is difficult to have exact scientific predictions about what may happen.

Almost all panellists agree that it is important to have personal and local involvement, as everybody must do their part at different levels, from the single citizen to large companies and state administration. The EU is expected to give directions to the member states, while the national governments should dictate the guidelines for enterprises, citizens and local institutions, and the letters, in turn, are called to diffuse the rules and good practices.

A fundamental role is attributed to schools. The older generations tend to resist change, while the younger ones are more likely to embrace it, as it is their own future; it is therefore essential to work on the new generations in order to develop correct messages about climate change. A need to change educational models coming from schools, using informal learning and collaborating with other institutions, emerges. The universities could cooperate more with the municipalities, while the scientists and the mass media should have regular meetings. The associations, NGOs and science centres are supposed to be very important in promoting new models of behavior, and the individual citizen, too. The institutions and the mass media are called to give feedback on how well we are doing and whether we are meeting the local goals, so that citizens can be encouraged to go on.

Finally, in the age of globalization, the interconnection between the local and the global dimensions is inevitable, so we can talk about a "global" reality. As some citizens suggested, it is necessary to think globally and to act locally. For this reason, more pressure on countries with the highest CO₂ emissions is asked to lower their carbon footprint emissions.

In conclusion, a list of any recommendations expressed to the European citizens at the end of the Local Citizens Debates follows:

- Requirements for the EU: economical means to create public opinion to the grass roots organisations.
- To develop new school programs, including global warming topics with not only scientific aspects, but also economic and political aspects. A 360° education. It is important for new generations to think globally and to act locally.
- To work on the new generations in order to develop correct messages about climate change by the mass media.
- To change educational models coming from schools and using informal learning, and collaborating with other institutions and industries.

- More communication to citizens from the local industries and companies that use green energy and produce goods that respect the environment.
- To increase scientific and social telecasts on climate change topics, especially for children and young people.
- To change the marketing of the consumer culture to environmental marketing.
- To stimulate an economy that respects the environment.
- To insert laws to produce less packaging.
- To issue laws that reduces power and water consumption.
- More information and sensitization campaigns to release types of culture and behavior, which are less damaging to the environment through the media (TV, internet, SMS, radio, etc).
- Have regular dialogues with researchers. For example, researchers and journalists can meet once a month at breakfast meetings to exchange information on climate change.
- Highlight positive news. Cooperate with the authorities to give positive feedback to citizens who struggle to reduce emissions.
- "EU Action Against Climate Change, Leading Global Action to 2020 and Beyond"? (brochure, edition 2008) Is it reasonable that one of the EU's capitals has the largest emissions of greenhouse gases per capita?

Potential Impact:

The impact of the project is linked to the methodology used and the experimentation of the best practices in the science centres/museums and aquaria of the consortium, which carried out reproducible results in the scientific and the educative sectors. Furthermore, the positive impact of the ACCENT activities proved to be a qualitative evaluation of the different stages of the project.

The implementation of the European campaign on climate change "I Do", the choice of the Local Citizens Debates, as participatory methodology, and the experimentation of the best practices selected, gave us the opportunity to work with a consistent number of people from different backgrounds.

In the following, there are tools for the communication of the ACCENT project at the local, national and international levels.

The branding strategy and the common communication products developed were put into great use during the project, and were innovated on and developed throughout the project.

This was a key factor for the dissemination strategy: to inform on the ACCENT project. The visibility of the ACCENT logo and branding were fundamental to the Dissemination for Awareness stage of the project dissemination.

The logo, graphic identity, language issues and logotype variations were established at the start of the project. All partners then developed the logo in their native languages and used it for their dissemination material.

Examples of the I Do logo translated into Dutch and French

2,000 project leaflets were printed, on recycled paper, in order to promote the project, as a key publication for dissemination. Due to environmental concerns, this number was kept to a necessary minimum.

The use of stickers proved to be an innovative and infectious way to promote the project. It allowed recipients to "tag" other documents and objects around them, allowing the I Do logo to have a very visible presence.

The specific design of this leaflet was required in order to fulfill the dissemination objectives of all three stages of the dissemination strategy, as it will last the entire two years of the project, but particularly Awareness and Action. The stickers bearing the project's brand message and variations are to encourage Dissemination for Awareness, in order to make the target audience aware of the project and why it is important; and Dissemination for Action, in which the leaflet incites the target audience to login to the web platform and join the project.

The leaflets are printed and distributed according to the following plan:

Who? How many people? How many leaflets each? Total

ECSITE key contacts at selected events 100 1 100

Participants at ECSITE Annual Conference, Dortmund 2010 900 participants each receive a leaflet in the Conference bag 1 900

Project partners for local and national dissemination 14 50 700

ACCENT Launch event 150 1 150

United Nations COP15 Climate Change Conference 150 1 150

Four identical ACCENT banners were produced to ensure the project visibility. These banners featured the project logo and were present at the Launch Event in the Experimentarium, in the COP15 and then in the partner institutions.

In the following, there is a short description of the impacts on the main targets of the project:

The dissemination activities are to take place through a number of specified channels that are best adapted in order to reach the target audience specified in the previous section.

The ACCENT Launch Event.

A prestigious two-day launch event was held in the Experimentarium and in the United Nations COP15 Conference on Climate Change, December 14-15, 2009. Participants from across Europe, including the public, professionals in science communication, researchers, campaigners, journalists, policymakers and other key stakeholders, attended this two-part event. Speakers at the Experimentarium launch event included: Helge Sander, Danish Minister of Science, Jean-Louis Fellous, Executive Director of the International Council for Science's Committee on Space Research, and representatives of the European Environment Agency, as well as various representatives of the project.

A video connection was organized from the Experimentarium to the ASTC side event in the Bella centre with a group of young people participating in the ACCENT activities and in the Clim'city game (one of the ACCENT activities by a participating institution, Cap Sciences in Bordeaux, France). The result was part of a 90-minute conference broadcast live from the COP15, on December 14, at 13:00. Science centres around the world were joined by a panel of experts, including the Deputy Chair of the IPCC. Those experts commented on the results of the game presented live by the Experimentarium and other science centres across the world.

The COP15 side event on December 15, 2009, was the result of an application to the secretariat of the United Nations Framework Convention on Climate Change, submitted by ECSITE on behalf of the project which was selected from several hundred proposals to take place in this event of great international significance. The side event was co-organized with the World Ocean Network, and speakers included the ECSITE President, Hans Gubbels, Martin Sommerkorn of the WWF Arctic program, Philippe Vallette of the World Ocean Network and Luigi Amodio, Project Coordinator of ACCENT and Director of the Fondazione IDIS-Città della Scienza.

Invitations and programs were designed and distributed to hundreds of project contacts, both in person at the COP15 and digitally throughout the ECSITE network and partner networks.

Four identical freestanding "I do" logo rolling banners, as well as 15 individual ACCENT project banners, one representing each partner, were produced for the ACCENT Launch Event. These banners, each headed with the ACCENT logo, brand message and FP7 logo, provided an eye-catching physical presence at the ACCENT events, and will also be present at the ECSITE Annual Conference in June 2010, in Dortmund.

Two press releases leading up to the launch event, translated into local languages by the project consortium, as well as press activities at the events themselves, resulted in a variety of press attention to the project across Europe in the form of articles, web postings and interviews, taking full advantage of the considerable media spotlight on Copenhagen at the time. The launch event also allowed a number of synergies among common projects to emerge.

E-proceedings of the event were drawn up, distributed to participants and published on the project website.

In the framework of the ACCENT project, at the official side event at the COP15 United Nations Climate Change Conference in Copenhagen, on December 15, 2009, entitled "Science Centres, Museums and Aquaria Commit to Action on Climate Change", the ECSITE President, Hans Gubbels, unveiled the ECSITE Declaration on Public Engagement in Climate Change, and explained its importance as a call for ECSITE members, researchers and policymakers to form partnerships in order to inform and empower the public on this global issue. ECSITE and partners are invited to use the Declaration, translate it and disseminate it. This document was communicated to 400 ECSITE member institutions and 4,000 wider ECSITE contacts.

ECSITE Declaration on Public Engagement in Climate Change

Science centres and museums promote the advancement of knowledge and human endeavour based on scientific principles. We advocate that science is the most successful way of describing and understanding the phenomena of the world around us. As such, we rely on the objective use of scientific evidence to present science. Considering the wealth of scientific research, we acknowledge climate change to be a serious global threat. As professionals in science centres and museums across Europe, we engage with over 30 million European citizens each year in the science of the world around us. This well-established connection to the public puts us in a key position to engage with citizens in the issue of climate change.

ECSITE, the European Network of Science Centres and Museums, declares that public engagement in climate change demands a partnership approach: for the results of research to be made available, to enable public understanding and engagement, in order to inform policy. To make these partnerships possible, we strongly encourage governments to incorporate public engagement into their policymaking on environmental issues systematically, enabling a true participatory dialogue among policy, research and society. We expect governments to build on their relationships with science centres and museums, the places and organizations that the public look at and trust on scientific topics. We commit our network to collective action in raising awareness of the issues at stake, to educate, engage and empower the European public encouraging critical thinking on this issue, reaching out to adults, young people and children through the many thousands of exhibitions, events, conferences and debates, which take place in our institutions every year.

On the occasion of the COP15 United Nations Climate Change Conference, in Copenhagen, in 2009, we call on European and national governments to come to a solid agreement to reduce greenhouse gas emissions and to partner with science centres and museums on public engagement in order to fulfill our shared responsibility towards our planet's climate.

The ECSITE network brings together the largest ACCENT targeted audience across Europe. ECSITE offered a wide range of ways of meeting the target groups.

The ecsite.eu website has a dedicated page for ACCENT, updated regularly with news of the project. ECSITE also has a Twitter channel at <http://www.twitter.com/ecsite> with 100 followers, and a Facebook page entitled ECSITE.

The 400 ECSITE member institutions comprise science centres, museums, natural history museums, aquaria and zoos from across Europe.

The ECSITE e-Newsletter is emailed every month, updating ECSITE members and key contacts in the field of ECSITE activities. 3,000 contacts receive the e-Newsletter. Every month, this contains an update on the ACCENT activities with links to more information.

ECSITE also publishes a quarterly newsletter with more in-depth articles. In autumn 2009, to coincide with the ACCENT Launch Event, a special ACCENT issue of the ECSITE newsletter was released.

The ECSITE Annual Conference is Europe's largest gathering for the field of science centres and museums. Over 800 participants meet for two days of pre-conference meetings and workshops, and 74 sessions over the three days of the conference. Those conferences

guarantee the involvement of key stakeholders and decision-makers, so that ACCENT ideas and materials can have a strong impact to ensure long-term engagement in climate change.

The two ECSITE Annual Conferences that fall within the project's timeline will be key events for dissemination, first in the Dissemination for Awareness and Action, and in the second conference in Dissemination for Understanding.

Every year, the directors of ECSITE's full member institutions meet for a two-day seminar to exchange views and discuss key issues. Each year, the Directors' Forum is hosted by one of the participating institutions and discussions are centred around a special theme. A carefully thought-out programme is produced each year by ECSITE together with the host institution. The theme of the Forum often follows current hot topics.

To fit with the theme of ACCENT, the ECSITE Directors' Forum 2009 was entitled Science Centres and Museums: Platforms for the Communication of Climate Change in Society. The event was held in the Experimentarium, Hellerup, Denmark between November 20 and 21, 2009. 34 directors from the 90 full Members of ECSITE discussed the questions: How do we best communicate the science behind climate change? How do we communicate the risk that climate change imposes upon us? Three weeks before COP 15, the United Nations Climate Change Conference to be held in Copenhagen, how can our institutions be the best platforms for the communication of the science behind climate change among the researchers, the industry, the politicians and society? The format was a combination of peer discussions in small groups and inspiring keynote speeches.

The Nature Group is an ECSITE thematic group that explores how to change perception and behavior in relation to issues on nature, with a range of external experts from diverse fields. Its aim is to be provocative and to challenge thinking. The Nature Group is co-chaired by Camille Pisani, Director, Royal Belgian Institute of Natural Sciences, Brussels, Belgium and Sharon Ament, Director of Public Engagement, Natural History Museum, London, UK. This group served as a dissemination channel for ACCENT, particularly relevant for the Dissemination for Understanding part of the project.

The institutions below joined the I Do campaign as participating institutions.

- -Science Museum, London - <http://www.sciencemuseum.org.uk>
- -Cap Sciences, Bordeaux, France - <http://www.cap-sciences.net>
- -Museu Agbar de les Aigües, Barcelona, Spain - <http://www.museudelesaigues.com>
- -Expografic, Barcelona, Spain - <http://www.expografic.es>
- -Fondazione Marino Golinelli, Bologna, Italy- <http://www.golinellifondazione.org>
- -Universitat de Barcelona Arts Santa Mònica - àrea de ciència - <http://www.artssantamonica.cat>

Attracting a total of an estimated 4 million visitors to their events and activities every year, the inclusion of those institutions in the ACCENT project added to the impact of the existing 3,8 million visitors of the ACCENT partner institutions, effectively doubling the impact of the I Do campaign in science centres and museums.

The impact of science centres on the communication of science to the large public is well-known today, as they address a wide audience of people with an efficient approach. Today science centres are considered as an important type of support to society at large, as a place where people can find opportunities of informal learning experience in science and technology. Starting from December 2009, and mainly in the second year, science centres will promote the ACCENT best practices in their programs, such as hands-on exhibits, science demonstrations done by explainers, as well as scientists, theatre performances in exhibitions areas or in specific auditoria, showings of films and participatory games. All these activities have the main goal of stimulating the interest and the curiosity of visitors through emotional, spectacular and unexpected effects.

A full, detailed, multilingual and fully adaptable project branding was conceived, developed and finalized in consultation with the project partners and in close collaboration with the Work Package leader, ECSITE. The general communication products: logo and branding guidelines were distributed to and adapted by all partners, and made accessible on the project website.

The project brochure, complete with detachable "I do" stickers, was designed, published, circulated to all partners, distributed to all participants in the Launch Event, and prepared for circulation to the 900 participants in the upcoming ECSITE Annual Conference in Dortmund.

All project participants shared resources and activities from the first project meeting, thanks to the online repository of activities and a thorough communication among partners by email, phone, online messaging and in person, for activities to be thoroughly tested before implementation.

The partners launched a number of national initiatives, contacting relevant local and national institutions and creating synergies with the project, while the Work Package leaders created synergies at the European and international levels with initiatives, such as IGLO and the Climate Action Network.

In conclusion, a list of the key figures in the ACCENT project dissemination follows:

- 300 total participants in the ACCENT two-day Launch Event
- 34 national and international network organisations partnering with and actively disseminating ACCENT activities to many thousands of member institutions
- 68 project partner dissemination channels actively disseminating the project to many thousands of individuals both in person and online
- All 2,000 ACCENT project brochures printed were given to individuals
- 1,500 individuals received copies of the ECSITE Newsletter devoted to ACCENT
- 4,400 individuals on the ECSITE mailing list receiving regular project updates
- 950 institutions of science communication, NGOs and policymakers specifically targeted and invited to the ACCENT Launch Event
- 8,600 Europe-wide journalists notified by project partners of the ACCENT activities
- 40 professional presentations and conferences held by project partners disseminating the ACCENT project
- About 2,600,000 people were involved in the I Do campaign events, activities and exhibitions on climate in all partner countries

- 670 people were involved in the Local Citizens Debates

We can consider that the ACCENT project had a wide impact with a good degree of success. As regards: to inform on the ACCENT project, it is clear that awareness has been raised at the European level, throughout the field of public engagement in science, as well as in the general public through the national activities, and through secondary stakeholders.

The success of: to raise awareness of the issue of climate change is more difficult to measure, and yet we see that this was achieved thanks to the Disseminating for Understanding stage of the project, where in-depth articles and conference sessions ensured a thorough examination of the issues in climate change at stake, and its communication to the general public.

The Resource Centre was the key focal point: to increase the understanding of the best practices in public engagement in climate change and to encourage science communication professionals to make use of the ACCENT Resource Centre. More than 160 resources and best practices are available in the Resource Centre, and this number continues to grow; 26,000 visits have been made to the I Do website since its launch; 140 events have been uploaded to the Events section in the first four months of the project activities.

80 individual users have registered as contributors to the website.

By involving the participating institutions, ACCENT more than doubled its impact as a project in terms of visitors per partner institution, fulfilling: to encourage institutions to join the ACCENT initiative. The inclusion of particularly high-profile institutions, such as the Science Museum London, allowed the project a significantly wider visibility, and contributed to the notion of the project as a collective European action by involving countries which had not been represented previously in the project consortium.

List of Websites:

The ACCENT website was launched in September 2009 and the Resource Centre opened in December 2009, on the occasion of the United Nations COP15 Climate Change Conference in Copenhagen. Since then, the website has received over 26,000 hits from across the world, representing a significant impact. The average time spent on the site, per user, is 3 minutes and 18 seconds, showing an in-depth use of the website, with users remaining in order to browse the pages and download resources.

The I Do resource centre features over 160 resources uploaded by over 80 users from across Europe. This represents a wealth of exchange among professionals in science communication, sharing their resources in order to facilitate a true European collective action on communicating climate change. 26,000 visits have been made to the I Do website since its launch.

This website is intended as the central dissemination channel of the project. It was updated regularly with project news and events, it served as the repository for all project documents, and the resource centre it hosts was crucial to the exchange of the best practices. It was administrated by ECSITE as the Work Package leader.

The objectives of the website have therefore been achieved in the following ways:

The Events section brought the results of the project, in terms of public activities, to the wider European public using the I Do website. In the meanwhile, the Resource Centre established itself as a reference for European science centres and museums looking for material for their public engagement activities in climate change. The "About" and "News" pages were also updated regularly with project progress.

The Resource Centre and Events sections served not only as tools, but also as incentives for science centres and museums to become participating institutions, in order to benefit from the visibility that the website provides them with. The interactive nature of the Resource Centre became a tool to foster collaboration between the participating institutions, sharing resources but also potentially co-producing activities and future material.

The web platform was an important tool of the project. It centralised all information around the project, and it acted as a place where it was possible to share experience and activities with national, European and international institutions and science centres that were sensible to the problems of global warming and climate change.

The reference person was Michael Creek, mcreek@ecsite.eu, and at present, Marzia Mazzonetto, mmazzonetto@ecsite.eu, is the contact person.

The "Web Platform for European Exchange" was promoted through the network disseminating the best practices in other science centres which were not included in the consortium.

<http://www.i-do-climate.eu>