



CICERO

Senter for klimaforskning

Center for International
Climate and Environmental
Research – Oslo

Annual Report 2000

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Introduction

The climate affects the world in which we live in many ways, and will continue to do so in the years to come. Both rich and poor countries will be affected. The climatic changes may be irreversible. To face the challenges, we need more knowledge about the climate system, how to curb the changes and how to adapt.

This is why research and information about climate change is so important – especially for young people, who will be building the society of tomorrow.

CICERO was established as an independent foundation by royal decree in April 1990 with two main objectives:

- ▶ to conduct interdisciplinary climate research at a high international level
- ▶ to keep the public informed about all aspects of national and international climate research and about the climate problem in general.

The year 2000 marked CICERO's **ten-year anniversary**. The Research Council of Norway established a committee to evaluate CICERO's work for its first ten years and concluded that:

- ▶ research at CICERO is of high quality, and its activities are held in high regard internationally
- ▶ CICERO's comprehensive and valuable information services must at least be maintained at current levels
- ▶ CICERO should be allocated greater resources

The committee also recommended that we further develop our network by more actively drawing on outside expertise and cooperating partners. We have taken this into account in our projects on impacts of climate changes and climate policy, and in our studies on issues associated with enforcement, verification, and design of climate agreements. Both of these research areas received small but long-term grants from the research fund in 2000, which we interpret as a recognition of our strategic research

profile and role in Norwegian and international climate research.

Information activities also increased in 2000, with a marked increase in the number of pages published in our climate magazine,

Cicerone, and an equally significant increase in the number of subscribers.

The unusual weather conditions in fall 2000

combined with the dramatic climate negotiations in The Hague led to a great demand from the media for climate-related information. Through such venues as our Norwegian and English web pages, the **Climate Forum**, and numerous presentations in various forums, we provided information about the climate issue from both a natural science and social science perspective.

The year 2000 was thus a very satisfactory year for CICERO in terms of both research and information. It is thus a paradox that it was so unsatisfactory economically. This can be explained partly by the increased office rent in combination with 2000 being a transition year where many research programs were concluded without follow-up programs beginning in full, which made financing of research activity difficult. An increase in information activity also demanded increased resources for which we did not receive financing. However, CICERO has built up an operating fund through many economic boom years, which has allowed us to come through this period satisfactorily. We have initiated efforts to secure more extensive and long-term financing of our information activities, as well as ensuring that we have a long-term foundation for our research activity through our choice of main research areas. In our belief that we will succeed in this respect, we have chosen to expand our basis of expertise and our staff in the coming years. Through knowledge, experience, and vision, we prepare for the challenges ahead.



Director Knut H. Alfsen

Research and Publications

CICERO specializes in conducting interdisciplinary research on the climate issue. Our researchers have backgrounds in such disciplines as atmospheric chemistry, geophysics, biology, geography, economics, political science, and sociology. Over the past year and in the years to come, research activity has built and will continue to build on the following three main pillars:

- ▶ **Impacts of climate change and climate policy:** Studies in this area aim to map vulnerability to climate change and climate measures in different areas of Norwegian society. Building a network based on our in-house research is also an objective here.
- ▶ **Enforcement, verification, and design of climate agreements:** Research here focuses primarily on the situation of developing countries and factors that affect their participation in international climate agreements. Both the natural sciences (verification of emissions through measurements and model calculations) and the social sciences, particularly political science, provide input in these studies, and again, network building is essential. The work builds on models developed at CICERO in cooperation with the University of Oslo.
- ▶ **Integrated assessment:** Studies in this category look at the co-benefits of climate measures and the coupling between climate agreements and other international environmental agreements. One example is a study of how climate measures in China can result in reduced air pollution, which in turn results in reduced health damages. Cooperating partners include NILU, ECON, and MIT.

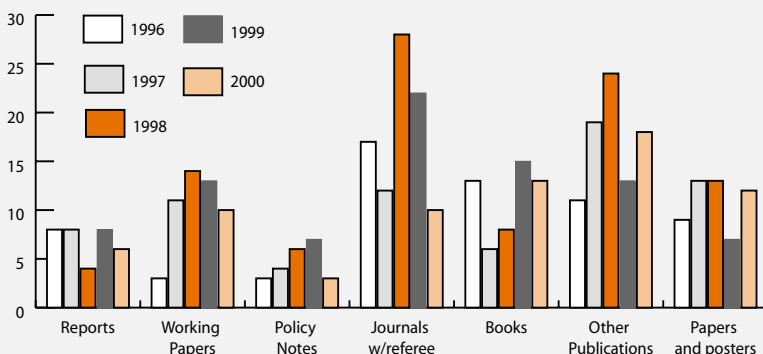
In 2000, CICERO received modest but long-term funding from the Research Fund to work on pillars 1 and 2, and the research activities are well underway. We assume the relevance of this kind of research will only increase because knowledge about the *physical* consequences of climate change will be considerably improved in the coming years, at the same time as political negotiations will create new policy frameworks.

CICERO's achievements within the field of integrated assessment have been well received by the international community, including the IPCC, but this area of research has yet to secure long-term funding.

In the long run, CICERO's goal is to expand its home market, with respect to both research and information activity. Initially, we aim to establish a market in Sweden and Denmark, and it is natural that this type of expansion begin with our information activities. We expect that research on impacts of climate change and climate policy will be particularly valuable in a Nordic context, and we believe that CICERO can play an important role in the realization of a Nordic cooperative venture. We hope to be able to take the first step in this direction in the course of 2001.

In 2000, CICERO participated in a number of key national and international processes connected to climate issues, and the Board notes with satisfaction that the use of CICERO as a center of expertise within climate research is increasing. In addition to the IPCC, the Research Council of Norway, the Norwegian ministries, and the media, we also have the pleasure of noting a demand for our services from business and industry.

In 2000, CICERO also achieved its goal of having at least one publication in a peer-reviewed international publications per researcher. There has also been an increase in popular scientific information activity through presentations, newspaper features, and not least, our climate magazine *Cicerone*.



Assessing the impacts of climate change in Norway

The impacts of climate change are unlikely to be distributed evenly across regions, sectors, ecosystems, and social groups. Even within a country like Norway, which is generally considered to be robust and resilient to climate change, there will be both winners and losers. That is, some sectors or regions are likely to benefit from the direct impacts of climate change, such as warmer temperatures, a longer growing season, or reduced frost risk. Others, however, are likely to experience such harmful effects as increased flooding, heavier storms, and wetter summers, which can have negative effects on some economic activities. Identification of winners and losers is not always straightforward, partly because climate change will manifest itself differently across Norway, and partly because regions and sectors are differentially vulnerable to climate change. An example of this kind of differential vulnerability can be seen in the impacts of decreased winter snowfall, which might be viewed as a positive change by the Public Roads Administration because of reduced expenditures for snow removal, but as a negative change by a local ski resort owner who depends heavily on income from winter ski tourism.

CICERO has been developing an inter-disciplinary research program, financed by the Research Council of Norway and Verdinetet, on the socio-economic impacts of climate change in Norway. The program will address such questions as the following: How will climate change affect Norway? Are some sectors or regions more vulnerable than others? What are the socio-economic consequences?

As a first step in this project, CICERO organized a two-day workshop in October 2000 that brought together scientists from a wide range of fields to discuss the state of knowledge on climate impacts in Norway, and to consider the socioeconomic implications. Results from

the RegClim project were presented and offered as new potential input to impacts studies. The workshop clearly showed that there is a large amount of impact-related research taking place within Norway, but that an integrated perspective is lacking, particularly with respect to the socioeconomic consequences of anticipated changes. CICERO plans to involve the community of impacts researchers in future studies on the socioeconomic impacts of climate change.

Impacts in island states

The issue of climate impacts is one that has already received a great deal of attention at CICERO. For example, in 2000, CICERO took part in a large project financed by the World Bank on the potential impacts of climate change on small island states in the Pacific. CICERO provided an analysis of the economic consequences of impacts on fisheries, particularly tuna. The analysis indicates that climate change is likely to have impacts similar to those observed in so-called El Niño years, when fish populations migrate to new areas. The economies of many island states are based on fishing, and some are likely to experience increases in fish catches, while others will experience decreases. However, even an increase in catch can lead to economic losses, if the economy does not integrate small households more permanently into the market economy. This is because these households tend to move in and out of the labor market, depending on job opportunities, and an increase in fish catch can result in decreased access to labor and pressure to increase wages. As a result, increased fish catches do not necessarily result in welfare gains. The findings of this project illustrate the importance of looking at climate impacts from a variety of viewpoints.

Photo: Morten Tønnessen



The heavy rains in fall 2000 in the eastern parts of Norway demonstrated how important it is to study impacts of climatic change in Norway. Here, the Akerselva river in Oslo swells beyond capacity. In total, flooding washed away roads and railroad tracks worth NOK 100 million.

Compliance and enforcement:

Designing an agreement that works

It is not enough to set targets – regardless of how fair they are or how effectively they combat emissions – if a climate agreement cannot effectively be enforced. In an international system without world government, compliance will always be voluntary to a certain degree. It is thus a main challenge of any international agreement to design a regime that encourages compliance and discourages defection. The difficulty of monitoring and verifying greenhouse gas emissions makes enforcement of a climate agreement particularly complex.

CICERO has received funding for a five-year project from the Research Council of Norway to work on compliance issues related to the Framework Convention on Climate Change and the Kyoto Protocol. The main focus of the project is on effective enforcement of these and future climate policy agreements. We expect this activity to become one of the main pillars of CICERO's research over the next few years. This project is a joint effort between

CICERO, Fridtjof Nansen's Institute, the Department of Public and International Law at the University of Oslo, and other institutions. Central research questions include the following: What commitments under the Kyoto Protocol are likely to be most difficult to enforce? What types of regime design are most capable of encouraging compliance? How can we verify that emissions reductions or limitations are actually taking place? To what extent can international agreements on climate change be designed so as to be self-enforcing? Uncertainty will be given special attention, both in terms of problems of measuring or calculating greenhouse gas emissions, and in terms of effective sanctions when information regarding the level of compliance is uncertain. Finally, problems related to a differentiated compliance system for industrialised and developing countries, and the potential for enforcement mechanisms outside of the Kyoto Protocol, are explored.



Photo: Leyla Mead, IISD

The United States and the European Union faced international outrage after triggering the collapse of climate talks in The Hague in November 2000. The conference attempted to agree on steps to implement the Kyoto Protocol, which calls for a five percent average cut in developed nations' 1990 levels of emissions by 2008-2012.

Burden sharing:

Exploring issues of fairness

One of the most controversial issues faced by policy-makers in their efforts to combat global warming is how to divide the burden of abatement between countries in future agreements, especially between North and South. While the richer countries in the North are responsible for the bulk of emissions, the poorer countries in the South are expected to bear the brunt of harmful impacts. Moreover, the South has to struggle with how to continue to develop if they take on commitments to limit their emissions of greenhouse gases. Two main burden-sharing principles are a “grandfathering” approach, where abatement targets are based on past emissions, and a per capita approach, where national targets are based on each citizen receiving an equal entitlement to emissions. Strictly speaking, the grandfathering principle favors the North by “rewarding” countries with historically high emissions and “punishing” countries that are in the process of development. In contrast, a pure per capita approach would allow developing countries to increase their emissions drastically and would require industrialized countries to reduce their emissions to a much lower level than today. While the burden sharing in the Kyoto Protocol to a large extent is based on past emissions (1990), the actual targets are the outcome of negotiations where both the parties’ willingness to take on commitments and specific national circumstances played a role. It is now becoming clear that in the long run a more systematic approach to the issue of burden sharing will be imperative.

In a joint project with the Netherlands Energy Research Foundation (ECN), CICERO has recently concluded a project that explores issues of burden sharing. The specific objective of this project was to develop a useful tool for negotiators in the next round of climate policy negotiations, that is, for agreeing on reduction commitments after the

Kyoto Protocol period ending in 2012. After exploring relevant fairness principles, burden-sharing rules, and availability of data, a multi-sector convergence approach was developed. This approach is based on the per capita principle, but rather than first setting an overall per capita based national target, it sets standards on a sector basis and adjusts them over time so that per capita emissions in each sector become more alike on an international basis. Seven economic sectors were specified: power production, households, transportation, industry and manufacturing, service, agriculture, and waste. Each sector is allocated a non-binding emission target in per capita terms. For the base year 2010, a global sector emission standard is set equal to the world average per capita emissions of that sector. Thereafter an annual percentage reduction norm per sector is set so that all countries converge to the same national per capita emission level in some year, e.g. 2100. Some implications of the approach are found from calculating national costs for the second budget period (2013-17) for all industrialized countries. The results show that this approach can serve as a sound basis for facilitating future policy negotiations on differentiating emission limitation targets among a large variety of countries, but also that there is ample room for improvement of the method.

The world’s poor will be hardest hit by global warming, although they contribute the least greenhouse gases. World-wide, heavier floods, worse droughts, more violent storms, failing agriculture and much increased diseases can be expected. Drinking water was a scarce resource during the flood in Nepal in fall 1998, when 4 year old Nipi searched for a clean source.



Photo: SCANPIX

Co-benefits of climate policy :

Lessons learned from a study in Shanxi, China

The break-down of climate negotiations in The Hague in November 2000 revealed at least two obstacles to agreement: first, the participation of developing countries in abatement efforts, and second, the regulatory framework governing the use of the Clean Development Mechanism (CDM).

With respect to the first, developing countries are not likely to become involved in efforts to combat global warming unless such efforts also address problems that are considered more pressing. In a joint effort with ECON, a group at MIT in Boston, and researchers at the University of Taiyuan, CICERO has explored how climate measures may potentially provide the developing countries significant co-benefits in terms of reduced damage to human health and material goods, as well as possible positive effects on agricultural production.

The area chosen for a case study was Shanxi, China. China relies heavily on coal-fired energy, and as such is the world's second largest CO₂ emitter. Shanxi is the main coal-producing province in China and faces severe air-pollution problems with acute health-related repercussions. We assessed the local and regional benefits that implementation of GHG mitigation measures may provide this province and identified six abatement options – aimed at

the industry, power, and household sectors – with significant co-benefits, primarily in terms of reduced damage to human health. These options included increasing the energy efficiency in coal-fired boilers and treating coal prior to combustion, for instance by washing and briquetting. Even without considering environmental benefits, our study showed that three of the six alternatives were win-win options. When ancillary benefits were taken into account, we found that all of the measures had negative net costs. Our findings demonstrate that an integrated assessment, that is, an assessment that takes into account the totality of environmental and developmental concerns, is crucial for determining the total cost-effectiveness of climate measures and may be a key to increasing the interest of developing countries in greenhouse gas mitigation.

With respect to defining the regulatory framework of the CDM, our study also shows that economic incentives alone may not be sufficient to attract developing countries to CDM projects because of their different political priorities and the prohibitively high transaction costs. In this context, awareness of the co-benefits of climate measures may increase the attractiveness of GHG mitigation in a way that is constructive both to developing countries (seeking to improve the local and regional environment) and to companies in developed countries (seeking to demonstrate “Corporate Social Responsibility” as well as gaining GHG credits).

Our study also demonstrates that the additional requirement – that is, the requirement that a CDM project should not be viable in the absence of CDM financing – is a double-edged sword. While this requirement may certainly prevent giving industrialized countries credit for fake emission reductions, it may limit possibilities for funding some of the most locally and regionally advantageous projects under CDM. In our view, it is important that measures related to clean coal technologies and energy efficiency, such as those focused on in this study, are considered eligible under CDM in part because of the substantial local co-benefits. This is in accordance with the opinion expressed by the president of COP6, Jan Pronk, that renewable energy and energy efficiency improvements should be given priority under CDM.

China is the world's largest consumer of coal, a fossil fuel that emits greenhouse gases. The cities of China are among the world's most polluted. Measures aimed at reducing air pollution also contribute to reducing greenhouse gases, demonstrating the importance of looking at environmental problems in a greater context.



Photo: Thorjörn Larssen

Making atmospheric modeling a two-way street:

Adding a chemistry scheme

Modeling changes in the atmosphere is one of the most important ways we can learn about changes in global and regional temperatures. Until now, global climate models (GCM) have been based on pre-determined data on concentrations of various chemically active gases in the atmosphere (e.g. ozone, methane). This means that the models could say something about the climate on the basis of given concentrations of these gases, but there was no feedback mechanism, no way of being able to say something about how climate change would affect the distribution of these gases and thus their impact on climate.

In cooperation with the Department of Geophysics at the University of Oslo, CICERO has developed a new simple chemistry scheme to be used in the next generation of (GCM). This new chemistry scheme introduces a new feedback component into the model and allows researchers to measure the sensitivity of the climate system on a more regional basis.

This is made possible because the introduction of a chemistry scheme gives a more detailed picture of the energy balance (the distribution of heat and cooling) in the atmosphere and oceans, which governs the weather and ocean current systems. The energy balance is, in turn, related to such conditions as the earth's reflective capacity (albedo) and the distribution of greenhouse gases and particles. Changes in chemically active gases with short lifetimes (e.g., ozone) will affect the energy balance differently than will changes in CO₂ or other well-mixed gases, and in more regional terms. This kind of regional change in the energy balance is expected to have a different impact on weather systems than an equivalent change on a global scale. A change in weather systems is likely to affect turnover and transport of chemically active gases, with the accompanying effect on the energy balance. Thus, we are talking about a coupled system that requires coupled models to study it in detail.

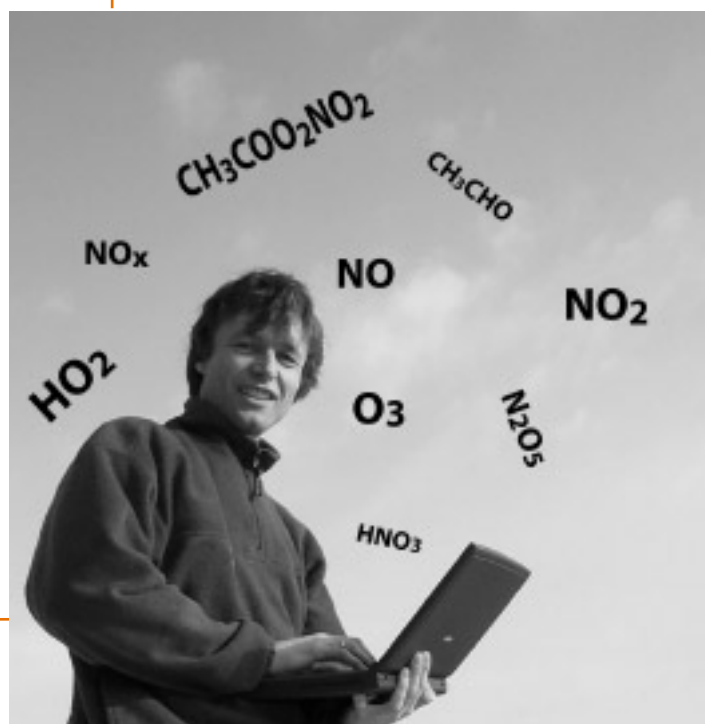
The new simplified chemistry scheme is based on a more complex scheme described by Berntsen and Isaksen (1997). It has been tested in a box model (which ignores transport) so that a large number of calculations can be made rapidly. The

simplified scheme has also been included in a global 3-D chemical transport model (Oslo-CTM2 model [Sundet, 1997]). Several tests have been performed, and the scheme has been designed with respect to which chemical components must be included to achieve the desired precision in the calculated energy balance.

The simplified scheme has also been included in a comprehensive atmospheric GCM (CCM3 model, Community Climate Model version 3) at State University, New York (SUNY, in Albany). The first test runs are underway, and the results for the first 13 months look promising, with a reasonable distribution of ozone and other key chemical components in the troposphere.

Senior Research Fellow Terje Berntsen has helped develop a new simple chemistry scheme to be used in the next generation of global climate models.

Photo: Jan S. Fuglestedt



Information

There has been a marked increase in information activities at CICERO every year since 1997, and this trend continued in 2000. The goal of the information department is to act proactively in relation to the media and the general public. In fall 2000, demand for CICERO's information activity was particularly high, largely due to the climate negotiations in The Hague and the unusual weather conditions in Norway. CICERO appeared frequently in the media and held a number of presentations for a wide range of audiences.

In its ninth volume, CICERO's climate magazine, *Cicerone*, was given a new look and issued six times in 2000. The number of pages per issue increased from previous years, and an English version was introduced on the Internet. *Cicerone* received over 300 new subscribers in 2000, and is now distributed free-of-charge to over 2600 subscribers and has a total print-run of 3000. Most of the subscribers are in the ministries, directorates, business and industry, research institutions, and upper secondary schools. The articles have often been referred to in the media, and one RegClim article in *Cicerone* on the thinning of the Arctic ice received international recognition.

The **Climate Forum** met four times in 2000. The meetings were introduced by, among others, the Norwegian environmental minister. The Forum assembles participants from the public and private sectors and central research communities in Norway. The aim is to disseminate knowledge about the latest developments in the issue area of climate and to instigate a dialog about important areas of climate policy between all actors. Fifteen commercial enterprises and governmental institutions were members of the Forum in 2000.



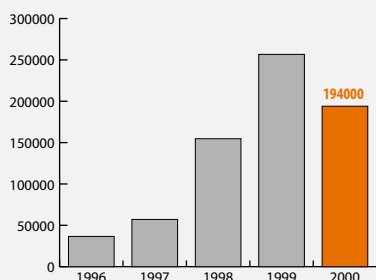
CICERO's Web pages are updated daily and since December 2000 have undergone a dramatic restructuring. The number of hits on CICERO's Internet pages has increased from 36,609 in 1996, to 57,121 in 1997, to 154,690 in 1998, and to 256,682 in 1999. We registered a drop to about 194,000 in 2000, particularly in the first period. These numbers are somewhat uncertain, however, because we are now using a different statistical system.

In 2000 a **new information brochure** was prepared. Other information activities include expansion of information directed at schools, and increased quality assurance of English publications.

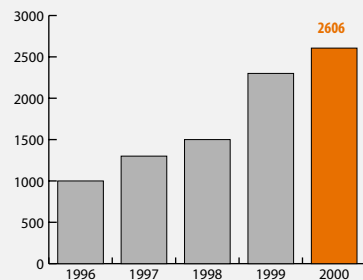
In connection with preparing its annual report, the Joint Committee on Climate Research, in which CICERO participates, has decided to recommend increased investment in systematic knowledge dissemination from Norwegian climate research for a trial period. CICERO will be in a strong

position as coordinator and implementing institution should this project be realized. This would entail a significant challenge for CICERO in the coming period.

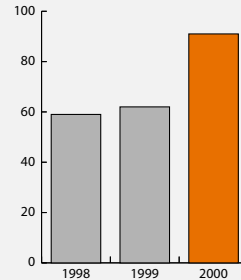
Visits to the CICERO web 1996-2000



Subscribers to Cicerone



Media coverage



Cooperation

CICERO has a broad network of contacts in research communities both nationally and internationally.

Our wide-ranging international network is both of a formal and informal nature. It includes participation in the Climate Change Knowledge Network, coordinated by the International Institute for Sustainable Development (IISD) in Canada, which has provided the venue for a concrete joint project with Tata Energy Research Institute (TERI) in India in 2000.

CICERO's location at the University of Oslo and its close cooperation with relevant institutions is essential in a field where there is such a close tie between basic and applied research. CICERO's association with the University is strategically important and mutually beneficial. Cooperation with the University of Oslo is formalized through framework, operations, and leasing agreements. CICERO takes on as many teaching and graduate-student advising assignments as possible at the University in cooperation with the relevant departments. In 2000, CICERO's staff included four professors from the University in part-time positions. CICERO's research fellows participate in the formal post-graduate instruction at the University. Two of CICERO's research fellows defended their doctoral theses in 1999. CICERO currently has two doctoral students, both of whom conducted research in the United States in 2000.

In Norway, CICERO cooperates not only with the University of Oslo and its institutions, but also with other research communities. In this way, CICERO and the other research communities can draw upon each other's international contacts. Because CICERO was originally established by the Norwegian government to help coordinate climate-policy research in Norway, CICERO was given the main responsibility for coordinating the research program "Norwegian Energy and Environmental Policy: Constraints, Opportunities and Instruments" (SAMRAM) in the Research Council of Norway. Likewise, in 2000, CICERO was given the responsibility to coordinate SAMRAM's follow-up program, "Energy, Environment, and Technology: Studies from the Social Sciences" (SAMSTEMT) for the

period 2001–2005. CICERO also acts as secretariat for the Research Council's Joint Committee on Climate Research.

CICERO has also continued to cooperate with the Fritjof Nansen Institute in 2000 through the support of earmarked funds set aside by the Research Council for joint ventures between foreign policy institutions in the Oslo area.

CICERO is represented in a number of boards of directors and other activities in the Research Council of Norway, and participates in several boards of directors, committees, panels, and working groups both nationally and internationally, and in both the public and private sectors. One noteworthy assignment in this respect in 2000 was our work with the Swedish group of experts that prepared a report on the flexibility mechanisms in climate policy, and leadership of an international committee that evaluated the Environment and Resource Group at IIASA.

In 2000, CICERO also contributed to a number of conferences and working groups and participated actively in evaluations of researchers and examinations at institutes of higher learning.

Key Financial Figures

CICERO's accounts for 2000 show a deficit of NOK 778,732 and at the close of 2000 CICERO's net worth was NOK 7,807,584. The deficit will be covered through earned equity capital, which after covering the loss will be NOK 7,757,584.

The basic government grant from the Research Council of Norway made up 36% of CICERO's income in 2000. Comparable figures for previous years are: 1993 (73%), 1994 (49%), 1995 (49%), 1996 (45%), 1997 (35%), 1998 (33.8%) and 1999 (30.7%). The relatively high share of income from the basic government grant in 2000 is a result of the reduced total income. In 2000, the operating result was NOK -1.493.052, while in 1999 it was NOK 299.646.

While the financial and operating results for CICERO in 1999 were among the best since the Center began normal operations, the results for 2000 were the poorest. Prior to 2000, CICERO had not had a negative operating result since 1995. The poor result in 2000 is primarily due to a more limited access to project funding and lack of funding for information activities. The financial difficulties at the beginning of the year were more or less expected, but the drop in income has been somewhat larger than anticipated – at the same time as some individual expenses, such as rent, have increased far more

than expected. The drop in income is somewhat related to a generational transition in research programs at the Research Council of Norway. For this reason, we expect that the demand for CICERO's services in 2001 will also lie somewhat below 1998 and 1999 levels. This makes it critical for CICERO to ensure a reliable and long-term financing of information activities during the course of 2001.

The key financial figures show that CICERO has a solid financial basis with good liquidity and financial soundness. The current liquidity ratio is 2.28 (as compared to 2.12 in 1999), and its net worth at the beginning of 2001 accounted for 74.10% of the liability and shareholder's equity (as compared to 70.66% in 2000). The Board of Directors believes that CICERO has a future income potential that clearly exceeds that which was attained in 2000. The Board feels that the negative result in 2000 is not a sign of a lasting weakened financial state at CICERO.

Income from international clients in 2000 made up 10% of total income (as compared to 16% in 1999). With respect to domestic sources of income, the various ministries accounted for 12% (compared to 11% in 1999) and the Research Council of Norway accounted for 35% (compared to 31% in 1999).

Figure 1.

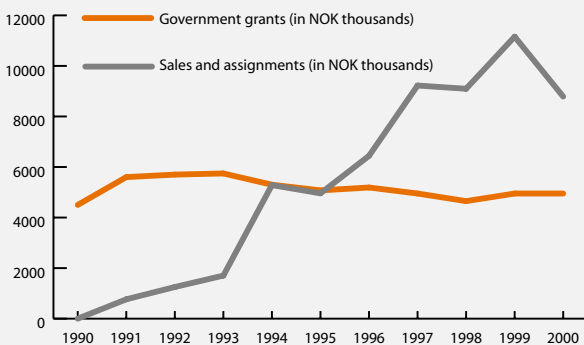
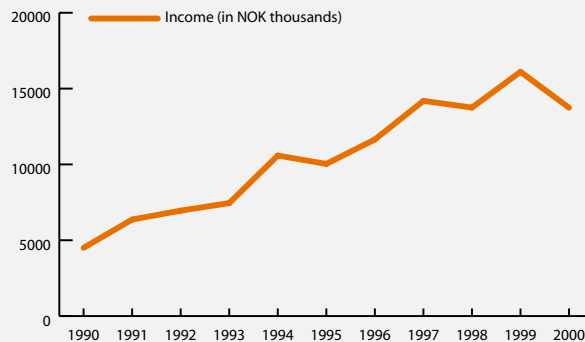


Figure 2.



Evaluation

In 2000, CICERO underwent an evaluation by the Research Council of Norway. The evaluation committee comprised the following members:

- ▶ *Professor Peringe Grennfelt* from the Swedish Environmental Institute (IVL), Göteborg, (chair)
- ▶ *Professor Peter Bohm*, Department of Economics, University of Stockholm
- ▶ *Professor Eva Selin Lindgren*, Department of Environmental Physics, Göteborg University
- ▶ *Professor Per Kristen Mydske*, Department of Political Science, University of Oslo
- ▶ *Adviser Anne Beate Tangen*, Ministry of the Environment

The result of the evaluation has been made available in the Norwegian report “CICERO Senter for klimaforskning - En evaluering” (<http://www.cicero.uio.no/publications/eval/eval2000.pdf>), dated September 2000. In our view, the report provides a very thorough review of CICERO’s activities and organization.

Positive feedback

Overall, we are very satisfied with the results of the evaluation. Some of the committee’s conclusions include:

- ▶ CICERO functions as a national competence center by (i) being able to address and evaluate key climate issues by drawing on both its own expertise and the expertise of its network, and (ii) providing comprehensive and valuable information services that cover the research and reporting activities of both CICERO and other institutions.
- ▶ The research at CICERO is of high quality, and its activities are held in high regard internationally.
- ▶ Through its sponsorship of doctoral students, CICERO has played a key role in building up interdisciplinary climate scholarship in Norway.

- ▶ Clients and end-users appear to be very satisfied with both the quality and the relevance of the research, project, and information activities.

And with respect to CICERO’s information activities, the committee recommends:

- ▶ Information activities should be maintained at least at current levels.

CICERO is, of course, prepared to follow through on this recommendation when financing of this activity becomes available.

Some criticism

No evaluation is entirely free of criticism, and the committee comments with respect to the interdisciplinary nature of CICERO that:

- ▶ The arguments that justified establishing CICERO are equally relevant today. Nevertheless, it takes a relatively long time to become established within such a complex issue area with widely diverse areas of expertise and research cultures, and it appears that the full value of having access to several fields of expertise has not yet been fully realized.

True interdisciplinary research is exceptionally difficult to achieve. CICERO has come far, but we agree with the committee that we still have a way to go before we realize our full potential in this respect.

Throughout CICERO’s existence, we have cooperated closely with the University of Oslo. The committee questions whether this could constrain our work:

- ▶ The areas of research correspond highly with the research areas of the cooperating institutions at the University of Oslo. This, in combination with the high degree of dependency on prominent researchers at the

university, could constrain the further development of CICERO's strategic research areas and make it difficult for CICERO to establish its own identity.

- ▶ CICERO should give priority to research that is central to its mandate and not covered entirely or in part by other departments or institutions.

CICERO has avoided direct competition with other Norwegian research communities. Instead we have emphasized entering into fruitful joint efforts with our most important "competitors." This applies not least to our relationship with the University of Oslo, where extensive use of senior research fellowships has been beneficial for both parties. It is reasonable to assume that such fellowships have encouraged university employees to spend more time on climate research than their part-time positions at CICERO would indicate, at the same time as CICERO benefits from scholarly advice from highly competent people. We find it difficult how this has constrained the development of CICERO's own identity, which is largely connected to its interdisciplinary profile. The benefit of interdisciplinary expertise is manifested in, among other things, the frequent use of CICERO in various public and private reporting contexts, and in work with research strategy issues. We dare say that it is precisely our interdisciplinary nature that sets CICERO apart from other institutions.

Of the other points where the committee takes a critical view, we can mention the following:

- ▶ CICERO's three main disciplinary areas – natural science, social science, and economics – can serve to limit the type and scope of research questions that can be addressed, and an optimal balance has not yet been achieved between in-house and external competence in interdisciplinary projects. CICERO's strategy document and plans of action provide, however, a good foundation for more clearly delimiting CICERO's own core activities and areas where CICERO should draw on outside expertise.

We interpret this to mean that CICERO has not yet realized its full potential as a network center. We are in agreement with this conclusion, and will therefore strive to develop this aspect of CICERO in the future by bringing in more outside expertise to assist in specific projects and by generally augmenting the network element in our project applications.

Recommendations

The committee concluded its report with some recommendations to outside parties:

- ▶ It should be considered how CICERO can be strengthened in terms of both resources and organization. In this context, the optimality of CICERO's current association with the University of Oslo should be examined.
- ▶ It should be looked at whether transferring the basic grant from the Ministry of Church, Education, and Research to the Ministry of the Environment, and from there channeling it through the research division Environment and Development at the Research Council of Norway would be beneficial.

CICERO believes that this would be a natural reorganization and will strive to implement this change, preferably in connection with an improvement in CICERO's budgetary framework.

Staff

In 2000 there were 33 persons working in connection with CICERO (the same as in 1999). Of these people, 31 were employed (the same as in 1999), with positions totaling 23.4 full-time equivalents (FTEs) (compared to 22.4 in 1999). The number of research FTEs was 16.9 (compared to 17.1 in 1999). At the close of 2000, CICERO had 30 employees (compared to 27 in 1999).



Organization Chart



Director and Staff

Director Knut H. Alfsen

Dahle, Øystein, Adviser (20%)

Information

Borghild Krokan, Information Director
Nygaard, Lynn P., Information Officer (80%)



Administration

Assistant Director Kjell Arne Hagen

Barosen, Marit, Senior Accountant
Brattland, Jane, Office Assistant
Rykkeld, Hans Arne, Alternative National Service Employee (until 31 March 2000)
Rørvik, Frode, IT Officer
Veiby, Tone, Administration Officer



Program 1

Research Director Jan S. Fuglestad

Aunan, Kristin, Senior Research Fellow
Berntsen, Terje, Senior Research Fellow (80%)
Godal, Odd, Research Assistant (20%)
Isaksen Ivar S., Professor (20%)
O'Brien, Karen, Senior Research Fellow
Næss, Lars Otto (on leave)
Romstad, Bård E.W., Project Assistant
Seip, Hans Martin, Professor (20%)
Skodvin, Tora, Research Fellow
Sygna, Linda, Research Assistant
Aaheim, Asbjørn, Senior Research Fellow



Program 2

Research Director Asbjørn Torvanger

Areklett, Ivar (from 5 July)
Bretteville, Camilla, Ph.D. Student
Gan, Lin, Senior Research Fellow (50%)
Hagem, Cathrine, Research Fellow (90%)
Holtmark, Bjart J., Senior Research Fellow (until 10 March)
Hovi, Jon, Professor (20%)
Kasa, Sjur, Research Fellow (until 30 April)
Kolshus, Hans H., Research Assistant
Malvik, Henrik, Research Assistant (until 18 August)
Ortiz, Rosalba, Visiting Researcher (from 15 January 2000)
Søfting, Guri Bang, Ph.D. Student
Underdal, Arild, Professor (20%)
Vevatne, Jonas, Research Assistant (from 29 May)
Westskog, Hege, Senior Research Fellow (from 1 September), 60%

Board of Directors

In 1999, the Ministry of the Environment appointed a Board of Directors for CICERO for the term 30 June 1999 to 30 June 2001. Knut N. Kjær, Executive Director of Norges Bank Investment Management, was re-appointed as chair, and Faculty Director Tove Kristin Karlsen from the Faculty of Social Science, University of Oslo, was appointed vice-chair. For the current period, the members of the Board are as follows: Professors Jon Vislie from the Department of Economics and Trond Iversen from the Department of Geophysics, both from the University of Oslo, researcher Inger Hanssen-Bauer

from the Norwegian Meteorological Institute, Managing Director Øivind Lund from ABB, adviser Eli Marie Åsen from the Ministry of the Environment, and employee representative Tora Skodvin. Professor Raino Malnes from the Department of Political Science, University of Oslo, and Senior Executive Officer Bente Lise Dagenborg, Ministry of Agriculture participate regularly as alternates.

In 2000 the Board had five meetings, one of which was combined with a scholarly seminar that included some of CICERO's staff members.

CICERO Publications

Policy Notes

Policy Note 2000-01: **Kasa, Sjur**, *Avgifter som virkemiddel i klimapolitikken i noen europeiske land*

Policy Note 2000-02: **Kolshus, Hans H.**, *SRES utslippsscenerier - En gjennomgang av bakgrunn, drivkrefter og resultater*

Policy Note 2000-03: **Kasa, Sjur**, *Explaining emission tax exemptions for heavy industries: A comparison of Norway, Denmark and the Netherlands*

Reports

Report 2000-01: **Alfsen, Knut H., Jan S. Fuglestedt, Hans Martin Seip and Tora Skodvin**, *Climate change: Scientific background and process*

Report 2000-02: **O'Brien, Karen (ed.)**, *Developing strategies for climate change: The UNEP country studies on climate change*

impacts and adaptations assessment

Report 2000-03: **O'Brien, Karen, Linda Sygna, Lars Otto Næss, Robert Kingamkono and Ben Hochobeb**, *Is information enough?*

User responses to seasonal climate forecasts in Southern Africa

Report 2000-04: **Aaheim, H. Asbjørn and Linda Sygna**, *Economic impacts of climate change on tuna fisheries in Fiji Islands and Kiribati*

Report 2000-06: **Bretteville, Camilla and Guri Bang Søfting**, *From taxes to permits? The Norwegian climate policy debate*

Report 2000-05: **Alfsen, Knut H., Hans H. Kolshus and Asbjørn Torvanger**, *Klimaendringer og klimapolitikk*



Working Papers

Working Paper 2000-01: **Torvanger, Asbjørn and Lasse Ringius**, *Burden Differentiation: Criteria for evaluation and development of burden sharing rules*

Working Paper 2000-02: **J. C. Jansen, J. J. Battjes, J. Sijm, C. Volkers and J. R. Ybema**, *A flexible sector-based framework for negotiating global rules for national greenhouse gas emission mitigation targets*. (Published at ECN, The Netherlands)

Working Paper 2000-03: **Gan, Lin, Gu Shuhua, Liu Wenqiang and Zhang Xiliang**, *From non-market support to cost-competitive incentives: Wind energy commercialization in China*

Working Paper 2000-04: **Godal, Odd, Linda Sygna, Jan S. Fuglestedt and Terje Berntsen**, *Estimates of future climate based on SRES emission scenarios*

Working Paper 2000-05: **Aaheim, H. Asbjørn**, *Adjustment costs for investments in the abatement of climate change under uncertainty*

Working Paper 2000-06: **Søfting, Guri Bang**, *Climate change policymaking: Three explanatory models*

Working Paper 2000-07: **Aunan, Kristin, Jinghua Fang, Guanghai Li, Hans Martin Seip and Haakon Vennemo**, *Co-benefits from CO₂-emission reduction measures in Shanxi, China: A first assessment*

Working Paper 2000-08: **Hagem, Cathrine and Hege Westskog**, *National climate policy, firm survival, and investments*

Working Paper 2000-09: **Kolshus, Hans H., Asbjørn Torvanger and Henrik Malvik**, *Climate policy futures, energy markets, and technology: Implications for Norway*

Working Paper 2000-10: **Holtmark, Bjart and Ottar Mæstad**, *The Kyoto Protocol and the fossil fuel markets under different emission trading regimes*

External Publications

Publications with referee

Aaheim, H. Asbjørn, Kristin Aunan and Hans Martin Seip, 2000. The value of the environment: Is it a matter of approach? *Integrated Assessment*, (1): pp. 49-61.

Aunan, Kristin, Terje Berntsen and Hans Martin Seip, 2000. Surface ozone in China and its possible impact on agricultural crop yields. *Ambio*, 29: pp. 294-301.

Fuglestedt, Jan S., Terje Berntsen, Odd Godal and Tora Skodvin, 2000. Climate implications of GWP-based reductions in greenhouse gas emissions. *Geophysical Research Letters*, 27 (3): pp. 409-412.

Karlsdottir, S. and Ivar S. A. Isaksen, 2000. Changing methane lifetime: Cause for reduced growth. *Geophysical Research Letters*, (27): pp. 93-96.

Kasa, Sjur and Henrik Malvik, 2000. Makt, miljøpolitikk, organiserte industriinteresser og partistrategier: En analyse av de politiske barrierene mot en utvidelse av CO₂-avgiften i Norge. *Tidsskrift for Samfunnsforskning*.

O'Brien, Karen, 2000. Upscaling tropical deforestation: Implications for climate change. *Climatic Change*, 44: pp. 311-329.

O'Brien, Karen and R. Leichenko, 2000. Double exposure: Assessing the impacts of climate change within the context of economic globalization. *Global Environmental Change*, 10 (3): pp. 221-232.

Skodvin, Tora, 2000. Revised rules of procedure for the IPCC process. *Climatic Change*, 46 (4): pp. 409-415.

Veatne, Jonas, 2000. Skilpadder og tåregass: Miljøbevegelsen versus WTO. *Internasjonal Politikk*, 58 (4): pp. 527-557.

Publications with referee (submitted, accepted or in press)

Berntsen, Terje, Ivar S. A. Isaksen, Gunnar Myhre and Frode Stordal, 2000. Time evolution of tropospheric ozone and its radiative forcing. *Journal of Geophysical Research*, (In Press).

Godal, Odd and Jan S. Fuglestedt, 2001. Testing 100-year Global Warming Potentials: Impacts on compliance costs and abatement profile. *Climatic Change*, (Submitted).

Gan, Lin, Liu Wenqiang, Zhang Xiliang and Gu Shuhua, 2000. From non-market support to cost-competitive incentives: Wind energy commercialization in China. *World Development*, (Submitted).

Hagem, Cathrine and Hege Westskog, 2000. National climate policy, firm survival, and investment. *Environmental and Resource Economics*, (Submitted).

Jonson, J. E., A. Kylling, Terje Berntsen, Ivar S. A. Isaksen, C.S. Zerefos and K. Kourtidis, 2000. Chemical effects of UV fluctuations inferred from total ozone and tropospheric aerosol variations. *Journal of Geophysical Research*, (In Press).

Kasa, Sjur, 2000. Policy networks as barriers to green tax reform: The case of CO₂-taxes in Norway. *Environmental Politics*, (Accepted).

Ringius, Lasse, 2000. The European Community and climate protection: What's behind the empty rhetoric?. *Journal of Common Market Studies*, (Submitted).

Schumann, U., H. Schlager, F. Arnold, J. Ovarlez, H. Kelder, Øystein Hov, G. Hayman, Ivar S. A. Isaksen, J. Staehelin and P.D.

Whitefield, 2000. Pollution from aircraft emissions in the North Atlantic flight corridor: Overview on the POLINAT projects. *Journal of Geophysical Research*, (In Press).

Skjærseth, Jon Birger and Tora Skodvin, 2000. Climate change and the oil Industry: Common problem, different strategies. *Global Environmental Politics*, (Submitted).

Sygna, Linda, Jan S. Fuglestedt and H. Asbjørn Aaheim, 2000. The adequacy of GWPs as indicators of damage costs incurred by global warming. *Mitigation and Adaption Strategies for Global Change*, (Submitted).

Other publications

Aaheim, H. Asbjørn, 2000. Bruddet i klimaforhandlingene og Norges dilemma. *Klassekampen* (12/12/2000). Oslo, Norway.

Aaheim, H. Asbjørn, 2000. Kraftdebatt på feil spor. *Dagbladet* (05/04/2000). Oslo, Norway.

Aaheim, H. Asbjørn, 2000. Norsk klimapolitikk i nedover-Bakke? *Sosialøkonomen*.

Aaheim, H. Asbjørn, 2000. Usikkerheten om klimaet. *Dagbladet* (02/08/2000). Oslo, Norway.

Benestad, R.E., G. Bjørnbæk, Ingolf Kanestrøm, Gunnar Myhre, Jostein K. Sundet, Frode Stordal and Jan S. Fuglestedt, 2000. Ingen spåmenn i drivhus. *Teknisk Ukeblad Interaktiv*.

Hagem, Cathrine, 2000. Gratiskvoter er ikke gratis. *Dagens Næringsliv* (24/04/2000). Oslo, Norway.

Malvik, Henrik and Hans H. Kolshus, 2000. På villspor i klimadebatten. *Dagbladet* (28/06/2000). Oslo, Norway.

O'Brien, Karen, Jan S. Fuglestedt and Knut H. Alfsen, 2000. Vinnere og tapere i det norske drivhus. *Dagens Næringsliv* (19/04/2000). Oslo, Norway.

Seip, Hans Martin, H. Asbjørn Aaheim and Kristin Aunan, 2000. Climate change and local pollution effects - Importance of an integrated mitigation approach. Business Briefing: Global Environmental Industry. *World Market Series*. World Markets Research Centre, Academic House. London, England. 10-13 pp.

Skodvin, Tora and Jon Birger Skjærseth, 2000. Er Kyoto-avtalen død? *Dagbladet* (07/04/2000). Oslo, Norway.

Skodvin, Tora and Jon Birger Skjærseth, 2000. Houston, vi har et klimaproblem! *Dagbladet* (22/06/2000). Oslo, Norway.

Vennemo, Haakon, Hans Martin Seip, Kristin Aunan and John Magne Skjelvik, 2000. Den grønne utviklingsmekanismen. *Dagens Næringsliv* (18/08/2000). Oslo, Norway.

Papers and posters

Aaheim, H. Asbjørn, 2000. Adjustment costs for the abatement of climate change under uncertainty. Forskerkonferansen for økonomer, Bergen, Norway.

Aaheim, H. Asbjørn, 2000. Commentary on ancillary benefits of climate measures. IPCC Workshop, Washington, DC..

Alfsen, Knut H., 2000. India in the 21st century. TERI Silver Jubilee Conference, 19.02.00, New Dehli, India.

Alfsen, Knut H., 2000. Kvotehandling her og der. Høringskonferanse om kvotehandling, 29.03.00, Oslo, Norway.

Alfsen, Knut H., 2000. Kyotoavtalen og norsk næringsliv. Oppsummering og tanker om hvor vi går videre. NHO/SFT-seminar, 03.02.00, Oslo, Norway.

Alfsen, Knut H., 2000. The Kyoto protocol and its impacts on oil markets to 2020. UNFCCC Workshop on articles 4.8/4.9, 13.03.00, Bonn, Germany.

Aunan, Kristin, 2000. Co-benefits from CO₂-emission reduction

measures in Shanxi, China. Foredrag for en gruppe fra Tsinghua University (Beijing), Handelshøyskolen BI, Sandvika.

Aunan, Kristin, H. Asbjørn Aaheim and Hans Martin Seip, 2000. Reduced damage to health and environment from energy saving in Hungary. Assessing the ancillary benefits and costs of greenhouse gas mitigation strategies. Ancillary benefits and costs of greenhouse gas mitigation. IPCC Workshop, 27-29 March 2000. OECD, Paris. Washington, DC..

Aunan, Kristin, Jinghua Fang, Haakon Vennemo, K.A. Oye, Guanghai Li and Hans Martin Seip, 2000. Co-benefits from CO₂-emission reduction measures in Shanxi, China: Their importance in context of CDM. PACE 2000. Policy Reform and the Environment in China, Conference organized by PACE (Professional Association for China's Environment). World Bank, Washington DC. 22 pp.

Aunan, Kristin, Jinghua Fang, Haakon Vennemo, K.A. Oye, Guanghai Li and Hans Martin Seip, 2000. Co-benefits of climate policy: Lessons learned from a study in Shanxi. Conference organized by the China Meteorological Administration, Beijing, China.

Aunan, Kristin, Karen O'Brien and Bård Romstad, 2000. Implications of sea-level rise for Norway. Proceedings from the SURVAS Workshop. Workshop on European Vulnerability to impacts of sea-level rise, 19-21 June 2000. Hamburg, Germany.

Kolshus, Hans H., 2000. Treplanting som klimapolitisk virkemiddel. Cafe Nordsør, Studentersamfundet, Trondheim.

Seip, Hans Martin, 2000. Clean development mechanisms in the Kyoto Protocol. Workshop on environmental and demographic issues, 15.05.00, Departement of Economics, University of Oslo.

Seip, Hans Martin, 2000. Climate change, acid deposition, local health effects: The need for an integrated approach. 10.10.00, Det Norske Videnskaps-Akademi, Oslo.

Seip, Hans Martin, 2000. Climate change, acid precipitation and local health effects: The need for an integrated approach. 11.02.00, NTNU, Trondheim.

Seip, Hans Martin, 2000. Integrated approach to mitigation measures. 06.04.00, Stockholm Environment Institute, York, UK.

Skjærseth, Jon Birger and Tora Skodvin, 2000. Climate change and the oil Industry: Common problem, different strategies. Sixth Session of the Conference of the Parties to the Climate Convention (COP 6), 23.11.00, The Hague, Netherlands.

Torvanger, Asbjørn, 2000. Drivhuseffekten - eit heitt tema. Klimapolitikk og økonomi. Klimaseminar, Statens forurensingstilsyn. 29-30 Mai, 2000, Oslo, Norway.

Torvanger, Asbjørn, 2000. Overview of fairness principles. COP-6 side event "Differentiation of Future Commitments - Principles and Consequences", 18.11.00, The Hague, Netherlands.

Torvanger, Asbjørn, 2000. Status for kvotehandling i dag og klimaforhandlingane og følger for skogbruket. Institutt for skogfag, NLH, 10.11.00, Ås, Norway.

Torvanger, Asbjørn and Kjell Arne Brekke, 2000. Uvisse og drivhuseffekten. SAMRAM-seminar, 27.01.2000, Oslo, Norway.

Presentations

Aaheim, H. Asbjørn, 2000. Klimapolitikk og lokale problemer. Foredrag for Oslo kommune, Oslo Rådhus.

Aaheim, H. Asbjørn, 2000. The Kyoto Protocol and the oil market. COP6, The Hague.

Aaheim, H. Asbjørn, 2000. Virkninger av klimaendringer i Norge. Skolemøte ved Fagerborg videregående skole, Fagerborg.

Aaheim, H. Asbjørn, 2000. Økonomiske virkninger av klimatiltak. CICERO-seminar "Virkninger av klimaendringer" 30-31 oktober, Oslo, Norway.

Alfsen, Knut H., 2000. Energipolitiske utfordringer som følge av klimaendringer. Senterpartiets landsmøte, Seljord.

Alfsen, Knut H., 2000. Innledning. Klimaforum: Klimapolitikk, mål og virkemidler, Oslo, Norway.

Alfsen, Knut H., 2000. Klimaendringer. Foredrag for Grefsen-Kjellsås seniorakademi, Engebråten skole, Oslo, Norway.

Alfsen, Knut H., 2000. Klimaforskning og -politikk. Foredrag for sjefsmøtet hos Birka Energi, 10.04.00, Sunne, Sweden.

Alfsen, Knut H., 2000. Klimapolitikk i Norden. Klimaalliansen, 09.05.00, Oslo, Norway.

Alfsen, Knut H., 2000. Klimaproblematikkens og Kyotoprotokollens føringer på arbeidet i regionen. Arbeidsseminar hos Kommunenes sentralforbund, Oslo, Norway.

Alfsen, Knut H., 2000. Presentasjon av CICERO som organisasjonsmodell. Workshop on Austrian Council for Climate Change, 11.05.00, Wien, Austria.

Alfsen, Knut H., 2000. Virkninger av klimaendringer i våre områder. Plenumsforelesning i Polyteknisk forening, Oslo, Norway.

Aunan, Kristin, 2000. Sammenhengen mellom ulike miljøproblemer - felles årsaker, felles løsninger? Faglig-pedagogisk dag, Universitetet i Oslo.

Fuglestad, Jan S., 2000. Drivhuseffekten - et hett tema. Det naturvitenskapelige grunnlaget. Klimaseminar, Statens forurensingstilsyn. 29-30 Mai, 2000, Oslo, Norway.

Seip, Hans Martin, 2000. Mitt liv som miljøforsker. Møte om KUFs miljøhandlingsplan, Oslo, Norway.

Sygna, Linda, 2000. Klimaendringer. Åpent debattmøte om klima- og energiplan for Sarpsborg kommune, Sarpsborg.

Sygna, Linda, 2000. Sosioøkonomiske virkninger av klimaendringer i Norge. CICERO-seminar "Virkninger av klimaendringer" 30-31 oktober, Oslo, Norway.

Sygna, Linda, 2000. Verknader av klimaendringer. Fylkesmannen i Sogn og Fjordane, Landbruksavdelinga. Sogndal.

Torvanger, Asbjørn, 2000. Er det godt eller dårlig klima for Kyotoprotokollen? 15.12.00, Majorstua Rotary, Oslo.

Torvanger, Asbjørn, 2000. Siste nytt frå klimaforhandlingane og om eit norsk system for handel med klimagasskvotar. Fagleg-pedagogisk dag, Universitetet i Oslo, 4 januar 2000, Oslo, Norway.

Books and book chapters

Aaheim, H. Asbjørn and Camilla Bretteville, 2000. Emission reductions in EU countries. In: Gupta, Joyeeta and Michael Grubb (eds.), *Climate Change and European Leadership: A Sustainable Role for Europe?* Kluwer Academic Publishers. Dordrecht, The Netherlands. 221-239 pp.

Andresen, Steinar, Tora Skodvin, Arild Underdal and Jørgen Wettestad, 2000. *Science and politics in international environmental regimes: Between integrity and involvement.* Manchester University Press. Manchester, UK. 221 pp.

Bartsch, U., B. Muller and H. Asbjørn Aaheim (eds.), 2000. *Fossil fuels in a changing climate: Impacts of the Kyoto Protocol and developing country participation.* Oxford University Press. Oxford, England. 360 pp.

Gan, Lin, 2000. Energy development and environmental NGOs: The Asian perspective. In: Chasek, Pamela S. (ed.), *The global environment in the twenty-first century: Prospects for international cooperation.* United Nations University Press. Tokyo, Japan. 109-129 pp.

Gan, Lin, 2000. World Bank policies, energy conservation and emissions reduction. In: Cannon, Terry (ed.), *China's economic growth: The impact on regions, migration and the environment.*

Macmillan Press Ltd., London, England. 184-209 pp.

Hovi, Jon and Arild Underdal, 2000. *Internasjonalt samarbeid og internasjonal organisasjon.* Universitetsforlaget. Oslo, Norway. 216 pp.

Kolshus, Hans H., 2000. Technological progress. In: Bartsch, U., B. Muller and H. Asbjørn Aaheim (eds.), *Fossil Fuels in a Changing Climate. Impacts of the Kyoto Protocol and Developing Country Participation.* Oxford University Press. Oxford, England. 95-108 pp.

Skodvin, Tora, 2000. *Structure and agent in the scientific diplomacy of climate change: An empirical case study of science-policy interaction in the Intergovernmental Panel on Climate Change.* Kluwer Academic Publishers.

Underdal, Arild, 2000. Capacity for international environmental governance. In: Mez, Lutz and Helmut Weidner (eds.), *Umweltpolitik und Staatsversagen. Perspektiven und Grenzen der Umweltpolitikanalyse.* Edition Sigma. Berlin, Germany. 252-257 pp.

Underdal, Arild and Kenneth Hanf (eds.), 2000. *International environmental agreements and domestic politics: The case of acid rain.* Ashgate. Aldershot, UK. 384 pp.

Xiliang, Zhang, Lin Gan, Gu Shuhua and Liu Wenqiang, 2000. *Wind energy technology development and diffusion: A case study of Inner Mongolia, China. Global Technology Policy: Among and Within Nations.* Marcel Dekker Publishers. New York.

Styrets beretning

Innledning

CICERO Senter for klimaforskning ble opprettet ved Kongelig resolusjon av 27. april 1990 og feiret således sitt tiårsjubileum i fjor. Stiftelsens oppgave er å drive forskning, utredning, rådgivning og informasjon om klimarelaterte globale miljøspørsmål og internasjonal klimapolitikk med sikte på å framskaffe kunnskap som kan bidra til å løse det menneskeskapte klimaproblemet og å styrke det internasjonale klima-samarbeidet. CICERO er lokalisert i Oslo.

Kort om 2000

Styret ser tilbake med stor tilfredshet på flere faglige viktige hendelser i 2000:

- Mest sentral er kanskje den eksterne evalueringen i Forskningsrådets regi som ble gjennomført med meget positivt resultat for CICEROs vedkommende. Komitéen konkluderer blant annet med følgende:

- ▶ CICERO fungerer som et nasjonalt kompetansesenter ved at man gjennom egen kompetanse og ved å trekke på eget nettverk er i stand til å besvare og bedømme sentrale klimaspørsmål.
- ▶ Senteret driver en omfattende og verdifull informasjonsvirksomhet som dekker både egen og andres forsknings- og utredningsvirksomhet.
- ▶ Forskningen ved CICERO er av høy kvalitet, og høyt anerkjent internasjonalt. Både kunder og brukere synes godt fornøyd med både kvalitet og relevans av forsknings-, oppdrags- og informasjonsvirksomheten.

Komiteen påviser i tillegg en del forbedringspunkter ved CICERO, blant annet bør senterets nettverksaktivitet utvides.

Evalueringsrapporten har blitt fulgt opp med møter i Miljøverndepartementet og Norges forskningsråd som ga positive signaler om mulighetene for videre utvikling av CICERO som et forsknings- og informasjonssenter.

CICERO har også på andre måter styrket sin faglige posisjon, bl.a. ved at man i løpet av året fått to prosjekter finansiert fra Forskningsfondet og at man har kommet med i en spissforskningsgruppe som har fått støtte fra Norges forskningsråd til et 5-årig prosjekt kalt CHEM-CLIM.

CICERO har gjennom året vært svært synlig i mediabildet med regelmessige intervjuer i aviser, radio og TV. Videre ble vi valgt av Miljøverndepartementet til å legge fram vitenskapelige nyvinninger på et presseseminar i forkant av COP 6, og vi har deltatt med bakgrunnsforelesninger på landstyremøter til politiske partier, forelesninger på universiteter og høyskoler, fagkonferanser av ymse slag og i allmenndannende sammenhenger.

Omfanget av CICEROs informasjonsvirksomhet økte også i 2000, først og fremst gjennom publisering av flere sider i klimatidsskriftet *Cicerone*, hyppigere oppdateringer av nettsidene og utbedring av informasjonsmateriell. Omfanget av oversettelser til engelsk og internasjonal nettpublisering av utvalgte *Cicerone*-artikler har også økt betydelig. Samarbeidet med forskningsprosjektet RegClim ble videreført i 2000.

Bemanning

Bemanningen ved CICERO Senter for klimaforskning framgår av tabellen nedenfor.

Antall	2000	1999
Personer knyttet til senteret	33	33
Ansatte	33	31
Ansatte 31.12	30	27
Årsverk	23,5	22,4
Forskerårsverk	16,9	17,1

Fødsels- og pappapermisjoner i 2000 utgjorde 0,5 månedsverk.

I 2000 ble det utbetalt kr. 167.500 i samlet godtgjørelse til medlemmer og varamedlemmer av CICEROs styre, og totalt kr. 556.810 i lønn og godtgjørelse til direktør.

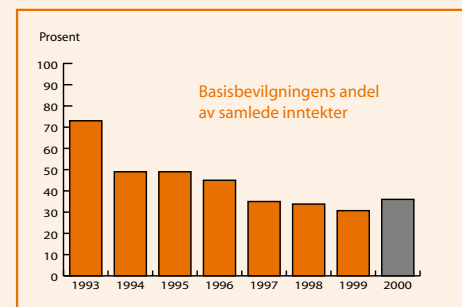
Økonomiske nøkkeltall

Regnskapet for 2000 er gjort opp med et underskudd på kr. 778.732. Egenkapitalen er ved utgangen av 2000 på kr. 7.807.584. Underskuddet i 2000 vil bli dekket av tidligere års opptjent egenkapital, som etter dekning av underskuddet vil være på kr. 7.757.584. Renter fra statsobligasjoner for perioden 01.06.99-31.05.00 er i sin helhet inntektsført i 2000. Dette skyldes feil i bokføringen i 1999.

Basisbevilgningens andel av samlede inntekter utgjorde i 2000 36%. Tilsvarende tall for tidligere år er vist i figuren. Informasjonsaktiviteten dekkes nesten i sin helhet over basisbevilgningen. En relativt høy basisbevilgningsandel i 2000 skyldes lave samlede inntekter. Driftsresultatet var i 2000 på kr. -1.493.052, mens det i 1999 var på kr. 299.646.

Mens årsresultat og driftsresultat i 1999 var blant de beste siden senteret kom i normal drift var 2000 det dårligste. CICERO har ikke hatt et negativt driftsresultat siden 1995. Årsaken til det dårlige resultatet for 2000 er først og fremst å finne i svakere oppdragstilgang, økte reisekostnader forbundet med prosjektene og manglende finansiering av informasjonsaktiviteten. Styret forutså i noen grad de økonomiske vanskelighetene ved inngangen til året, men bortfallet av inntekter har vært noe større enn forutsatt, samtidig som enkelte kostnadselementer som husleie er blitt vesentlig større enn forventet ved inngangen til året. Bortfallet av inntekter henger delvis sammen med et generasjonsskifte i Forskningsrådet når det gjelder forskningsprogrammer. Styret forventer blant annet av denne grunn at etterspørselen etter CICEROs tjenester også i 2001 vil ligge noe under nivået i 1998 og 1999. Dette gjør det kritisk for CICERO å sikre en påregnelig og langsiktig finansiering av informasjonsaktiviteten i løpet av 2001.

Nøkkeltallene viser at CICERO har en god økonomi med god likviditet og



soliditet. Likviditetsgraden er på 2,28 (i 1999 2,12) mens egenkapitalen ved inngangen til 2001 utgjorde 74,10% av gjeld og egenkapital (i 2000 70,66%). Styret mener at senteret har et framtidig inntekspotensiale som klart overstiger det som ble oppnådd i 2000. Det negative resultatet i 2000 er etter styrets oppfatning ikke uttrykk for en varig svekket økonomi ved CICERO. Styret legger derfor forutsetningen om fortsatt drift til grunn for regnskapsavleggelsen, men peker på at fortsatt drift ikke kan baseres på finansiering fra fondet.

Inntekter fra internasjonale oppdragsgivere utgjorde i 2000 10% av samlede inntekter (i 1999 16%). Fra nasjonale kilder utgjorde oppdragsinntekter fra de ulike departementene 12% (i 1999 11%) og fra Norges Forskningsråd 35% (i 1999 31%).

Forskning og publisering

De overordnede målene for CICEROs virksomhet går fram av mandatet for stiftelsen og CICEROs vedtekter. Dette rammeverket fastsetter i grove trekk hva som skal være CICEROs rolle som forskningsinstitusjon og informasjonsformidler.

Forskningsvirksomheten var i 2000, og vil i 2001 og kommende år, være mye bygget rundt tre hovedpilarer:

Pilar 1 har *Virkinger av klimaendringer og klimapolitikk* som tema og har som mål å kartlegge sårbarheten for klimaendringer og klimapolitiske tiltak i ulike deler av det norske samfunn. Virksomheten har klar karakter av nettverksbygging basert på egen forskning.

Pilar 2 har *Håndhevelse, verifisering og utforming av klimaavtaler* som tema og retter seg blant annet mot effektiv håndtering av avtaler under usikkerhet og mot u-landenes situasjon og forhold som har betydning for deres deltakelse i internasjonale klimaavtaler. Også denne pilaren spenner faglig vidt med bidrag fra alt fra naturvitere (verifikasjon av utslipp gjennom målinger og modellberegninger) til statsvitenskap. Igjen er nettverkselementet sentralt. Arbeidet bygger videre på modeller utviklet på CICERO i samarbeid med UiO.

Pilar 3 er sentrert rundt temaet *Integrated assessment*, og studerer tilknyttede fordeler ved klimapolitiske tiltak og koplinger mellom klimaavtaler og andre internasjonale miljøavtaler. Også denne aktiviteten blir drevet i samarbeid med andre institusjoner (i 2000: NILU, ECON, MIT).

CICERO oppnådde i 2000 å få små, men langsiktige, bidrag fra Forskningsfondet til arbeidet med pilar 1 og 2 og arbeidet her er kommet godt i gang.

CICEROs innsats innen "integrated assessment" ble i 2000 omfattet med positiv interesse fra bl.a. IPCC, men CICERO har dessverre så langt ikke klart å sikre langsiktig finansiering for denne virksomheten.

På sikt er målet for CICERO å utvide sitt hjemmemarked fra Norge til i første omgang Sverige og Danmark både med hensyn til forsknings- og informasjon-

saktivitet. Det er naturlig at en slik ekspansjon starter med å utvide informasjonsarbeidet. Men særlig forskning om virkninger av klimaendringer og klimapolitikk vil ha klar nytteverdi av en nordisk samordning, som vi mener CICERO kan spille en rolle i å realisere. Vi håper å kunne ta de første skritt i en slik retning i løpet av 2001, men dette forutsetter egen finansiering slik at informasjonsaktiviteten ikke går på bekostning av forskningsaktiviteten.

CICERO har i løpet av 2000 deltatt i en rekke sentrale nasjonale og internasjonale prosesser knyttet an til klimaproblemet, og styret registrerer med tilfredshet at bruken av CICERO som et sentralt kompetansesenter innen klimaforskning er økende.

Senteret nådde også i 2000 målet om å ha minst én publikasjon i et internasjonalt tidsskrift med referee-ordning per vitenskapelig ansatt. Publiseringshyppigheten er likevel ujevnt fordelt blant de ansatte. Det har videre vært en økning av populærvitenskapelig formidling gjennom foredrag, kronikker og ikke minst tidsskriftet *Cicerone*.

Informasjon og samfunnskontakt

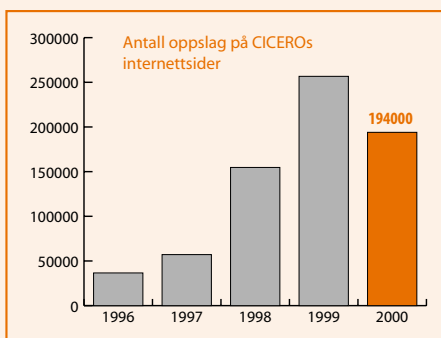
Det har vært en markert økning i informasjonsvirksomheten ved CICERO i alle år siden 1997, og dette var også trenden i år 2000. Styret merker seg med glede at CICERO benyttes som kompetansesenter av norske medier. Høsten 2000 bidro klimaforhandlingene i Haag samt det uvanlige høstværet til at informasjonsaktiviteten var svært høy. Foruten at aktiviteter som tidsskriftet *Cicerone* og arrangementet Klimaforum er blitt videreført, er senterets medarbeidere hyppige deltakere i den offentlige debatten om klimaspørsmål og foredragsholdere i ulike fora.

Antall oppslag på CICEROs internetsider framgår av figuren. Tallene for 2000 er beheftet med en viss usikkerhet og er ikke helt sammenliknbare med tall for foregående år. Dette skyldes hovedsakelig skifte av statistikkverktøy som for kommende år vil gi et bedre bilde over antall treff.

Senterets tidsskrift *Cicerone* utkom med ny design og seks numre i 2000, som var Cicerones niende årgang. Sideantallet er økt fra foregående år. Det ble også etablert en engelsk web-versjon av tidsskriftet. *Cicerone* ble referert til i mediene i inn- og utland. *Cicerone* fikk over 300 nye abonnenter i år 2000, og distribueres nå gratis til ca. 2.589 abonnenter, med et opplag på 3.000. Hovedtyngden av abonnentene er å finne i departementer, direktorater, næringslivet, forskningsinstitusjoner og i den videregående skole.

Klimaforum hadde fire møter i 2000, med bl.a. miljøvernministeren som innleder. Forumet samler deltakelse fra næringsliv, myndigheter og forskning og har som formål å formidle kunnskap om utviklingen på klimaområdet og å skape en dialog om sentrale klimapolitiske emner mellom alle aktørene. Femten bedrifter og statlige institusjoner var medlemmer av forumet i 2000.

Det ble også laget en ny informasjonsbrosjyre i år 2000 (norsk og engelsk), websidene ble betydelig omstrukturert og det ble satset ytterligere på informasjon om skolen samt kvalitetssikring av engelske publikasjoner.



Samarbeidsutvalg for klimaforskning, der CICERO deltar, har gjennom arbeidet med sin andre årsrapport kommet fram til en anbefaling om at det bør satses midler på systematisk formidling fra norsk klimaforskning i en prøveperiode. CICERO vil stå sterkt som koordinator og utøvende institusjon av en slik oppgave om den blir realisert. Dette vil i så fall utgjøre en vesentlig utfordring for CICERO i kommende periode.

Samfunnskontakten til CICERO må sies å ha vært god også i 2000. Foruten foredragsvirksomhet og mediaopptredener, var senteret representert i en rekke styrer og andre organer i Norges forskningsråd, og deltok i en rekke styrer, komiteer, utvalg og arbeidsgrupper nasjonalt og internasjonalt i regi av forvaltning og næringsliv. Av større oppgaver i 2000 kan vi nevne den svenske ekspertgruppen som utredet bruk av fleksible virkemidler i klimapolitikken, og lederskap av en internasjonal komite som evaluerte Miljø- og naturressursgruppen ved IIASA.

CICERO leverte også i 2000 en rekke bidrag til konferanser og arbeidsgruppemøter og deltok aktivt i forskerbedømmelser og sensurvirksomhet ved våre høyere undervisningsinstitusjoner.

Informasjonskonsulent Reidar Evensen sluttet ved årsskiftet 1999/2000 og informasjonsleder Borghild Krokan overtok den daglige ledelsen av informasjonsarbeidet fra januar 2000.

Forskningssamarbeid

CICEROs plassering ved Universitetet i Oslo og senterets nære samarbeid med relevante institutter er viktig på et felt hvor grunnforskning og anvendt forskning er meget tett knyttet til hverandre. Senterets tilknytning til Universitetet er strategisk viktig og av gjensidig nytte og verdi. Samarbeidet med Universitetet i Oslo er formalisert gjennom ramme-, drifts- og leieavtaler. Ved Universitetet i Oslo påtar CICERO seg så langt kapasiteten rekke oppgaver i forbindelse med undervisning og veiledning av hovedfagsstudenter i samarbeid med de aktuelle instituttene. CICERO hadde i 2000 fire profesorer fra Universitetet ansatt i bistilling ved senteret. Senterets doktorgradsstipendiater deltar i den organiserte doktorgradsutdannelsen ved UiO. To av stipendiaterne disputerte i 1999. CICERO hadde i 2000 to doktorgradsstipendiater, begge var på studieopphold i USA.

CICERO har et omfattende internasjonalt nettverk av både formell og uformell art. Særlig vil fremheve vår deltakelse i Climate Change Knowledge Network som koordineres av International Institute for Sustainable Development (IISD) i Canada og hvor CICERO i 2000 startet opp et konkret samarbeidsprosjekt med Tata Energy Research Institute (TERI) i India i løpet av året. Vi har også et viktig nettverk gjennom IPCC-arbeidet og gjennom EU-finansierte prosjekter.

I Norge samarbeider CICERO med Universitetet i Oslo og dets institutter såvel som med andre forskningsmiljøer. Slik kan en trekke vekslers på hverandres internasjonale kontaktnett. Med utgangspunkt i Regjeringens og Stortingets interesse for opprettelsen av CICERO, er det en spesiell oppgave å bistå i den nasjonale koordinering på området klimapolitisk forskning i Norge. CICERO har således ansvaret for å koordinere forskningsprogrammet "Samfunnsmessige rammebetin-

gelser og virkemidler for norsk energi- og miljøpolitikk" (SAMRAM) i Norges forskningsråd og fikk i 2000 oppdrag med å koordinere det etterfølgende program "Samfunnsfaglige studier av energi, miljø og teknologi" (SAMSTEMT) for perioden 2001-2005, samt å bistå Forskningsrådets Samarbeidsutvalg for klimaforskning med sekretariatstjenester.

Gjennom særskilte midler som Norges forskningsråd har stilt til rådighet for samarbeidstiltak mellom de utenrikspolitiske institutter i Osloregionen, har CICERO i løpet av 2000 fortsatt samarbeidet med Fridtjof Nansens Institutt.

Arbeidsmiljø

Generelt var arbeidsmiljøet ved CICERO bra. Sykefraværet i 2000 var på 4,8 % (2,9% i 1999). Det ble også i 2000 gjennomført en HMS-undersøkelse blant de ansatte. Undersøkelsen viste stor tilfredshet med det psykososiale arbeidsmiljøet. Derimot peker dårlig inneklima og renhold seg ut et problemområde. HMS-undersøkelsene følges opp av årlige handlingsplaner for HMS-arbeidet.

Virksomheten forurensrer ikke det ytre miljø. Det er ikke rapportert om skader eller ulykker ved arbeidsplassen.

Styret

Miljøverndepartementet oppnevnte i 1999 styre for CICERO med funksjonstid fram fra 30.06.99 til 30.06.01. Direktør Knut N. Kjær, Norges Bank, ble gjenoppnevnt som styreleder. Fakultetsdirektør Tove Kristin Karlsen ved det Samfunnsvitenskapelige fakultetet, Universitetet i Oslo, er styrets nestleder. Styret har følgende medlemmer i inneværende periode: Professorene Jon Vislie fra Økonomisk institutt og Trond Iversen fra Institutt for geofysikk, begge Universitetet i Oslo, forsker Inger Hanssen-Bauer, Det norske meteorologiske institutt, konsernsjef Øivind Lund fra ABB, rådgiver Eli Marie Åsen fra Miljøverndepartementet, samt representant for de ansatte forsker Tora Skodvin. Professor Raino Malnes, Institutt for statsvitenskap og første-konsulent Bente Lise Dagenborg, Landbruksdepartementet, er fast møtende varamedlemmer i styret.

Styret hadde i 2000 fem møter, hvorav ett var ett var kombinert med et faglig seminar med deler av CICEROs stab.



Resultatregnskap for CICERO 2000

Driftsinntekter	Noter	2000	1999
Prosjektinntekter	1	8 336 438	10 645 294
Offentlige tilskudd	2	5 401 000	5 451 000
Andre driftsinntekter		0	12 200
		13 737 438	16 108 494
Driftskostnader			
Innkjøp av FoU og andre underleveranser		1 746 221	2 615 284
Lønn og andre sosiale kostnader	3	9 648 186	9 322 841
Husleie		1 117 767	878 580
Reiser		941 803	677 849
Konferanser og møter		214 212	252 535
Andre driftskostnader		1 127 015	1 611 344
Avskrivninger, nedskrivninger	4	417 902	442 016
Tap på fordringer	5	17 383	8 400
		15 230 490	15 808 848
Driftsresultat		-1 493 052	299 646
Finansinntekter			
Renteinntekter	6	684 580	461 019
Agio		35 267	21 399
		719 846	482 417
Finanskostnader			
Rentekostnader		305	1 079
Agio		5 221	12 313
		5 526	13 392
Finansresultat		714 320	469 025
Årsresultat		-778 732	768 671
Disponering av årets resultat			
Overført til driftsfond		-778 732	768 671

Balanse for CICERO 2000 per 31.12.00

EIENDELER	Noter	2000	1999
Anleggsmidler			
Inventar og datautstyr	4	327 240	535 593
Statsobligasjoner	7	4 000 000	4 054 400
		4 327 240	4 589 993
Omløpsmidler			
Kundefordringer		563 953	466 816
Andre fordringer		-2 397	4 775
Opptjent/ikke fakturert arbeid	8	1 912 185	3 189 831
Kontanter og bankinnskudd	9	3 734 939	3 898 477
		6 208 680	7 559 899
Sum eiendeler		10 535 919	12 149 892
GJELD OG EGENKAPITAL			
Egenkapital			
Innskutt egenkapital		50 000	50 000
Opptjent egenkapital		7 757 584	8 536 316
		7 807 584	8 586 316
Gjeld			
Avsetninger for forpliktelser			
Skyldig forskuddstrekk, arbeidsgiveravgift, pensjonsinnskudd, fagforeningskontingent, og feriepenger og annet pliktig trekk			
		1 482 924	1 515 917
Kortsiktig gjeld			
Forskuddsbetalte prosjektmidler		865 117	538 308
Leverandørgjeld		183 294	166 971
Annen gjeld	10	196 999	1 342 380
		2 728 334	3 563 576
Sum gjeld og egenkapital		10 535 919	12 149 892

Oslo, 15. mars 2001		
	Knut N. Kjær Styrets leder	
	Tove Kristin Karlsen Nestleder	
	Inger Hanssen-Bauer	
	Irand Iversen	
	Jon Vislie	
	Bente Lise Dagenborg	
	Knut H. Alfsen Direktor	

Noter

Note 1: Prosjektinntekter

CICEROs prosjekter mottok, foruten basisbevilgningen, finansiering fra følgende instanser:

	2000	1999
Forskningsrådet	35 %	31 %
Departementer	12 %	11 %
EU	3 %	6 %
Andre offentlige institusjoner	3 %	7 %
Næringsliv m.m	1 %	2 %
Nordisk Ministerråd	0 %	0 %
Organisasjoner/stiftelser	3 %	2 %
UNEP	0 %	1 %
Verdensbanken	4 %	5 %
Andre utenlandske oppdragsmidler	2 %	4 %
	64 %	69 %

Note 2: Offentlige tilskudd

CICERO mottok i 2000 kr. 4.951.000 i basisbevilgning fra Norges Forskningsråd, og kr. 450.000 i bevilgning fra Miljøverndepartementet.

Note 3: Lønn og andre sosiale kostnader

Posten består av lønnskostnader, feriepenger, styrehonorar, arbeidsgiveravgift, premie pensjonsordning, telefon og avis for ansatte, kantinekostnader, kompetansehevingstiltak, trygdekasserefusjoner og velferd.

Lønn og andre honorarer til direktør har i 2000 vært kr. 556.810, og styregodtgjørelse utgjorde kr. 167.500.

Note 4: Avskrivning, nedskrivning

	Datautstyr	Kontorutstyr	Inventar	Sum
Anskaffelseskostnad per 01.01.00	2 026 050	15 929	542 593	2 584 572
Årets investeringer	106 439	0	48 711	155 150
Avgang til anskaffelseskostnad	911	0	0	911
Akkumulerte avskrivninger per 31.12.00	1 836 810	15 929	558 830	2 411 569
Bokført verdi per 31.12.00	294 768	0	32 474	327 240
Årets avskrivninger	324 814	5 310	33 378	363 502

Avskrivningsmetode: Lineær avskrivning over 3 år.

Varige driftsmidler ble for 2000 avskrevet i samsvar med måneden kjøpet ble foretatt.

Investering i varige driftsmidler de siste seks år (tidligere års anskaffelser ble kostnadsført i sin helhet).

År	Datautstyr	Kontorutstyr	Inventar	Sum
1994	407 655		311 463	719 118
1995	366 708		156 993	523 701
1996	238 633			238 633
1997	231 075		55 779	286 854
1998	382 637	15 928	18 359	416 924
1999	397 975			397 975
2000	106 439		48 711	155 150
Sum	2 131 122	15 928	591 305	2 738 355

Omløpsmidler

Omløpsmidlene ble vurdert til virkelig verdi og ikke høyere enn anskaffelseskost.

Nedskrivning

Nedskrivning på obligasjoner på grunn av kursfall utgjør kr. 54.400.

Note 5: Tap på fordringer

Det er i regnskapet kostnadsført tre tap som er fordringer hos kunder fra tidligere år, pålydende kr. 17.383.

Note 6: Renter fra statsobligasjoner

Renter fra statsobligasjoner for perioden 01.06.99-31.05.00 er i sin helhet inntektsført i 2000. Dette skyldes feil i bokføringen i 1999.

Note 7: Statsobligasjoner

Obligasjonene er nedskrevet til pålydende verdi.

Note 8: Opptjent/ikke fakturert arbeid

Posten består av direkte lønnskostnader ved den nedlagte arbeidsinnsats med tillegg av andel felleskostnader og direkte prosjektutlegg.

Note 9: Kontanter og bankinnskudd

Posten inkluderer en bankkonto i USD som står oppført i balansen med kurs per 31.12.00. Regnskapsposter i utenlandsk valuta i løpet av året er inntekts- og kostnadsført til periodens kurs.

Note 10: Annen gjeld

Denne posten består av avsetning for påløpte, ikke fakturerte kostnader per 31.12.00.

Note 11: Antall ansatte

Gjennomsnittlig antall ansatte har for 2000 vært 29.

Note 12: Revisjon

Regnskapet er i henhold til Regnskapsloven og blir revidert av Riksrevisjonen.

Kontantstrømanalyse 2000

Kontantstrøm fra operasjonelle aktiviteter	2000	1999
Årets resultat	-778 732	768 671
Gevinst ved salg av varige driftsmidler	0	-12 200
Avskrivninger	363 502	278 293
Nedskrivninger	54 400	163 723
Økning i varelager	0	0
Reduksjon i kundefordringer	-97 137	894 914
Økning i leverandørgjeld	16 323	63 045
Endring i andre tidsavgrensningsposter	433 253	-298 214
Netto kontantstrøm fra operasjonelle aktiviteter	-8 388	1 858 234
Kontantstrøm fra investeringsaktiviteter		
Utbetaling ved kjøp av varige driftsmidler	-155 150	-397 975
Innbetalinger ved salg av varige driftsmidler	0	12 200
Kjøp av statsobligasjoner	0	-1 518 393
Netto kontantstrøm fra investeringsaktiviteter	-155 150	-1 904 168
Netto endring i kontanter og kontantekvivalenter	-163 538	-45 934
Kontanter og kontantekvivalenter per 01.01.00	3 898 477	3 944 410
Kontanter og kontantekvivalenter per 31.12.00	3 734 939	3 898 477

Revisjonsberetning for 2000

R

Riksrevisjonen

Til styret i stiftelsen CICERO Senter for Klimaforskning

REVISJONSBERETNING FOR 2000

Vi har revidert årsregnskapet for CICERO Senter for Klimaforskning for regnskapsåret 2000, som viser et underskudd på kr 778 732. Vi har også revidert opplysningene i årsberetningen om årsregnskapet, forutsetningen om fortsatt drift og forslaget til dekning av underskuddet. Årsregnskapet består av resultatregnskap, balanse, kontantstrømoppstilling og noteopplysninger. Årsregnskapet og årsberetningen er avgitt av stiftelsens styre og direktør. Vår oppgave er å uttale oss om årsregnskapet og øvrige forhold i henhold til revisorlovens krav.

Vi har utført revisjonen i samsvar med revisorloven og god revisjonsskikk. God revisjonsskikk krever at vi planlegger og utfører revisjonen for å oppnå betryggende sikkerhet for at årsregnskapet ikke inneholder vesentlig feilinformasjon. Revisjon omfatter kontroll av utvalgte deler av materialet som underbygger informasjonen i årsregnskapet, vurdering av de benyttede regnskapsprinsipper og vesentlige regnskapsestimater, samt vurdering av innholdet i og presentasjonen av årsregnskapet. I den grad det følger av god revisjonsskikk, omfatter revisjon også en gjennomgåelse av stiftelsens forretningsforvaltning og regnskaps- og intern kontroll-systemer. Vi mener at vår revisjon gir et forsvarlig grunnlag for vår uttalelse.

Vi mener at

- årsregnskapet er avgitt i samsvar med lov, forskrifter og stiftelsens formål og gir et uttrykk for stiftelsens økonomiske stilling 31. desember 2000 og for resultatet i regnskapsåret i overensstemmelse med god regnskapskikk
- ledelsen har oppfylt sin plikt til å sørge for ordentlig og oversiktlig registrering og dokumentasjon av regnskapsopplysninger i samsvar med lov og god regnskapskikk
- opplysningene i årsberetningen om årsregnskapet, forutsetningen om fortsatt drift og forslaget til dekning av underskuddet er konsistente med årsregnskapet og er i samsvar med lov og forskrifter.

Oslo, 3. april 2001

Etter fullmakt


Stig Kjelvik
avdelingsdirektør


Jan Myhrvold
rådgiver

CICERO

The Center for International Climate and Environmental Research - Oslo was established by the Norwegian government in April 1990 as a non-profit organization associated with the University of Oslo.

Our research focuses on:

► **Impacts of climate change and climate policy:** Studies in this area aim to map vulnerability to climate change and climate measures in different areas of Norwegian society. Building a network based on our in-house research is also an objective here.

► **Enforcement, verification, and design of climate agreements:** Research here concentrates primarily on the situation of developing countries and factors that affect their participation in international climate agreements. Both the natural sciences (verification of emissions through measurements and model calculations) and the social sciences, particularly political science, provide input in these studies, and network building is essential. The work builds on models developed at CICERO in cooperation with the University of Oslo.

► **Integrated assessment:** Studies in this category look at the co-benefits of climate measures and the coupling between climate agreements and other international environmental agreements. One example is a study of how climate measures in China can result in reduced air pollution, which in turn results in reduced health damages.

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