

# **Developing and implementing Green National Accounts and the Green GDP**

## **The main implementing organization, including its mission and goals**

The partners in this project are the University of Copenhagen, represented by the Department of Economics and the Department of Political Science, and Statistics Denmark. The key persons in the project from Copenhagen University, professors Peter Birch Sørensen and Jens Hoff are both affiliated with the University's Sustainability Science Centre; Jens Hoff as member of the Centre's steering group and Peter Birch Sørensen as member of the Centre's industry contact group. The mission and goals of this centre are stated as follows: 'The purpose of the Sustainability Science Centre is to catalyze, facilitate and coordinate research and educational initiatives at the University of Copenhagen in order to address issues relevant to the sustainable development of society. The centre brings together the strong disciplinary traditions of several faculties in order to address the key problems of sustainable development and globalization in a highly integrative manner, thereby aiming to make the University of Copenhagen a leading actor in this particular field, both in terms of research and in post-graduate education. The centre also serves the community at large by providing free, public lectures on sustainability issues and a portal through which the university's competences in sustainability can be accessed.'

## **Statement**

This project addresses the question of how Green National Accounts (GNA) can be further developed and integrated in political and administrative institutions and national legislations. Through research and communication activities the project will encourage the use of GNA in the wider political, administrative and business environment and maximize its potential for political decision-makers. In doing so the project will build on and enhance the knowledge about GNA and its potential uses which is currently produced in a range of multilateral organizations such as the UN (Committee of Experts on Environmental-Economic Accounting), the World Bank, IMF, OECD and the European Commission. This effort is especially timely now, as from 2017 the European Union member states are required to deliver an increased number of green accounts, and as the UN has now begun the implementation process of its Sustainable Development Goals for 2030, for which this project is highly relevant and can deliver important inputs.

Embedding GNAs and the Green GDP (also termed the Green Net National Product, GNNP) centrally in political decision-making will improve the quality of political decisions and promote integrated policy making by highlighting negative environmental externalities and resource depletion. In Denmark, some progress has been made towards this end. In 2014 the Danish government decided to spend DKK 13.5 million on developing GNA. Over the next few years Statistics Denmark will produce a set of GNAs, based on the international standard: System of Environmental Economic Accounting (SEEA). Our project will strengthen the work in Statistics Denmark by anchoring it firmly in an international research context, and by focusing on how the statistical accounting results produced by Statistics Denmark are used to inform and monitor policy making.

## **Description of activities, including a plan and timeline for implementation**

This project will include three activities, which are necessary to ensure the further development and wider national as well as international impact of GNAs:

- 1) *The first activity (WP1) will investigate how political-administrative practices related to the use of traditional economic measures like GDP can be oriented towards using GNA/GNNP.*

The overall goal of this activity is to assess the potentials and long-term opportunities for reorienting different sectors in Danish public administration towards the use of GNA/GNNP as a supplement or alternative to the traditional GDP. To realise this goal a number of activities will be undertaken: 1a) The practical and institutional barriers for such reorientation will be identified. This includes an analysis of where in the administrative processes an improved knowledge about environmental and resource issues and the usefulness of GNA is especially needed, and where the current GNA fall short of meeting these needs. Such shortcomings could be related to e.g. lack of timeliness, completeness or intelligibility. Also such research will indicate where mandatory use of the GNA/GNNP might be beneficial, 1b) The discursive barriers to the reorientation will also be investigated. This will entail looking at if and how political decision-makers and relevant civil servants have reacted to the long lasting criticism of the GDP, and how they view recent initiatives on measuring progress in social welfare such as the GNA, but also international activities such as the UN SDG process, the EU “Beyond GDP” initiative, the World Bank WAVES project, the Stiglitz-Sen-Fitoussi Commission, etc. Such analysis will allow an assessment of their readiness to accept a new version of the GDP. 1c) To increase knowledge about institution-building in this field, a separate part of this WP will study how the ‘old’ GDP as a concept and policy-instrument developed originally, how it became institutionalized, and how it gained world-wide recognition.

### *Time table for and deliverables from WP1:*

There will be two types of deliverables from this WP. Firstly, a report will be produced laying out the practical, institutional and discursive barriers for a reorientation towards the GNA/GNNP in Danish public administration (cf. 1a and 1b above). This report will be published and is to be discussed by the project’s advisory board in order for the project to devise strategies to overcome these barriers. The report should be ready within the first 18 months of the project. Secondly, the findings from the activities on the ‘old’ GDP (1c above) will inform this work, and will be published as a book with a major international publisher. A post.doc. student will be hired to undertake the work with the report, to help write policy briefs, as well as to plan and participate actively in the planned workshops and final conference. The post.doc. student will be hired for three years and supervised by Professor Jens Hoff, University of Copenhagen.

- 2) *The second activity (WP2) contributes to the development of the GNA/GNNP*

The overall goal of this work package is to improve the methodological and empirical foundations for the ongoing development of the Danish system of Green National Accounts (GNAs) in Statistics Denmark. The end goal is to construct a time series for the

Danish GNNP and to document the underlying measurement principles and data sources so that the time series can be updated and further improved in the future. A first step towards this goal has been taken in the report by Statistics Denmark (2013) which described the status of the GNAs and discussed the possibilities for constructing a GNNP.

The purpose of the methodological part of the WP is to ensure that the construction of a Danish GNNP is based on theoretically well-founded measurement principles described in the international scientific literature on the GNNP and sustainable development as summarized, for example, by Pezzey and Toman (2002). At the same time care will be taken to ensure that the measurement principles can be implemented in practice (given the data available) in a manner consistent with the international statistical standards recommended by the UN. The studies by Pezzey et al. (2006) and Mota et al. (2010) exemplify how one may bridge the gap between theory and practice when measuring GNNP and may serve as sources of inspiration when estimating a GNNP for Denmark.

On the road to constructing a time series for the GNNP, the WP will pursue three important intermediate goals:

- 1) Extension of existing records of physical material flows and emissions of pollutants in the Danish GNAs to ensure that they include all important sources of environmental degradation and their links to the economic system.
- 2) A systematic review and updating of the valuation of the environmental effects and services included in the GNAs (and hence to be included in the GNNP), based on state-of-the-art valuation methods and the most recent empirical evidence. The aim is to encourage the relevant ministries and public sector organizations to use consistent updated estimates of the value of environmental goods and services when considering environmental policy measures and public investment projects.
- 3) Establishment of a separate set of accounts for the evolution of the stock of “natural capital” in Denmark, in physical as well as economic terms, using information from the GNAs and the updated valuation methods mentioned above. This will serve to highlight the impact of environmental effects on the GNNP and may appeal to adherents of “strong sustainability” who argue for the preservation of society’s stock of natural capital.

*Time table for and deliverables from WP2:*

A Ph.D. student in Environmental Economics will be hired for the WP and will go through a 3-year Ph.D.-program. The resulting Ph.D. thesis should contain at least 3 papers with a potential to be published in international peer-reviewed scientific journals. In addition, a report documenting the construction of the GNNP for Denmark will be produced at a technical level accessible to practitioners in relevant ministries and organizations. Finally, WP2 will deliver a short non-technical feature article on the key findings of the project aimed at broad communication to the media.

The Ph.D. student will be supervised by Peter Birch Sørensen from the University of Copenhagen and Ole Gravgård Pedersen from Statistics Denmark, with Peter Birch Sørensen as the main supervisor. Collaboration with environmental researchers with a natural science background will draw on links to relevant colleagues within Copenhagen University's interdisciplinary Sustainability Science Centre. The work on improving the measurement of environmental externalities will also draw on Peter Birch Sørensen's links to the Danish Council on Climate Change (Klimarådet) and the Danish Environmental Economic Council (Det Miljøøkonomiske Råd) and on Ole Gravgård Pedersen's work with numerous colleagues in Statistics Denmark and with international colleagues.

3) *The third activity (WP3) is related to outreach and engagement activities nationally and internationally.*

The project aims to reach multilateral organizations, civil servants, political decision-makers, academics, businesses and the public at large by engaging in the following activities:

3a) Establishment of an advisory board (6-8 members) coming from multilateral organizations and relevant Danish institutions. The following persons will be invited to sit on the advisory board (some have already accepted our invitation): Lars Haagen Pedersen, Deputy Permanent Secretary in the Ministry of Finance (TBC); Jørgen Elmeskov, Chief Statistician and Head of Statistics Denmark (confirmed); Signe Krarup, Senior Adviser in the Danish Ministry of Environment and Food (confirmed); Thomas Bue Bjørner, Head of Environmental Economics Division in the Danish Economic Councils (confirmed); Glenn Marie Lange, Chief Technical Advisor, World Bank's WAWES-project (TBC); Nicholas David Hanley, Professor, St. Andrews University, UK (TBC) ; Mette Abildgaard, MP (Conservative Party)(TBC), and Lisbeth Bech Poulsen, MP (Socialist People's Party)(TBC). This will help to ensure that the research findings from the project will be useful and relevant for public administration and the political level nationally as well as internationally.

3b) Cooperation with relevant institutions such as Statistics Denmark (which is a partner in this project), the Danish Council on Climate Change (Klimarådet) and the Danish Environmental Economic Council (Det Miljøøkonomiske Råd) and relevant civil servants with the purpose of improving the measurement of environmental externalities in Denmark;

3c) The writing and dissemination of regular policy briefs to especially political decision-makers, journalists and other public opinion makers highlighting new aspects of the GNA/GNNP and their practical use.

3d) Organization of workshops for representatives of different relevant organizations, including business organizations, think tanks, important public opinion makers and journalists;

3e) Dissemination of findings from the research project internationally by participating in European and international statistics conferences and fora, and publication in academic journals and books.

*Time table for and deliverables from WP3:*

Advisory board meetings will take place yearly during the three-year project period. The project will also organize an annual workshop for representatives of relevant organizations and public opinion makers. The cooperation with Statistics Denmark, the Danish Council on Climate Change and the Danish Environmental Economic Council will be organized informally, and take place on a day-to-day basis. To disseminate the findings from the project at conferences, project participants will participate in at least one conference yearly. Further, dissemination will happen via policy briefs and the publications mentioned above.

### **Expected impact of the activities, and how this will be monitored and measured**

The goal of the project is to encourage decision-makers from all sectors in society to move towards an integrated policy approach where the effects of political decisions on the environment and climate are systematically and consistently evaluated along with its effects on economic activity by using the GNA/GNNP in the same way as the conventional GDP is currently used. We will measure progress towards this goal in three dimensions: 1) Impact on the political-administrative world. This will be measured by observing the number of parliamentary bills based on data from the GNA and by interviewing a sample of relevant political-administrative decision-makers, 2) The broader societal impact. This will be measured by observing how often, and in what way, the GNA is mentioned in the media, 3) Academic impact. This will be measured through the usual measures for this (number of publications and citations).

### **Who will be implementing the activities?**

This project is based on collaboration between the University of Copenhagen (Department of Political Science and Department of Economics) and Statistics Denmark (Danmarks Statistik) and includes a number of international collaborators through the projects' advisory board. The two university departments contribute with one prominent professor in green politics (Jens Hoff) and green economics (Peter Birch Sørensen) respectively. These two professors are also the PI and co-PI on the project. The research foundation and constant development and progress of the project will be guaranteed also by the two junior researchers in the project (one PhD and one Post.Doc. student) working on the project full time. Finally, the findings of the project are guaranteed political and administrative viability through the strong presence of Peter Birch Sørensen (chairman of the Council of Climate Change (Klimarådet) and Ole Gravgård Pedersen from Statistics Denmark in the project.

### **Describe any known risks associated with the implementation of activities and how these risks will be addressed**

The biggest risk associated with this project is that it might fail in creating a lasting impact on political-administrative decision-makers and relevant civil servants, and that the GNA/GNNP will therefore not be used or taken into consideration when political decisions are made or new laws are conceived. We will address these risks through the outreach and engagement activities of WP3. Further, the participation of Statistics Denmark (DST) in the project ensures that state-of-the-art research will inform the work in DST and will increase the relevance of DST's work on GNA for political-administrative decision-makers and civil servants nationally and internationally. On the other hand the participation of Statistics Denmark ensures that the development of the theory and the construction of the GNNP is solidly based on the existing knowledge of and availability of

statistical data, practical implementation of GNA in Denmark and internationally, and that knowledge about the state-of-art of GNA (SEEA) is reflected in the project.

### **Plan for communicating results and lessons learned**

Two goals are guiding our communication plan: 1) The GNA/GNNP is set firmly on the political agenda, 2) The relevant civil servants are made aware of progress in the measurement and practical applicability of the GNA/GNNP. To make sure that these goals are reached a number of activities are undertaken:

- a) Major results from the project will be published as policy briefs and distributed to relevant journalists at the major daily newspapers to motivate them to publish articles concerning the issue. We have good personal contacts with some of these journalists.
- b) We will brief the environmental speakers of the different political parties when policy briefs are published.
- c) Towards the end of the project a major conference will be arranged at the Parliament to present the results to politicians, relevant civil servants, businesses, academics and journalists.
- d) Communication will also take place at the yearly workshops (see WP3). Statistics Denmark will inform about the project and present results to its international partners. This includes Eurostat working groups and the UN fora, e.g. the London group on Environmental-Economic Accounting and the UN Committee of Experts on Environmental-Economic Accounting.

Finally, Statistics Denmark will through its advisory group on GNA communicate current progress on the GNA directly to civil servants in the most relevant ministries.

### **References**

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