# Conference Report

## GGKP Third Annual Conference

*Fiscal Policies and the Green Economy Transition: Generating Knowledge – Creating Impact*

GREEN GROWTH
Knowledge Platform

2015

*The Green Growth Knowledge Platform's Third Annual Conference was hosted in partnership with the Ca' Foscari University of Venice, The Energy and Resources Institute (TERI) and the United Nations Environment Programme (UNEP) and supported by the Government of Switzerland and the Government of the Netherlands. The GGKP was established by GGGI, OECD, UNEP and the World Bank.*

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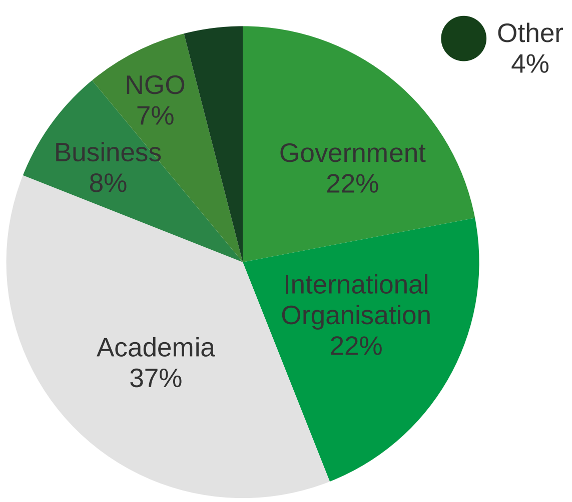
# Overview

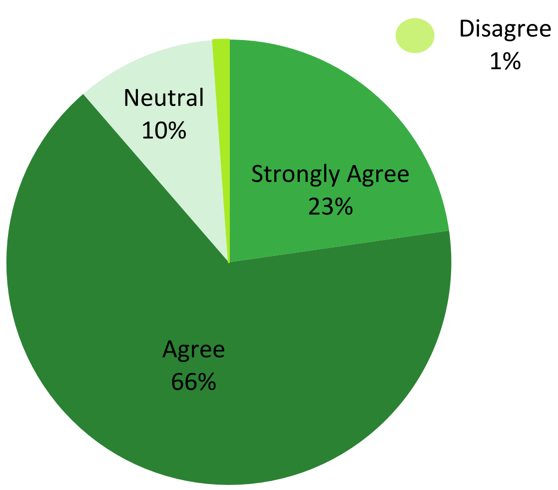
The Green Growth Knowledge Platform (GGKP) held its Third Annual Conference on the theme of "Fiscal Policies and the Green Economy Transition: Generating Knowledge – Creating Impact" in Venice, Italy, from 29 through 30 January 2015. The conference was hosted in partnership by Ca' Foscari University of Venice, The Energy and Resources Institute (TERI) and the United Nations Environment Programme (UNEP).

The GGKP Third Annual Conference represents a new kind of international gathering. A hybrid between a policy forum and an academic conference, it drew together top researchers on fiscal policy with leading green growth policymakers and experts to debate and discuss cutting-edge policy options for driving forward a green economy. The key to the conference’s success was its ability to stimulate interaction and debate across disciplines. It also enabled reality testing of academic theories and innovative policy proposals with time-tested policy experience.

Sectors of participants




Agreement with the statement “The GGKP successfully created dialogue between researchers, experts and policy makers on fiscal policy and the green economy”




The conference drew together 247 participants to debate and discuss newly developed research on the most effective means of introducing and reforming fiscal measures in support of green growth across various national contexts. Through 18 parallel sessions and three high-level plenaries, participants explored fiscal measures for climate change mitigation and adaptation, sustainable water management, green fiscal reform, transportation systems, environmental taxes in developing countries, incentives for investment in clean energy and more. Research presented at the meeting was chosen from the more than 200 abstracts received and reviewed by the Conference Review Committee.

In addition, the GGKP commissioned six in-depth scoping studies which were also presented at the conference. The development of the papers was coordinated through the GGKP's Fiscal Instruments Research Committee, comprised of leading experts from across the GGKP's 37 partner organizations and Advisory Committee.
In recognition of outstanding research presented at the conference, two awards were presented. Among the 22 papers submitted and eligible for the contest, the award for Best Paper by a Young Researcher went to Prudence Dato for his study, "Energy transition under irreversibility: A two-sector approach". The award for Best Overall Paper was presented to Max Franks for the paper, "Why finance ministers favour carbon taxes, even if they do not take climate change into account". In addition to cash awards, contest winners will have their papers published in a special issue of the peer-reviewed Journal *Environmental and Resource Economics*. All papers and presentations from the conference are available for download on the conference webpage.

The following report provides a synthesis of the key themes and insights to emerge from the GGKP Third Annual Conference as well as an overview of each of the meeting's individual sessions.


Although the Third Annual Conference was devoted to exploring specific fiscal policies undertaken for particular sectors, several general comments were reiterated throughout the parallel sessions and plenaries, which are summarized below.

***The political economy challenges of green fiscal reform should not be underestimated. Policies must take the economic, social and political dimensions into account.*** Fiscal policy needs to be considered within the wider context of sustainable development and, if possible, introduced in a comprehensive policy package crafted with key ministries and stakeholders. There are often social, political and occasionally economic obstacles to green fiscal reform, which must be clearly understood and addressed in fiscal policy design and implementation. Concerns about income distribution and competitiveness (that is, equity and efficiency concerns) are often at the heart of resistance to green fiscal reform. Positive social perception of, and broad-based political support for, reform is key to overcoming short-term obstacles. Support for environmental taxes and other fiscal policies can be built by accounting for distributional consequences, strengthening trust in government and public organizations, providing information on how taxes work, earmarking revenues for environmental purposes, and investing public funds in environmentally friendly technologies.

Developing an evidence-based narrative for introducing fiscal reform to support the transition to a green economy is important. Politicians may require evidence or a demonstration of the impact of the proposed reform. The narrative should emphasise the positive and highlight opportunities, such as job creation. The narrative should also be explicit about the complementary policies that will be implemented to support those groups negatively affected by the reform (e.g. through job losses in particular industries).

More research is needed to understand the distributional impacts of fiscal policy, so that equity and efficiency can be considered together in the design of sensible and effective policies. Similarly, behavioural change is one area requiring further research. If underlying behaviour does not change (in terms of consumption for instance), policies may not be successful or achieve their intended impact. Therefore, more research is needed to understand obstacles to behavioural change and the best ways to stimulate it.

***Fiscal policies must be designed with the final objective in mind and after careful reflection on the best instruments to achieve given policy objectives, the role of institutions and the true costs of instruments employed.*** Fiscal policies can address the carbon pricing challenge and guide incentives, but there are other challenges and externalities that cannot be managed through fiscal policies alone. It is important, therefore, to focus on the entire policy package and understand how its various elements interact with each other. Some fully justified policy measures can have unintended consequences, and when taken in combination, can lock-in carbon-intensive behaviour. Policymakers must, therefore, not only identify the appropriate policies, but also assess the stress these policies may put on existing institutions, and how this can be dealt with effectively.

Some sectors have complex institutional arrangements that require different sets of policies. For example, in the water sector, fiscal policy, including appropriate water pricing, is essential for sustainable management and inclusive use of available water resources, but it is not suited to achieve all water policy objectives, such as ensuring access to water for the poor.

Policymakers would benefit from a quantitative framework for fiscal reforms that identifies the revenue to be derived from various options. More information is required about revenues raised, jobs created, costs and other impacts. The benefits of fiscal reform should be addressed and quantified and attention drawn to potentially harmful subsidies.

***For measures to take effect and achieve an intended outcome, their early implementation or a long-term view may be required.*** Quick and cheap solutions, while possibly effective in the short term, may not always deliver the intended result over time. In the effort to decarbonise the economy, it is critical to focus on the pathway to reaching that outcome rather than on short- or medium-term targets that ultimately will be inadequate to address climate change. It is also necessary to get the sequencing right; a good investment environment without investors or having investors without the right investment environment will not work. Institution building will play a key role in coping with this mismatch.

***Eliminating environmentally harmful subsidies can free up considerable resources to fund the transition to greater sustainability, such as to invest in alternative energy sources and retrain the workforce.*** Moreover, divesting from fossil fuel sources, particularly in cities and transport-intensive areas, not only encourages movement towards a green economy but also has direct positive impacts on health and reduces national healthcare expenditure. A strategy for moving away from harmful investments (like mining and other extracting industries) is required. A case can also be made for using subsidies directly to support more sustainable solutions, although it is important to ensure that subsidies are time-bound to avoid distortions to the national economy and international trade.

***Taxing carbon can be macro-economically more efficient than taxing capital, labour, value added or consumption.*** Country experience shows that shifting the tax burden from labour to environmental pollution (for example, with sulphur and carbon taxes) is a cost-effective way to reduce emissions and pollution while maintaining economic growth, and contributing to other goals, such as revenue generation, noise reduction, stimulating efficiency and introducing the polluter-pays principle, among others.

***Fiscal policy can be a powerful tool to build the proper incentives.*** Incentives can relate to technological innovation, changes in behaviour, investment in sustainable alternatives and sustainable natural resource management, among others. Decisiveness and predictability in public policies are essential to send a stable signal to the private sector and promote innovation. Targeted complementary policies, including such soft policies as awareness raising campaigns, labelling requirements and others, can enhance the efficiency of such incentive measures.

The opportunity for fiscal reform is at hand. To this effect, institutions and governance structures must be reexamined and realigned with the underlying purpose of today's economies: to create jobs, income and prosperity.

# Day 1

29 January 2015

# First high-level panel: Fiscal instruments for green growth – Going beyond environmental taxation

The opening plenary set the scene and provided an overall context for the GGKP Annual Conference by triggering debate on some of the unexploited potential of fiscal policies to foster green growth. While fiscal policies are essential to support green growth, harnessing the full potential of environmental fiscal policies means ensuring that the broader fiscal setting is also supportive of green growth. The session also touched on how other structural policies (i.e. financial, competition, etc.) have potential to frustrate or reduce the impacts of environmental fiscal policies and where there is scope to better align environmental fiscal policy with policies in other areas.

**Key issues raised during the discussion included:**

- Green fiscal reform comprises an economic and a political dimension and both should be taken into account. While the economic dimension rests on efficiency, the political dimension is tied to the distributional impacts of reform. The framing and narrative of green fiscal reform is essential to its acceptability; distributional asymmetries need to be taken into account, governments need to look deeper than the aggregate impact of policies.
- Another matter that needs to be considered when designing environmental fiscal policies is the impact they will have on competitiveness. It is important to provide incentives for the private sector to respond in order to transform production systems.
- The social dimension can be an important driving factor for fiscal policy. For instance, in Kenya, policies that have positive economic impacts have been primarily aimed at solving social and environmental problems, such as youth employment or poverty eradication.
- Rather than focusing on particular environmental fiscal reforms, fiscal policy needs to be considered within the broader framework of sustainable development. Framing fiscal reform within a development strategy will help ensure a robust policy package is adopted. At the international level, for example, fiscal policy reform could be linked with the 2015 climate change negotiations.

- There is a growing body of knowledge that needs to be assessed regarding fiscal reform (for example, policies under the Great Recession fiscal stimulus package) to harness lessons for improved policymaking. Ex-post evaluation of policies is required to build credibility. Initial findings reveal that environmentally oriented policies have not been harmful to the economy and that in fact they can be helpful for growth. Overcoming the myth that environmental protection is detrimental to the economy is a first step towards adopting the right policies.
- An important area currently underexplored is fiscal policy to promote innovation and stimulate research and development.
- When designing fiscal reforms, it is important to confer with key stakeholders, including finance ministries, because they play a gatekeeper role in the implementation process of these types of policies.
- Taxing carbon has shown to be more economically effective than taxing capital or consumption because it causes fewer distortions to the economy. It can also provide quick and substantive

Chair:
- **Carlo Carraro**, Department of Economics, University of Venice

Welcome speakers:
- **Michele Bugliesi**, Rector, Ca' Foscari University of Venice
- **Ligia Noronha**, Director, Division of Technology, Industry and Economics, United Nations Environment Programme
- **Leena Srivastava**, Vice Chancellor, TERI University and Executive Director (Honorary), The Energy and Resources Institute

Panellists:
- **Robert Ford**, Deputy Director, Country Studies Branch, Economics Department, Organisation for Economic Co-operation and Development
- **Alice Akinyi Kaudia**, Environment Secretary, Ministry of Environment and Mineral Resources, Kenya
- **Francesco La Camera**, Director-General for Sustainable Development, Climate and Energy, Ministry of Environment, Land and Sea, Italy
- **Edward B. Barbier**, John S. Bugas Professor of Economics, University of Wyoming

## Session A1: Designing effective green tax reforms

Opportunity exists for governments to reform their fiscal policies to generate income while addressing environmental concerns. Environmental taxes, in particular, have proven to be an effective tool in addressing not only environmental externalities, but also inducing green investment. Environmental tax reforms in several countries have been supported by broader fiscal reforms aimed at reducing overall tax burdens, increasing employment and addressing social concerns. This session focused on how countries can design effective green tax reforms to reduce tax burdens, address social concerns and have a positive environmental impact, with case studies on environmental fiscal reform, carbon taxes and recycling schemes. During the session the issue of tax revenue was extensively discussed and all panellists underlined the important role it can play in the broader green economy transition.

**Key issues raised during the discussion included:**

- The revenue potential of fiscal policy instruments should be studied in greater detail and used to convince finance ministries to consider environmental fiscal reform.
- Environmental fiscal reform instruments offer positive environmental impacts, a potential increase of jobs, innovation and thus competitiveness.
- In weighing the benefits of capital versus carbon taxes, carbon taxes are found to be more effective in producing benefits for producers and importers and in revenue generation. Governments can use the rent for enhancing infrastructure investments, which in turn attracts investments in domestic capital stocks. Fiscal ministries should thus favour carbon taxes even if they do not consider environmental benefits.
- Tax revenues should be systematically reinvested in skill building in those sectors that will go through a transition as a result of the tax reform. Further research is needed to provide additional guidance to finance ministers on how best to use tax revenue to support a broad transition to a green economy.

Moderator:

- **David O'Connor**, Chief, Policy and Analysis Branch, Division of Sustainable Development, United Nations Department of Economic and Social Affairs

Panellists:

- **Kai Schlegelmilch**, Amani Joas: *Fiscal considerations in the design of green tax reforms*; GGKP commissioned paper
- **Max Franks**, Ottmar Edenhofer, Kai Lessmann: *Why finance ministers might favor carbon taxes, even if they do not take climate change into account*
- **Jules Schers**, Franck Lecocq, Frédéric Ghersi: *Green jobs potential in a skill-constrained economy: Analysis of different carbon tax recycling schemes for South Africa*

Discussants:

- **Jan Olsson**, Environment Ambassador, Ministry of the Environment, Sweden
- **Moustapha Kamal Gueye**, Policy Specialist, Green Jobs, International Labour Organization

## Session A2: Creating incentives for investment in clean energy

World energy demand is expected to increase over the coming decades, with growing populations and rising incomes placing added pressure on the current energy system. With fossil fuels making up the majority of global energy consumption, the international community and national governments are faced with major challenges with respect to the energy sector: assuring energy security, combating climate change, reducing pollution and public-health hazards, and addressing energy poverty.

This session highlighted ways to increase investment in renewable energy and energy efficiency, including lessons learned from experiences with complementary fiscal policy instruments to address specific barriers to clean energy technology in developed and developing countries; an examination of the rationale for subsidy policies when countries have already set in place other climate policies, renewable portfolio standards and carbon taxes; and an analysis of factors behind consumer choices for energy, such as households' knowledge about their energy spending and use, their social context, behaviour and beliefs.

**Key issues raised during the discussion included:**

- Feed-in tariffs protect market entrants, thus encouraging investment and innovation.
- It is difficult to end clean energy subsidies, as industry becomes accustomed to such subsidies. Policy entry and exit strategies are thus important.
- Households' knowledge about their energy spending and use, their social context, behaviour and beliefs, play a role in their investment decisions. Thus, different consumer groups require tailored energy efficiency policies.
- More research is needed on the conditions under which energy subsidies may result in emissions increases, and to understand the full cost of subsidies, and on the implication of local subsidies on the global economy.

Moderator:
- **Nikolaus Schultze**, Assistant Director-General, Global Green Growth Institute

Panellists:
- **Rita Pandey**, Meeta Keswani Mehra: Role of fiscal instruments in promoting low carbon technology innovation; GGKP commissioned paper
- **Carolyn Fischer**, Mads Greaker, Knut-Einar Rosendahl: Strategic subsidies for renewable energy
- **Nadia Ameli**, Nicola Brandt: Determinants of households' investment in energy efficiency and renewables – Evidence from the OECD survey on household environmental behaviour and attitudes

Discussants:
- **Alfonso Roggiero**, Advisor to the Minister of Environment, Ecuador
- **Tilman Altenburg**, Head of Department, Sustainable Economic and Social Development, German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE)

# Session A3: Enabling sustainable water management through fiscal measures

The green economy debate makes little reference to existing norms and discourses on sustainable water management and its relationship to human development. This session explored how green growth policies in the water sector can address issues of both quantity and quality by encouraging water-related innovation and investment in green infrastructure, with a specific focus on institutional entrepreneurship, water tariffs and environmental surcharges.

The research discussed in this session included analysis of the linkage between environmental policies and rent-seeking behaviour using as a case study the Cauca Valley Corporation, a regional entity in Colombia; and analysis of a recent global water tariff survey. Another study presented evaluated the effectiveness of an environmental surcharge imposed by the Government of Bangladesh on the value of produced goods rather than on the volume or concentration of emissions.

**Key issues raised during the discussion included:**

- Institutional complexity in the water sector requires different sets of policies, which need to address the governance of those different institutions. Policymakers, however, may take the easier road and choose not to address this complexity thus creating policy voids that can then be exploited by institutions (such as through rent seeking or through the reinterpretation and promotion of the institution’s mission). Goals of green fiscal measures should include both institutional change and behavioural change; the latter is particularly important as it has direct impact on water quality, effluent volume, etc.
- Many water utilities are moving to increasing block tariff pricing. In many cases price does not reflect scarcity, but income level and use.
- For developing countries “naming and shaming” effluent-producing businesses can be a good first step that could lead to the introduction of a more extensive regulatory framework, including fiscal policy, for the water sector.
- Fiscal policies for sustainable water management should be designed and implemented within a comprehensive policy package that addresses impacts to affected stakeholders and sectors, such as low-income households and the agriculture and energy sectors.
- More research is needed on the stress that policies place on institutions and how they cope with that stress. Additional research is also needed on locales where water price reflects scarcity; on how consumption responds to changes in rate structure or rate increases; whether increasing block tariff structure reduces (wasteful) demand; on which policies provide multiple benefits; and on policies that address sewage wastewater treatment.

**Moderator:**
**Steven Stone**, Chief, Economics and Trade Branch, United Nations Environment Programme
**Panellists:**
- **Pasquale L. Scandizzo**, **Ernesto Sanchez Triana**: Rent seeking and institutional entrepreneurship at Colombia's Cauca Valley Corporation
- **Derek Eaton:** Paying for clean water and wastewater treatment: an analysis of urban water charging and its contribution to green growth
- **Nabil Haque**, **Sungida Rashid**: Environmental surcharge for heavy polluters in Bangladesh - What are the options for regulated entities under this newly introduced fee?

**Discussants:**
- **Mauricio Mira Pontón**, Head of Office, Green and Sustainable Business Office, Ministry of Environment, Colombia
- **Bernard Brès**, **Technopark Director**, International Institute for Water and Environmental Engineering

# Session B1: Overcoming obstacles to green fiscal reform

Fiscal policies are important in a green economy transition and governments have a variety of fiscal instruments at their disposal, including taxing fossil fuel use, reforming energy subsidies and incentivising investment in clean technology. This session examined how to overcome obstacles to green fiscal reform, focusing on the use of mitigation measures for vulnerable firms and low-income households, complimentary measures for carbon taxes and political implications.

The research presented included an analysis of the benefits and challenges to green fiscal reform with a particular focus on environmental tax and subsidy reform across different sectors; a proposal for a carbon tax that could lead to a reduction of electricity prices in Spain while enhancing climate change policy; and an analysis of environmental fiscal reforms, especially in the European Union, focusing on the interaction of economics and political realities.

**Key issues raised during the discussion included:**

- Income distribution and competitiveness are key obstacles to consider in designing and implementing green fiscal reform. Social perception is key to the mitigation of these obstacles, for example, through the strategic use of revenues raised through carbon taxes.
- In the long run, policymakers will need to look for substitutes for carbon taxes. As emissions fall, so too will fiscal revenues.
- Environmental fiscal reform requires a staged approach. One proposal is to relate increases in taxes to gains in efficiency in the preceding year.
- Several research gaps were identified, including analysis of regressive versus progressive effects of taxes; how to achieve revenue neutrality and where it has been achieved; and cost-benefit analysis of different policy options within environmental fiscal reform.

Moderator:
**Ernst Ulrich von Weizsäcker**, Co-President, The Club of Rome (GGKP Advisory Committee Member)
Panellists:
- **Sirini Withana**: Overcoming obstacles to green fiscal reform; GGKP commissioned paper
- **Miguel Buñuel**: Implementing a carbon tax in Spain: how to overcome the fear of inflation?
- **Stefan Speck**: Environmental fiscal reform and transition to a green economy – a political economy analysis

Discussants:
- **Malgorzata Kicia**, Socio-Economic Analyst, DG Environment, European Commission
- **Nils-Axel Braathen**, Principal Administrator, Environment Directorate, Organisation for Economic Co-operation and Development

# Session B2: Fiscal policy reform for an inclusive green economy

In a green economy, growth in income and employment is driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, prevent the loss of biodiversity and ecosystem services, improve the green skills of labour, and strengthen social protection and inclusiveness.

During this session research was presented on: the optimal policy mix for achieving environmental and distributional objectives simultaneously through a combination of a uniform carbon tax with differential income tax decreases (i.e. different level of taxation for different income brackets); and on a framework for fairly distributing the sizeable cost of paying for clean energy infrastructure using large-scale, multi-billion dollar renewable energy deployment programmes, with examples from the UK, Australia, Sweden and the US.

**Key points raised in the discussion included:**

- Implementing a carbon tax requires thinking about the specifics of the redistribution of the revenues raised by the tax.
- Differential income tax cuts seem to be the preferred recycling option even though this would entail a readjustment of the existing tax system.
- Although promoting clean energy has a cost, the decision should be viewed in the context of other costs (such as the cost of not investing in clean energy). These costs should also be fairly distributed among all actors.
- More research is needed regarding the distributional impacts of fiscal policy so that equity and efficiency considerations are addressed.

Moderator:
- **Joe Grice**, Executive Director and Chief Economist, Office for National Statistics, United Kingdom (GGKP Advisory Committee Member)

Panellists:
- **David Klenert**, Gregor Schwerhoff, Ottmar Edenhofer: The distributional incidence of carbon taxation: the double dividend of redistribution
- **Harry Granqvist**, David Grover: Who should pay for clean energy? Distributive justice perspectives

Discussants:
- **Anthony Dzadzra**, Head of Tax Policy, Ministry of Finance, Ghana
- **Eshita Gupta**, Assistant Professor, Department of Policy Studies, TERI University

## Session B3: Innovating clean technology for green growth

Technological innovation and dissemination are critical for achieving a green economy transition. This session explored the role of governments in catalysing innovation in clean technologies. The session also featured a study on the use of fiscal instruments for optimising energy transitions, such as taxes on "dirty" energy, subsidies on "clean" energy and incentives for low energy-consuming technologies, in order to promote an energy transition. Another study presented analysed policy uncertainty and innovation dynamics in the wind industry in 18 OECD countries, revealing that innovation is lower in countries where policies are more uncertain.

**Key issues raised during the discussion included:**

- The public sector needs to decide on a stable framework that sends the right messages to the private sector and stimulates innovation in clean technology.
- The long-term optimal transition will not solely be based on renewables; an energy mix is needed to meet all the challenges ahead, whether they are related to politics, economics or resources.
- Consensus on the right framework and the exact energy mix should be achieved through a multi-stakeholder consultation, which will ensure ownership as well as policy coherence.
- To facilitate the dissemination of technology, the right fiscal instruments should be combined with market-based instruments at the same time.
- A key challenge that remains unaccommodated in the effort to reduce the growing energy demand is the necessity to decouple growth and energy intensity.

Moderator:
- **Raouf Dabbas**, Senior Advisor, Ministry of Environment, Jordan (GGKP Advisory Committee Member)

Panellists:
- **Prudence Dato**: Energy transition under irreversibility: a two-sector approach
- **Elena Verdolini**, Pierre Jockers, Valentina Bosetti: The impact of policy and uncertainty on innovation in the wind industry: evidence from European countries

Discussants:
- **Harald Lossack**, Head of Competence Center, Biodiversity, Forests, Natural Resources, Division Environment and Climate Change, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
- **Joëlle Noailly**, Research Associate, Program "Innovation, Sustainable Growth and Technological Change", Graduate Institute

## Session B4: Promoting green transportation systems

While transport is central to people and communities throughout the world, dependence on fossil fuel-driven motor vehicles has generated a range of environmental, social and economic concerns. This session highlighted the potential for fiscal instruments to reduce environmental impacts from the transport sector, including congestion, air pollution and waste.

Presentations included an assessment of the potential of fiscal instruments (fuel taxes and emissions standards) to significantly reduce environmental impacts in the transportation sector, using the example of maritime shipping; an examination of the advantages of using a feebate system – a fee on inefficient technology with a rebate on efficient vehicles – for new cars in Germany to promote a greener transportation system; and an assessment of product innovation in the car industry as a driver of reduced lifetime of vehicles, and the effectiveness of scrapping schemes in reducing the average age of the vehicle fleet in Italy.

Key issues raised during this session's discussion include:

- Policy interventions in the transport sector are required to protect multiple public goods, such as clean air and a stable climate. Vehicle and fuel taxes, as well as tolls, are important practical tools to address some of the environmental challenges related to transportation.
- Feebate programmes can curb carbon emissions without reducing total welfare and can drive innovation in emissions-reduction technologies by acting as a price signal.
- Car-scrapping programmes improve the overall fleet's fuel efficiency, but the environmental consequences of the generated waste need to be considered when implementing these schemes.
- Research gaps identified included the overall lifecycle consequences of car-scrapping programmes and the impact of various green transportation initiatives on the used car markets.

Moderator:
- **Kurt Lonsway**, Manager, Environment and Climate Change, African Development Bank

Panellists:
- **Gunnar Eskeland**, Haakon Lindstad: Using environmental taxes in the transport sector; GGKP commissioned paper
- **Theodoros Zachariadis**, Sofronis Clerides: Feebates as a fiscal measure for green transportation
- **Giovanni Marin**, Roberto Zoboli: The role of non-waste 'product innovation' for waste production through reduced lifetime of goods

Discussants:
- **Gallo Sow**, Technical Advisor, Ministry of Environment and Sustainable Development, Senegal
- **James Seong-Cheol Kang**, Principal Transport Specialist, Knowledge Solutions Division, Global Green Growth Institute

## Session C1: Fiscal measures for climate change action

Climate change presents a serious threat to economic growth. Reducing greenhouse gas emissions requires a comprehensive set of measures that use government policy and fiscal measures to shift private investment towards lower-carbon options. These include gradually phasing out fossil fuel subsidies and supporting cleaner technology options, putting a price on greenhouse gas emissions, enacting strong energy efficiency performance standards to drive reduced energy consumption, imports and related emissions, and improving general investment frameworks. This session highlighted a range of fiscal measures that can be used to address climate change, with a specific focus on the EU Emissions Trading System reform, macroeconomic effects, and examples from green fiscal reform in the Netherlands.

Key issues raised during the discussion included:

- A fixed or variable carbon tax provides the best opportunity to structurally reform the EU Emissions Trading System. Although a variable carbon tax in the power sector will be inefficient (because it causes different marginal abatement costs in different sectors), it may be politically more palatable than a variable tax in all of the sectors covered by the EU Emissions Trading System.
- A high carbon tax should be combined with the phasing out of fossil fuel subsidies and the collection of rents for social optimality.
- Main lessons from the implementation of Dutch fiscal reform include ensuring the suitability of the tax to the implementation context; the better targeted a tax to a particular tax base, in particular an emission tax base, the less likely the tax can be used to raise stable revenue in the long run. It is also important to ensure the enforceability of taxation.

Moderator:

- **Ian Parry,** Principal Environmental Fiscal Policy Expert, Fiscal Affairs Department, International Monetary Fund

Panellists:

- **Edwin Van der Werf**, Corjan Brink, Herman Vollebergh, Martijn Verdonk: Quantifying the effects of reforming the EU Emissions Trading System. A computable general equilibrium analysis
- **Jan Siegmeier**, Linus Mattauch, Ottmar Edenhofer: Climate policy enhances efficiency: a macroeconomic portfolio effect
- **Herman Vollebergh**: About dykes and windmills: learning from Dutch green fiscal reform

Discussants:

- **Malik Amin Aslam Khan**, Global Vice President, IUCN; Chair, Green Growth Initiative
- **Hilen Meirovich**, Climate Change Lead Specialist, Inter-American Development Bank

## Session C2: Water pricing for sustainable water management

Water is a key prerequisite for human and economic development and for maintaining ecosystems. As consumption continues to increase, the costs for controlling pollution and protecting natural ecosystems are increasing. This session explored the options for water pricing and how they can contribute more substantively to the sustainable financing of water resource management functions. One presentation examined opportunities for the greening of water policy arrangements by bringing fiscal discipline to the water sector and dismantling harmful subsidies. Another presentation explored the effects of water pricing on agricultural water demand and consumption in Spain's Segura River Basin, revealing that water pricing can be used to promote the swap of overused and cheap conventional resources by more expensive and underused desalinated water, which has the potential to limit or even reduce illegal groundwater abstractions.

**Key issues raised during the discussion include:**

- Fiscal policy can play a vital role in facilitating sustainable water management and the inclusive use of available water resources. Water pricing on its own is not suited to achieve all water policy objectives and should therefore be combined with long-term extraction limits and targeted support for the poor to access affordable water and sanitation services.
- Block pricing schemes remain common practice, although de facto they subsidize high water consumption. The social perception of the negative impacts of full cost water pricing needs to change before this measure can be implemented.
- Only multiple price jumps can change water use significantly because the price flexibility of water prices is rather low due to lock-in effects (mainly technology-based) in water use.
- Sustainable water management has the potential to leverage progress in other green growth priority areas, including climate change, nutrition, health and overall resource efficiency.

Moderator:

- **Rene van Berkel**, Chief, Cleaner and Sustainable Production Unit, United Nations Industrial Development Organization

Panellists:

- **Mike Young**: Fiscal instruments and water scarcity; GGKP commissioned paper
- **Dionisio Pérez-Blanco**: Water pricing and water saving in agriculture. Insights from a revealed preference model in a Mediterranean basin

Discussants:

- **Hussein Abaza**, Senior Advisor to the Minister of Environment, Egypt
- **Yimeng Liu**, Assistant Professor, Beijing Normal University, School of Economics and Resource Management

## Session C3: Effectiveness of fiscal policy in eliciting behavioural change

A green growth agenda requires policymakers to examine and influence behaviour that impacts economic, social and environmental outcomes. A better understanding of how and why people consume, preserve or exploit resources has important and far-reaching consequences on the impact of different growth strategies and potential risk management strategies. This session illustrated how behavioural, social and technological changes are crucial components of any green growth strategy.

Research presented in this session included an exploration of farmers' adoption of micro-irrigation systems in the Indian state of Gujarat, which could be enhanced if policymakers helped farmers identify specific crops or cropping systems that mitigate water scarcity and increase economic returns; a study revealing that depending on people's beliefs regarding technology, tax reforms will be better suited if directed to foster private sector research and development or to foster behavioural changes from consumers; and a review of the research of public acceptability of greenhouse gas emission reduction policies in the developed world from 2000 to 2013.

Key issues raised during the discussion include:

- The belief that people have in technology's power to solve environmental problems can influence their behaviour towards environmental taxation. More research is needed in this regard.
- A deeper understanding is needed on the acceptability of environmental taxes versus other taxes and, in particular, their acceptability by different segments of the public and by the specific actors in a market or sector directly affected by a tax.
- Targeted subsidies for small-scale farmers' adoption of micro-irrigation systems can be effective in triggering positive environmental change, but additional supportive policies are required for broader uptake of this technology.
- To change the negative perception of environmental taxes, policymakers could build support by taking into account distributional consequences, strengthening trust in government and public organisations, providing information about how taxes work, earmarking revenue for environmental purposes and public investment in environmentally friendly technologies.

Moderator:

- **Elke Weber**, Jerome A. Chazen Professor of International Business, Columbia Business School, (GGKP Advisory Committee Member)

Panellists:

- **P.K. Viswanathan**, Chandra S. Bahinipati: Determinants of adopting and accessing benefits of environmentally benign technologies: a study of micro irrigation systems in North Gujarat, Western India
- **Estefania Santacreu Vasut**, J. Vives-Rego: Beliefs in technology and support for environmental taxes: an empirical investigation
- **Iva Zvěřinová**, Eva Kyselá, Milan Ščasný: What makes climate change mitigation policies acceptable by public? A review of influential factors
- Discussants:
- **Mark Overman**, Senior Policy Officer, Ministry of Infrastructure and Environment, Netherlands
- **Achim Halpaap**, Senior Manager, Environment and Green Development, United Nations Institute for Training and Research.

# Session C4: Fiscal measures for biodiversity protection and adaptation

Ecosystem services and goods are at the heart of sustainable development and play a major role in supporting and sustaining human well-being. Current consumption and production patterns, however, are affecting the capacity of ecosystems to provide these goods and services. This session examined how economic incentives can shift consumption and production patterns regarding ecosystem-based goods and services to a more green and sustainable economy.

Session presentations included an analysis of whether ecological fiscal transfers in Brazil provide an incentive to designate protected areas within states or serve to refinance public functions such as nature conservation; an assessment of the fiscal sustainability of adaptation expenditures addressing sea level rise by European Union Mediterranean countries; and a description of the policy and funding framework set out under the Convention on Biological Diversity for environmental fiscal reforms for biodiversity.

Key issues raised during the discussion included:

Ecological fiscal transfers in Brazil (ICMS-E) can provide financial resources to local governments to attain conservation goals, as well as have a positive impact on the flow of ecosystem services from protected areas.
The budgetary effect of adaptation measures could prove to impact GDP and production favourably, whilst adaptation expenditure in the European Union Mediterranean region could also have positive impacts on the deficit to GDP ratio.
Fiscal measures are key to the integration of biodiversity and ecosystems protection in national development plans and strategies.

Moderator:

- **Pushpam Kumar**, Chief, Ecosystem Services Economics Unit, Division of Environmental Policy Implementation, United Nations Environment Programme

Panellists:

- **Nils Droste**, Guilherme Lima, Peter May: Ecological fiscal transfers in Brazil - Incentivizing or refinancing conservation?
- **Elisa Delpiazzo**, Gabriele Standardi, Ramiro Parrado: Fiscal implications of climate change impacts and adaptation policies in EU Mediterranean countries: An application to sea level rise
- Markus Lehmann: The Convention on Biological Diversity and environmental fiscal measures

Discussants:

- **David Huberman**, Policy Advisor Economics and Environment, Swiss Federal Department of Foreign Affairs
- **Martina Bozzola**, Environmental Economist, Trade and Environment, International Trade Centre

# Day 2

30 January 2015

## Second high-level panel: Complementary structural policies for effective fiscal reform

This high-level session discussed the broader framework in which green fiscal policies need to be deployed. The session illustrated that a green economy transition requires a holistic and pragmatic package of policy instruments, drawing from leading research by the OECD and the World Bank. The OECD reported on its ongoing analytical effort, "Aligning policies for the transition to a low-carbon economy", undertaken jointly with the International Energy Agency (IEA), the International Transport Forum (ITF) and the Nuclear Energy Agency (NEA). The study examines the unintended negative consequences that pre-existing policy frameworks may have on the effectiveness of climate policies. The World Bank introduced an upcoming report on planning, incentivising and financing decarbonisation pathways, including the tools available to governments to identify efficient and feasible low-carbon trajectories and implement them, in particular using fiscal instruments.

Key issues raised during the discussion included:

- Examples of misaligned policies that can hinder the impact of fiscal measures include fossil fuel subsidies, subsidizing company cars, technical regulations that impede collaboration or promote the use of by-products (such as cement), innovation policies and research-and-development (R&D) tax breaks for incumbents rather than for start-ups, tax breaks for home owners that encourage longer commuting times, and tax breaks for the accelerated depreciation of capital which locks in high-carbon intensity. Policymakers need to understand the consequences of these misalignments and include other government ministries besides those responsible for the environment and climate in the design of coherent policies.
- Complete policy packages rather than stand-alone policies are needed to address multiple market failures.
- The appropriate question is not whether to fully decarbonise, but how to do it cost-effectively by 2100 to avoid temperature rise of more than 2-3 degrees Celsius.
- Policymakers and researchers need to focus on pathways rather than short-term and medium-term targets. Reaching a shorter term target through cheap options (supply curve approach) could cause carbon intensive lock-in.
- Complementary to other actions, financial system reforms are part of the solution to catalyse the transition to a green economy. Only by aligning the supply side (that is, the financial regulatory framework) with climate objectives will it be possible to address systematic market failures and systemic risks, enable innovation and ensure policy coherence. Brazil, China and the United Kingdom, among others, have undertaken innovative efforts to address systematic market failures, systemic risks, enable innovation and provide policy coherence.
- High-level personalities are needed to promote cooperation with other governments and with the business and financial sectors. Government has a key role to play in this regard and in enacting demand-side policies, including public awareness campaigns and eco-labelling.

**Moderator:**

- **Cletus Springer**, Director, Department of Sustainable Development, Organization of American States

**Panellists:**

- **Simon Upton**, Director, Environment Directorate, Organisation for Economic Co-operation and Development
- **Marianne Fay**, Chief Economist, Climate Change Group, World Bank

**Discussants:**

- **Nick Robins**, Co-Director, Inquiry into the Design Options for a Sustainable Financial System, United Nations Environment Programme
- **Jan Olsson**, Environment Ambassador, Ministry of the Environment and Energy, Sweden


## Session D1: Reforming environmentally harmful subsidies

Reforming environmentally harmful subsidies in the energy sector has been identified as essential to ensure the transition to a green economy in which clean energy and energy efficiency play a crucial role. For political, economic or historical reasons, many countries continue to implement subsidy policies that exacerbate the harmful effects of energy use on the environment.

This session focused on the vital role of subsidy reform in moving towards a more sustainable development path of cleaner and more efficient energy. It included a cross-country empirical analysis showing the different effects of subsidies and taxes on countries' carbon dioxide emissions; the implications of the current separation of discourse that exists between private climate finance and subsidies, and the opportunities for unlocking climate-compatible investment by linking these two fields; and a comprehensive assessment of consumer subsidies in Indonesia for gasoline, kerosene, LPG and electricity, which found that only for gasoline would subsidy cuts be progressive.

Key points raised during the discussion included:

- A great disconnect exists between general understanding of the impacts and opportunity costs of subsidies and concrete action taken at national level.
- Compensation programmes and targeting strategies will be crucial for the success of environmental subsidies.
- Research gaps identified include the distributional impacts of reforming environmentally harmful subsidies, the required policy framework to bring subsidies and investments together and shift to a 1:1 proportion of private and public financing, and analysis of the behavioural responses triggered by various narratives used to present green fiscal reform.

Moderator:
- **Karsten Steinfatt**, Counsellor, Trade and Environment Division, World Trade Organization

Panellists:
- **Debashis Chakraborty**, Sacchidananda Mukherjee: Does fiscal policy influence per capita CO2 emission: a cross-country empirical analysis
- **Shelagh Whitley**: At cross purposes: subsidies and climate compatible investment
- **Sebastian Renner**, Jann Lay, Michael Schleicher, Nunung Nuryartono: Poverty and distributional impacts of energy subsidy reform in Indonesia

Discussants:
- **Hendra Setiawan**, Senior Assistant to the Minister for Economics and Sustainable Development, Ministry of Environment, Indonesia
- **Ronald Steenblik**, Senior Trade Policy, Organisation for Economic Co-operation and Development

# Session D2: Measuring the effectiveness of fiscal reform

There is growing recognition that fiscal policy plays a crucial role in transforming economies to become greener and more inclusive. By reflecting the cost of externalities from natural resource use in the prices of goods and services, fiscal policy sends the right signal to the market. Such signals then stimulate a shift in production, consumption and investment to lower-carbon and socially inclusive options. Fiscal reforms also aim to remove perverse subsidies to polluting activities and the unsustainable use of limited resources. Fiscal reform can not only create fiscal space for investing in development priorities, but can also generate revenues for nurturing the environment. This session discusses the strengths and weaknesses of green fiscal reform, including a proposed framework for assessing effectiveness, and research on the net effect of fuel taxes on global emissions and fiscal instruments being used in Asia.

Key issues raised during this session included:

- Fiscal policies can make an enormous difference in transitioning to a greener economy without undermining economic growth. Further research is required to understand where fiscal reform is most successful and which instruments are most useful through ex-post empirical studies that take advantage of new techniques to supplement existing tools.
- Efforts to transition to a green economy are being made in Asia but to date they remain small scale, highly concentrated and slow moving. Most initiatives focus on adopting green technologies and renewable energy, but do not build capacity to develop and innovate in this area. There is scope for more effort to enact coherent policy portfolios systematically.
- Fiscal instruments targeting fuel prices have great potential, although these need to be part of a concerted and coherent policy framework in order to avoid leakage effects.

Moderator:
- **Ann Harrison**, Professor of Multinational Management, Wharton School, University of Pennsylvania (GGKP Advisory Committee Member)

Panellists:
- **Gilbert Metcalf**: A conceptual framework for measuring the effectiveness of green fiscal reforms; GGKP commissioned paper
- **Hari Bansha Dulal**, Rajendra Dulal, Pramod Kumar Yadav: Delivering green economy in Asia: the role of fiscal instruments
- **Thomas Sterner**, Carolyn Fischer, Jared Carbone: The net emissions effects of fuel taxes

Discussants:
- **Aldo Ravazzi Douvan**, Senior Adviser for Green Growth, Sustainable Development and Environmental Fiscal Reform, DG Sustainable Development, Climate and Energy, Ministry of Environment, Land and Sea, Italy
- **Miguel G. Breceda Lapeyre**, Coordinator General for Green Growth, Instituto Nacional de Ecología y Cambio Climático, México

Climate change and measures to respond to it have potentially significant macroeconomic effects and, thus, require fiscal policy solutions. This can include a range of fiscal instruments – taxes, cap-and-trade or hybrids – that can be used to reduce greenhouse gas emissions through a price reflecting their environmental impact. In addition to itself impacting public finances, climate change also calls for deploying fiscal instruments to mitigate its extent and adapt to its effects.

Research presented in this session included an assessment of the impact of limited trading in carbon permits between the European Union Emissions Trading System and the Chinese electricity sector when the latter is constrained by a 10% emissions reduction target; an exploration of the potential and feasibility of developing complementary general equilibrium analyses to provide insight into overall policy interactions between energy, trade and demographic constraints; and an analysis of six interactions of climate change mitigation and fiscal policy that should be considered in a comprehensive public finance framework for efficiency gains and improved intra- and intergenerational distribution.

**Key issues raised during the discussion included:**

- A broader and more integrated approach to climate fiscal policies is needed.
- Limited inter-sectoral trading of carbon permits, if well designed, can offer significant welfare benefits to countries. Understanding these benefits could lead to buy-in by developing countries into international carbon trading.
- There is a need for integrated assessment models that are integrated with mainstream macro-modelling, particularly fiscal and welfare modelling.
- To show a full picture of all the interactions and synergies, an integrated general equilibrium approach is needed.

Moderator:

- **Mohan Munasinghe**, Founder Chairman of the Munasinghe Institute of Development

Panellists:

- **Claire Gavard**, Niven Winchester, Sergey Paltsev: Limited sectoral trading between the EU Emissions Trading Scheme and China
- **Emmanuel Combet**, Jean Charles Hourcade: Carbon tax, pensions and public deficits: the hidden cost of the compartmentalization of expertise
- **Linus Mattauch**, Jan Siegmeier, Max Franks, David Klenert, Anselm Schultes, Ottmar Edenhofer: A public finance perspective on climate policy: Six interactions that may enhance welfare

Discussants:

- **Hoseok Kim**, Senior Research Fellow, Korea Environment Institute
- **Ingrid Jegou**, Manager, Global Platform on Climate Change, Trade and Sustainable Energy, International Centre for Trade and Sustainable Development

# Session E1: Addressing the implementation of environmental taxes in developing countries

Taxes can directly address the failure of markets to take environmental impacts into account by incorporating these impacts into prices. Environmental taxes have been successfully used in many countries to address a wide range of issues, including waste disposal, water pollution and air emissions. Regardless of the policy area, the design of environmental taxes and political economy considerations in their implementation are crucial determinants of their overall success. This session explored how environmental taxation can be an efficient and effective way to promote green growth in developing countries through specific case studies on green tax schemes from South America, Namibia and Vietnam.

**Key issues raised in this session included:**

- The design of environmental fiscal reform should be based on extensive economic analysis, including modelling and simulations. Computable general equilibrium modelling should be used to identify general equilibrium effects.
- The incentive effects of environmental fiscal reforms should be monitored and evaluated in detail because they do not always achieve the environmental target desired and often cannot take effect due to other regulations in place.
- Special consideration should be given to the environmental impact of reforms, as well as the equity implications, the economic efficiency of the measures and the funds needed for enforcement.
- Impact evaluations should be part of the design of environmental fiscal reform so adjustments can be made where needed over the long term.

Moderator:
- **Gunnar Köhlin**, Director, Environment for Development

Panellists:
- **Camila Gramkow**: Fiscal policy towards green growth in emerging economies: the case of Brazil
- **Carlos Chávez**, Hugo Salgado: Using Taxes to Deter Illegal Fishing in ITQ systems
- **Minh Nguyen Anh**: Implication of Vietnam's environmental tax law in the green economy transition process

Discussants:
- **Jay Ram Adhikari**, Under Secretary (Technical) and Bureau Member, IPBES, Ministry of Science, Technology and Environment, Nepal
- **Zhan Feng Dong**, Associate Professor, Chinese Academy for Environmental Planning

# Session E2: Complementary policy for promoting clean technology innovation and adoption

Addressing climate change while promoting economic growth requires the large-scale deployment of green technologies across key sectors such as power generation, transport and energy use. Although many of these technologies are in use, such as wind and solar energy or hybrid and electric cars, they are often more costly than existing fossil fuel-based options.

This session discusses the need for complementary policy options to drive innovation and investment in clean technology. Studies presented included an assessment of how technological availability, market structure and environmental policy affect the choice to install new renewable and efficient fossil electricity production in OECD countries; an analysis of the diffusion process of renewable technology in China, incorporating epidemic, rank, stock and order effects in a theoretical model; and an evaluation of the effectiveness of different policy options in explaining the adoption of fluorescent lamps in different countries, with a focus on middle and low-income countries.

**Key issues addressed in this session included:**

- To enhance the diffusion and adoption of clean technology, policy interventions should be taken using a systemic approach.
- Policy measures should address different aspects to fix the various market failures across the system, including information (raising awareness or learning-by-doing), competition and the barriers to entry, national innovation strategies and general trade policies.
- The sequencing of the different policy interventions should be addressed in the overall strategy on clean technology. The implementation and enforcement of the policies should also be considered.

Moderator:
- **Kevin Urama,** Managing Director/Head of Research, Quantum Global Research Lab AG

Panellists:
- **Francesco Vona**, Elena Verdolini: Drivers of investments in cleaner energy
- **Yang Liu**, Taoyuan Wei: Epidemic, rank, stock and order effects in renewable energy diffusion: model and empirical evidence
- **Suchita Srinivasan**: The light at the end of the tunnel: the impact of policy on the global diffusion of fluorescent lamps

Discussants:
- **Giuseppe Nicoletti**, Head, Structural Policy Analysis Division, Organisation for Economic Co-operation and Development
- **José Palacín**, Senior Economic Affairs Officer, United Nations Economic Commission for Europe

# Session E3: Climate change and the green economy transition

To meet the challenges posed by climate change, enormous investment needs to be redirected towards green technologies, more energy efficient production processes, and greener transport modes and lifestyles. Resources will have the greatest impact if investment and policy decisions are based on sound and accurate knowledge.

This session focused on ways policymakers can stimulate the transition towards a carbon-neutral economy, with specific case studies on climate change public expenditure; an assessment of the Republic of Korea's Green New Deal in reducing carbon dioxide emissions from energy use; and a proposal for modifications to California's Cap-and-Trade Program.

**Key issues addressed in this session included:**

- In the transition to a green economy, integrated financial planning is needed, which requires the engagement and empowerment of finance ministries.
- Green growth stimulus packages have multiple objectives, including economic growth and emissions reductions.
- Green economy measures and policies are more extensive when managed as part of a comprehensive economy-wide approach (that is, addressing both the brown and the green aspects).

Moderator:
- **Sam Bickersteth**, Chief Executive Officer, Climate and Development Knowledge Network

Panellists:
- **Erika Jorgensen**: Climate change public expenditure and institutional reviews: linking fiscal policies to the green economy transition
- **Jonas Sonnenschein**, Luis Mundaca: Fiscal expansion as decarbonization policy. South Korea's Green New Deal 2009-2013
- **Merritt Hughes**: Designing for structural change: modification to the California Cap-and-Trade Program

Discussants:
- **Marcos Eugenio da Silva Sapateiro**, National Focal Point for Sustainable Development, Ministry for Coordination of Environmental Affairs, Mozambique
- **Massimiliano Riva**, Policy Specialist, Innovative Finance, United Nations Development Programme

## Session E4: Effective fiscal policy design

Ambitious green growth strategies require comprehensive and coherent policy portfolios that can enable transformational change across the economy. Effective policy portfolios apply a mix of policy instruments to achieve short-term goals and support long-term green transformation. This includes policies that incentivise green transformation through pricing and fiscal policies, mandate the transformation through regulations, standards or codes, and enable the transformation through government investment.

Studies presented in this session examined different instruments that can be used to promote sustainable and more inclusive growth by shifting the tax burden from income to sources of environmental harm; an analysis of the extent to which partnerships (that target agricultural development, resource use efficiency and renewable energy, and facilitate more sustainable governance structures in land and water management) can contribute to inclusive green growth; and a review of the launch by a group of 14 World Trade Organization countries of negotiations to liberalize trade in environmental goods, which focuses on the elimination of tariffs for a list of 54 products.

**Key issues raised in the discussion included:**

- Reducing global tariff and non-tariff trade barriers in green goods and services can play an important role in inclusive green growth, particularly in developing countries. Non-tariff barriers are relatively more important than tariffs and there is a high complementarity between green goods and services at the project level.
- Public-private partnerships have potential but come at a cost when partners' objectives do not coincide.
- Tax revenues will continue to be an important funding source to facilitate and safeguard international cooperation in inclusive green growth.

Moderator:
- **Paul Steele**, Chief Economist, International Institute for Environment and Development

Panellists:
- **Zaid Asi**: Environmental fiscal reform
- **Jetske Bouma**, Ezra Berkhout: How do partnerships in international cooperation contribute to inclusive green growth
- **Jaime De Melo**, Mariana Vijil: The critical mass approach to achieve a deal on green goods and services: What is on the table? How much to expect?

Discussants:
- **Mezgebu Amha Terefe**, Director, Macro-economic Management Directorate, Ministry of Finance and Economic Development, Ethiopia
- **Kurt van Dender**, Head of Unit, Senior Tax Economist, Centre for Tax Policy and Administration, Organisation for Economic Co-operation and Development

# Closing high-level panel: Catalysing a global research agenda on fiscal policy

The conference's closing plenary focused on how lessons from the discussions and areas identified for future research could be carried forward by the GGKP as part of its mission to promote collaborative and coordinated research as a means of addressing knowledge gaps in green growth theory and practice.

**Key issues raised in the discussion included:**

- Whilst carbon taxes have proved to be efficient in reducing emissions and pollution, eliminating environmentally harmful subsidies should be recognized as a priority. Dismantling subsidies can release considerable resources to fund the transition to greater sustainability.
- Decisiveness and predictability in public policies are essential to signal stability to the private sector and thus promote investment and innovation.
- The specific goals of policies should be clarified at the outset in order to identify the instruments best suited to achieve them.
- GGKP and the research community as a whole should further generate and share evidence of successful policies that support a green economy transition.
- The narrative of transitioning to a green economy should focus on opportunities and address the topics most relevant to policymakers, such as job creation and the generation of tax revenue.
- Successfully transitioning to a green economy will require involving finance ministries and other key stakeholders in the design and implementation of environmental fiscal policies.
- Institution building will play a key role in matching investors with the right investment environment. Further reflection is needed on the role that institutions can play in the transition to a green economy.
- Research is required on the impact of a two-degree climate change policy on resources, jobs and revenue. In particular, the issue of stranded assets (like fossil fuels) needs to be addressed and a strategy developed for moving away from environmentally harmful investments (such as mining and other extractive industries).
- Coordination between regions, countries and sectors is required to address concerns about competitiveness and job losses.
- A vital issue in the fiscal reform debate is the correct valuation of different policy options, externalities, etc. Further research is needed on the revenue raised, costs, jobs created and other impacts of each fiscal instrument to provide policymakers with a quantified portfolio of options.
- Additional issues identified as requiring greater study include the risk of tax evasion when taxing fossil fuels; fiscal instruments to address traffic congestion and mobility in general; the design of an international carbon pricing regime; the best policies for supporting low-income households through environmental fiscal reform; and the specific constraints for developing countries in implementing environmental fiscal policies.

**Closing high-level panel:**

- **Simon Upton**, Director, Environment Directorate, Organisation for Economic Co-operation and Development
- **Ligia Noronha**, Director, Division of Technology, Industry and Economics, United Nations Environment Programme
  **Thomas Sterner**, Professor of Environmental Economics, University of Gothenburg
  **Ian Parry**, Principal Environmental Fiscal Policy Expert, Fiscal Affairs Department, International Monetary Fund

**Closing and awards:**

- **Steven Stone**, Chief, Economics and Trade Branch, United Nations Environment Programme
- **Eshita Gupta**, Assistant Professor, Department of Policy Studies, TERI University
- **Nikolaus Shultze**, Assistant Director-General, Global Green Growth Institute
- **Carlo Carraro**, Department of Economics, University of Venice

# Annex: Participant Evaluations & Summary of Results

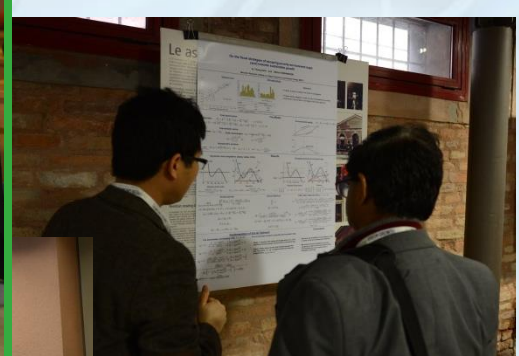
The GGKP Third Annual Conference convened 247 participants, over half of which completed feedback evaluation forms.

Participants represented a number of key sectors: 37 percent came from academia, 22 percent from international organisations, 22 percent from government, 8 percent from business, 7 percent from NGOs and 4 percent from other sectors. Close to 30 percent of participants were from developing countries, and 38 percent were female.

For 73 percent of participants, the GGKP's Third Annual Conference was the first GGKP event they had attended. However, 76 percent indicated they were familiar with the GGKP web platform of those 40 percent have used the web platform's knowledge products; the most utilized knowledge products being the resource library and country data pages.

One of the key aims of the conference was to create dialogue between researchers, experts and policymakers on fiscal instruments, and to identify next steps to ensure the successful transition to a green economy. Of the participants surveyed, 23 percent strongly agreed that the GGKP was successful in this aim, 66 percent agreed, 10 percent were neutral and 1 percent disagreed; no participant strongly disagreed.

In terms of specific feedback received, participants noted the need for greater input and representation from finance ministries at the conference. There were also mixed opinions regarding the role of discussants in the sessions, with many participants suggesting the removal of this role in future. It was suggested that in the future, the conference should draw in more studies focused on experience and policy recommendations, and fewer theoretical and technical papers.



# A Global Partnership

Global Green Growth Institute

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ICTSD
International Centre for Trade and Sustainable Development

United Nations Economic Commission for Africa

NDF NORDIC DEVELOPMENT FUND

iisd International Institute for Sustainable Development / Institut international du développement durable

CDKN Climate & Development Knowledge Network

GREEN TECHNOLOGY CENTER Korea

United Nations Department of Economic and Social Affairs

ICLEI Local Governments for Sustainability

International Trade Centre

CAEP

ACTS African Centre for Technology Studies
Knowledge for Better Livelihoods

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