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CLIMATE AND ENERGY

Promoting the transition to a low carbon economy
and a sustainable energy future

Selected Publications





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About ICTSD

The International Centre for Trade and Sustainable Development (ICTSD) is an independent non-profit organization based in Geneva, Switzerland. We empower stakeholders on trade-related policy issues through information, networking, dialogue, research and capacity building.

“Advancing development through trade-related
policy and agreements”

About the Climate and Energy programme

The Global Platform on Climate Change, Trade and Sustainable Energy carries out well-targeted research and dialogues on key issues at the trade and climate change interface to ensure that trade and climate policies are mutually supportive and contribute to sustainable development.

“Promoting the transition to a low carbon economy
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CLIMATE GOVERNANCE

GLOBAL RULES FOR MUTUALLY SUPPORTIVE AND REINFORCING TRADE AND CLIMATE REGIMES

As the world intensifies its search for global climate change solutions, far too little attention has been paid in global policy-making to the nexus between climate change and international trade. In particular, important opportunities for the trade system to contribute to addressing climate change have been overlooked. The paper's overriding message to both trade negotiators and climate negotiators is that they must begin by acknowledging the inseparability of the two issues with the aim of framing global rules on trade and on climate that are mutually consistent, supportive, and reinforcing.

LEAD AUTHOR: JAMES BACCHUS



CLIMATE CHANGE AND CLEAN ENERGY IN THE 2030 AGENDA: WHAT ROLE FOR THE TRADE SYSTEM?

The United Nations 2030 Agenda for Sustainable Development adopted in September 2015 includes one Sustainable Development Goal (SDG 13) dedicated to urgent action to combat climate change, and another (SDG 7) focused on ensuring access to sustainable energy. Questions of mitigation and adaptation to climate change are also integrated throughout the Agenda, reflecting how central these issues will be to sustainable development prospects for the next 15 years. This think piece explores how trade rules, in particular those established at the multilateral level, could support progress towards the 2030 Agenda's objectives related to climate change and clean energy.



AUTHORS: KASTURI DAS AND KAUSHIK RANJAN BANDYOPADHYAY

THE CASE FOR CLIMATE CLUBS

This paper explores the role climate clubs can play in tackling climate change. Given the structural difficulties of solving the problem at the multilateral level, framing climate deals in smaller groups that provide excludable benefits could allow for greater flexibility and reduce the effort and complexity of deal-making. The paper identifies several tasks climate clubs could perform. It particularly stresses their ability to develop and demonstrate solutions to hard problems.



AUTHOR: DAVID G. VICTOR

ADDRESSING CLIMATE CHANGE: A WTO EXCEPTION TO INCORPORATE CLIMATE CLUBS

This paper explores the possibility for World Trade Organization (WTO) members to establish a general and permanent exception to the most-favoured nation (MFN) principle, which would permit trade benefits under preferential climate-related agreements, so-called climate clubs. This could create the right incentives for countries to make serious commitments on climate change while at the same time promoting the stability of the multilateral trading system.



AUTHORS: BEATRIZ LEYCEGUI AND IMANOL RAMIREZ

WHAT HAS CLIMATE TO FEAR FROM TRADE?

This paper sets out the fears and suspicions of the climate community about the multilateral trade regime, and how the World Trade Organization (WTO) and its policies and assumptions may intentionally or unintentionally hamper global progress in responding to the climate challenge. The author makes five proposals that need to be seriously debated in an attempt to respond to these fears.

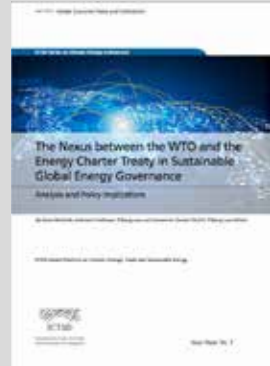


AUTHOR: HENRY DERWENT

THE NEXUS BETWEEN THE WTO AND THE ENERGY CHARTER TREATY IN SUSTAINABLE GLOBAL ENERGY GOVERNANCE: ANALYSIS AND POLICY IMPLICATIONS

A rapid scale-up and deployment of sustainable energy sources is critical for climate change mitigation. Expanding sustainable energy, however, requires a holistic approach to global energy governance. The Energy Charter Treaty and the World Trade Organization are two important regimes that affect trade and investment activity in the energy sector, with consequent implications for climate change mitigation efforts. This paper examines the evolution of the relationship between both institutions, aims to identify the nature of the ever-changing nexus between the two treaties and discusses three possible scenarios for their interaction with an eye to strengthening future energy governance.

AUTHOR: ANNA MARHOLD



CLIMATE CHANGE AND SUSTAINABLE ENERGY MEASURES IN REGIONAL TRADE AGREEMENTS (RTAs): AN OVERVIEW

This paper examines the trend towards including climate change and sustainable energy provisions in RTAs and presents a categorisation of such provisions, identifying regulatory challenges and highlighting obstacles in addressing climate change. It shows the need for flexibility for regulators to address climate change and the necessity for cooperation to implement national and international climate objectives. The authors make recommendations for promoting the development of a sustainable, low-carbon economy through trade agreements.



AUTHORS: MARKUS W. GEHRING, MARIE-CLAIRE CORDONIER SEGGER, FABIANO DE ANDRADE CORREA, PATRICK REYNAUD, ALEXANDRA HARRINGTON AND RODRIGO MELLA

THE SHALE GAS REVOLUTION: IMPLICATIONS FOR SUSTAINABLE DEVELOPMENT AND INTERNATIONAL TRADE

The shale gas boom is transforming energy prices, industrial competitiveness, and geopolitics in several countries. Further investigation and safeguards are therefore needed to ensure that it fosters, rather than hinders, sustainable development. This paper explores the complex effects of the shale gas boom on climate change and international trade and calls on industry, governments, and international agencies to work to reconcile the shale gas revolution with a sustainable development agenda.



AUTHOR: THOMAS L. BREWER

SUSTAINABLE ENERGY

ENABLING THE ENERGY TRANSITION AND SCALE-UP OF CLEAN ENERGY TECHNOLOGIES: OPTIONS FOR THE GLOBAL TRADE SYSTEM

Tackling climate change hinges on a rapid and massive scale-up of clean energy technologies (CETs). The world has witnessed a spectacular growth of CETs in the past two decades, most of it in response to purposeful international, national, and subnational policies. However, there are serious shortcomings and obstacles from uncoordinated policies and inconsistent rules. This paper examines how current trade policies enable or hold back the need for further development of clean energy and identifies a set of policy options for the global trade system to support the scale-up of CETs.

LEAD AUTHOR: RICARDO MELÉNDEZ-ORTIZ



FOSTERING LOW CARBON GROWTH: THE CASE FOR A SUSTAINABLE ENERGY TRADE AGREEMENT

This paper highlights the diversity of trade-related barriers in sustainable energy goods and services, while pointing to a significant governance gap in the area of trade and sustainable energy. It argues that this issue can best be addressed by developing a Sustainable Energy Trade Agreement (SETA), which could initially take the form of a plurilateral agreement and include a critical mass of countries, either within or outside of the WTO.



LEAD AUTHORS: MAHESH SUGATHAN AND RICARDO MELÉNDEZ-ORTIZ

TRANSFORMING THE APEC OUTCOME ON ENVIRONMENTAL GOODS INTO A BROADER SUSTAINABLE ENERGY TRADE INITIATIVE: WHAT ARE THE OPTIONS?

By addressing trade barriers and providing a specific governance framework, sustainable energy trade initiatives (SETIs) can boost the expansion of renewable energy. This paper explores options for transforming the Asia-Pacific Economic Cooperation (APEC) initiative on tariff reductions for selected environmental goods into a more comprehensive SETI. It suggests extending its geographical coverage, expanding its mandate to other trade-related issues, and ultimately transforming it into a binding Sustainable Energy Trade Agreement (SETA).



AUTHOR: ICTSD

REDUCING IMPORT TARIFFS FOR ENVIRONMENTAL GOODS: THE APEC EXPERIENCE

In 2011, 21 APEC economies pledged to reduce that MFN-applied tariffs for environmental goods to 5 percent or less by the end of 2015. This paper describes how individual APEC economies have implemented tariff reductions and which HS subheadings and categories of environmental goods may benefit most. It also considers the trade coverage of tariff reductions, while discussing challenges faced in estimating trade flows potentially impacted by tariff reductions. The analysis of the APEC experience in implementing tariff reductions may provide some lessons for ongoing negotiations on environmental goods.

AUTHOR: RENE VOSSENAAR



MUTUAL RECOGNITION AGREEMENT ON CONFORMITY ASSESSMENT: A DELIVERABLE ON NON-TARIFF MEASURES FOR THE EGA?

While tariffs in environmental goods will be reduced or eliminated under the Environmental Goods Agreement (EGA), non-tariff measures grow in number and relative importance. Numerous studies reveal that procedural obstacles such as conformity assessment procedures are particularly burdensome. Interestingly, such procedures are amenable to co-operative solutions within trade-negotiating frameworks. This paper therefore proposes a plurilateral mutual recognition agreement on conformity assessment procedures which could be framed under the EGA. It identifies a set of building blocks for such an agreement, and raises a few process-related considerations for WTO delegates to ponder upon.

AUTHOR: MAHESH SUGATHAN



IDENTIFYING PRODUCTS WITH CLIMATE AND DEVELOPMENT BENEFITS FOR AN ENVIRONMENTAL GOODS AGREEMENT

This paper surveys trade among key economies in the product sub-categories used as the basis for the negotiations of the Environmental Goods Agreement. It also analyses additional climate-related products that could be added, as well as the trade flows and tariffs associated with them. Finally, the paper offers suggestions for improving both transparency in the negotiations and data on trade in environmental goods.



AUTHOR: RENE VOSSENAAR

ADDRESSING ENERGY EFFICIENCY PRODUCTS IN THE ENVIRONMENTAL GOODS AGREEMENT: ISSUES, CHALLENGES AND THE WAY FORWARD

Including energy efficiency technologies in the Environmental Goods Agreement (EGA) is an important contribution trade policy could make to climate change mitigation. There are however some challenges. These are investigated in this paper. The author makes proposals for dealing with energy efficiency technologies in the EGA context and raises important issues for consideration by trade policymakers and negotiators, including the relevance of international standard-setting schemes and the need to reflect the development dimension.



AUTHOR: MAHESH SUGATHAN

THE APEC LIST OF ENVIRONMENTAL GOODS: AN ANALYSIS OF THE OUTCOME & EXPECTED IMPACTS

This paper examines the Asia-Pacific Economic Cooperation (APEC) initiative on tariff reductions for selected environmental goods finding that the tariff cuts will likely have a small impact as the respective applied tariffs are already near or at zero in the APEC context. The author argues that this highlights the need to address other remaining obstacles to environmental goods, particularly non-tariff barriers, and that the initiative may provide an impetus and lessons for the WTO.

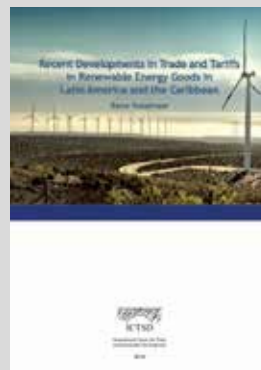


AUTHOR: RENE VOSSENAAR

RECENT DEVELOPMENTS IN TRADE AND TARIFFS IN RENEWABLE ENERGY GOODS IN LATIN AMERICA AND THE CARIBBEAN

The Latin America and Caribbean (LAC) region is rich in clean energy resources. Several countries have increased investment in non-conventional renewable sources of energy, with a strong growth in particular in solar and wind energy. This paper explores the possible implications of rapidly growing markets for renewable energy technologies on extra- and intra-regional LAC trade and on the possible contribution of trade and trade policy to the further deployment of these technologies in the region. It assesses emerging trade in renewable energy equipment and components in the LAC region and describes developments in import tariffs.

AUTHOR: RENE VOSSENAAR



INTERNATIONAL TRADE AND ACCESS TO SUSTAINABLE ENERGY: ISSUES AND LESSONS FROM COUNTRY EXPERIENCES

Addressing trade barriers to sustainable energy goods offers a promising avenue for responding to the challenge of energy poverty. This paper looks into both domestic and trade-related barriers that restrain growth and the uptake rate of solar technologies. The authors offer proposals for overcoming them, including the creation of a Sustainable Energy Trade Agreement (SETA).



AUTHORS: HARI MANOHARAN AND MADHAVAN NAMPOOTHIRI

CLIMATE CHANGE AND A RENEWABLE ENERGY SCALE UP: RESPONDING TO CHALLENGES POSED TO THE WTO

Against the background of conflicts between the trade and climate change regimes, this paper discusses the costs and benefits of options for adjusting WTO rules to provide additional policy space under the General Agreement on Tariffs and Trade (GATT) and the Agreement on Subsidies and Countervailing Measures with regard to subsidies or other measures to mitigate climate change and promote renewable energy. The authors propose and evaluate eight concrete proposals for addressing this challenge.



AUTHORS: AMY PORGES AND THOMAS L. BREWER

RENEWABLE ENERGY AND PROCESS AND PRODUCTION METHODS

Diverging processes and methods of production can have a critical impact on climate change mitigation. This paper explores the extent to which renewable energy and non-renewable energy may be regulated, labelled, or taxed differently to encourage the growth of the renewable energy sector, or whether the likeness of the product prohibits doing so in international trade law relating to process and production methods (PPMs).



AUTHOR: THOMAS COTTIER

SECURING POLICY SPACE FOR CLEAN ENERGY UNDER THE SCM AGREEMENT: ALTERNATIVE APPROACHES

This paper shows the need for securing policy space for clean energy policies in order to allow the relative pricing of clean and dirty energy to reflect climate and other environmental externalities. It explores the difficulties surrounding a possible amendment of the Subsidies and Countervailing Measures (SCM) Agreement and suggests alternatives, such as an interpretive understanding of the SCM agreement or a waiver for existing clean energy policies.



AUTHOR: ROBERT HOWSE

SUBSIDIES, CLEAN ENERGY, AND CLIMATE CHANGE

This paper offers an overview of the types of energy subsidies used in the conventional and renewable energy sectors, and their relationship with climate change, in particular GHG emissions. The authors discuss the WTO's Agreement on Subsidies and Countervailing Measures (ASCM), before surveying a number of alternatives for improving the ability of subsidies disciplines to internalize climate change costs of energy production and consumption.



AUTHORS: ILARIA ESPA AND SONIA E. ROLLAND

LOCAL CONTENT REQUIREMENTS AND THE RENEWABLE ENERGY INDUSTRY – A GOOD MATCH?

This paper assesses the use, potential usefulness and legality of local content requirements (LCRs) in renewable energy policy. The authors identify some initial basic conditions that determine their effectiveness in creating domestic industries. They further examine whether or not LCRs and medium-term innovation could be aligned. The paper also discusses the legality of LCRs under WTO law.



AUTHORS: JAN-CHRISTOPH KUNTZE AND TOM MOERENHOUT

REMOVING TRADE BARRIERS ON SELECTED RENEWABLE ENERGY PRODUCTS IN THE CONTEXT OF ENERGY SECTOR REFORMS

This paper examines the effects of removing import tariffs and local content requirements (LCRs) for renewable energy goods on different economic and environmental variables, including exports and imports, carbon emissions, energy and electricity prices, employment and income. It finds that LCRs and feed-in tariffs may not be necessary for sustained growth and trade in renewable energy equipment and confirms the role of trade reforms in promoting the expansion of renewables.



AUTHOR: VEENA JHA

DOES IT FIT? AN ASSESSMENT OF THE EFFECTIVENESS OF RENEWABLE ENERGY MEASURES AND OF THE IMPLICATIONS OF THE CANADA-RENEWABLE ENERGY/FIT DISPUTES

This paper analyses the Canada-Renewable Energy/FIT case to determine whether the World Trade Organization's (WTO) Agreement on Subsidies and Countervailing Measures is in need of reform. The authors consider the nature of the measures involved in this case, as well as how these measures fared in the case and how such measures should be treated under WTO law. The findings of this paper are intended to be applicable to a wider group of measures.



AUTHORS: AARON COSBEY AND LUCA RUBINI

PUSHING THE RENEWABLE ENERGY AGENDA FORWARD: SOME SELECT LESSONS FROM THE GATS

In the context of an increasing shift towards renewable energy generation, this paper calls for enhancing World Trade Organization (WTO) members' understanding of what comprises a Sustainable Energy Services sector, either through a new Trade in Services Agreement or through negotiations initiated under the WTO. The paper represents a first attempt at providing a snapshot of what may be possible in this regard.



AUTHOR: JOHANNES BERNABE

TRADE REMEDIES AND DEVELOPMENT OF RENEWABLE ENERGY

This paper addresses the different types of trade remedies, specifically anti-dumping, subsidies and countervailing duties, and safeguards, and the challenges that they pose to the development of renewable, non-GHG emitting energy. The author proposes specific solutions and warns that current anti-dumping practices prevent the rapid cost and price decreases that are necessary to make clean energy technologies viable competitors to fossil fuels.



AUTHOR: GARY HORLICK

TRADE REMEDIES ON CLEAN ENERGY: A NEW TREND IN NEED OF MULTILATERAL INITIATIVES

This paper highlights the use of trade remedies which have increasingly been directed at clean energy, particularly in countries with high clean energy production levels. It discusses the conflict between this use of trade remedies and both national climate goals and internationally agreed environmental objectives. The author explores different multilateral options for limiting the use of trade remedies on clean energy, particularly improving WTO agreements on trade remedies.



AUTHOR: JONAS KASTENG

CLEAN ENERGY AND ACCESS TO INFRASTRUCTURE: IMPLICATIONS FOR THE GLOBAL TRADE SYSTEM

Meeting climate change targets and ensuring security of energy supply requires a global network for electricity. While traditional trade disciplines help ensure market access, additional measures are needed to guarantee availability of fixed infrastructure and timely access to transportation pipelines and distribution systems. This paper outlines the characteristics of energy transportation and explains the WTO disciplines relevant for trade in clean energy via fixed infrastructure. It suggests adapting trade rules to the challenges of integrating clean energy transported via fixed infrastructure.



AUTHOR: YULIA SELIVANOVA

CARBON MARKETS



CARBON MARKET CLUBS UNDER THE PARIS CLIMATE REGIME: CLIMATE AND TRADE POLICY CONSIDERATIONS

Carbon markets will continue to play a key role in the mitigation effort. Cooperation in carbon market clubs can help reduce competitiveness and carbon leakage concerns, thus incentivising the uptake of more and increasingly ambitious carbon markets. This policy brief assesses the potential for carbon market clubs in the context of the Paris climate regime from a climate and trade policy perspective. It shows that additional efforts will be needed within and outside the UNFCCC and explores the challenges and opportunities the trade system may pose in this regard.



AUTHOR: SONJA HAWKINS

INTERNATIONAL COOPERATION UNDER ARTICLE 6 OF THE PARIS AGREEMENT: REFLECTIONS BEFORE SB 44

Article 6 of the Paris Agreement can be considered a major success and a minor miracle. This paper highlights issues associated with Article 6 that have emerged since the adoption of the Paris Agreement and that will need to be considered before the article becomes operational. Broadly, it discusses provisions that may require clarification, and their implications, as well as Article 6 linkages to other parts of the agreement.



AUTHOR: ANDREI MARCU

CHINA'S NATIONAL EMISSIONS TRADING SYSTEM: IMPLICATIONS FOR CARBON MARKETS AND TRADE

This paper explores the implications of a national ETS in China for carbon market developments globally and the potential formation of “carbon market clubs”. It examines how the presence of a Chinese ETS may affect competitiveness and carbon leakage concerns in other countries, and, related to that, the further uptake and ambition of carbon markets. The paper also discusses the design of China’s national ETS. It identifies key challenges the scheme may encounter and makes recommendations for designing and running an effective ETS that may be linked with other schemes in the future.



AUTHOR: JEFF SWARTZ

LINKING EMISSIONS TRADING SCHEMES: CONSIDERATIONS AND RECOMMENDATIONS FOR A JOINT EU-KOREAN CARBON MARKET

Linking emissions trading schemes (ETs) offers many benefits, including greater cost efficiency as well as reduced carbon leakage and competitiveness concerns. This paper analyses the case for linking the EU and South Korean ETs. Drawing on lessons from previous linkage efforts by the EU, the authors assess design elements of the South Korean scheme that have the potential to facilitate or prevent linkage, and make recommendations for a linked EU-Korean carbon market.



AUTHORS: INGRID JEGOU AND SONJA HAWKINS

CREATING A CLUB OF CARBON MARKETS: IMPLICATIONS OF THE TRADE SYSTEM

In order to promote cap-and-trade policies, ensure their integrity, and drive deep emission reductions, this paper proposes the formation of a club of carbon markets – a group of jurisdictions that develop harmonized standards for carbon market operations and mutually recognize each other’s emissions units. While such a club can offer considerable benefits, there is also a need to consider interactions with the multilateral trading system, as shown in the paper.



AUTHORS: NATHANIEL KEOHANE AND ANNIE PETSOK

TECHNOLOGY

TECHNOLOGY IN THE 2015 PARIS CLIMATE AGREEMENT AND BEYOND

This paper reviews the experience of the Technology Mechanism, which deals with the development and transfer of climate technologies, and analyses the challenges and difficulties for international action to improve the diffusion of climate-related technologies. The authors make concrete proposals for climate technology development and transfer arrangements under the Paris climate agreement and raise a number of questions that require further reflection.



AUTHORS: HELEEN DE CONINCK AND AMBUJ SAGAR

REALIZING THE POTENTIAL OF THE UNFCCC TECHNOLOGY MECHANISM: PERSPECTIVES ON THE WAY FORWARD

In this paper, three think pieces discuss the operationalisation of the Technology Mechanism (TM). The first piece addresses how the TM can deliver a novel approach focused on technology development and innovation rather than simply transfer. The second piece highlights issues facing African countries, stressing their need for endogenous capabilities to adopt and use available technologies. The final piece examines technology transfer provisions in international environmental agreements and seeks to draw lessons for the TM.



AUTHORS: JOHN MUGABE AND PADMASHREE GEHL SAMPATH

OVERCOMING THE IMPASSE ON INTELLECTUAL PROPERTY AND CLIMATE CHANGE AT THE UNFCCC: A WAY FORWARD

Intellectual property (IP) is a contentious issue in climate negotiations. This paper seeks to untangle the issues that lie behind the impasse on IP and climate change. The authors address three aspects: the parallel with access to medicines, the dual role of IPRs in fostering innovation and contributing to technology transfer and dissemination, and lessons from empirical evidence. They propose guidelines for discussion to inform work on IPR-related aspects of climate change technologies.



AUTHORS: AHMED ABDEL-LATIF, JEROME REICHMAN, KEITH E. MASKUS AND PEDRO ROFFE

TRANSPORT EMISSIONS

ARCTIC BLACK CARBON FROM SHIPPING: A CLUB APPROACH TO CLIMATE-AND-TRADE GOVERNANCE

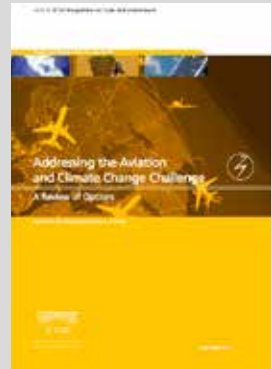
This paper assesses options for mitigating black carbon emissions from shipping in the Arctic region and highlights the need for a comprehensive Arctic Black Carbon (ABC) agreement. Since territorial presence in the region is limited to a few countries and the shipping industry is a centrally involved sector, the author proposes finding a geographically-limited club-like arrangement where participants share the benefits of the club but only after meeting its requirements.

AUTHOR: THOMAS L. BREWER



ADDRESSING THE AVIATION AND CLIMATE CHANGE CHALLENGE: A REVIEW OF OPTIONS

The inclusion of aviation in the EU Emissions Trading System has met strong resistance from third countries. At the same time, it has accelerated the search for a solution within the International Civil Aviation Organisation (ICAO). This paper analyses different options for addressing the aviation and climate change challenge, and proposes a state-centred approach creating a legally binding stand-alone treaty, administered by ICAO or the UNFCCC.



AUTHORS: CAIRO A. R. ROBB AND MARKUS W. GEHRING

AGRICULTURE

LOW-CARBON AGRICULTURE IN BRAZIL: THE ENVIRONMENTAL AND TRADE IMPACT OF CURRENT FARM POLICIES

This paper examines Brazil's climate policies in the area of agriculture, looking at how these may affect trade and how successful they have been in achieving broader public policy objectives such as reducing GHG emissions. It suggests that despite early difficulties and a relatively slow implementation process, the policies may help to increase agricultural productivity and efficiency, while simultaneously decreasing GHG emissions.



AUTHORS: MARCELO MARQUES DE MAGALHÃES AND DIVINA APARECIDA LEONEL LUNAS LIMA

INTERNATIONAL TRADE DISCIPLINES AND POLICY MEASURES TO ADDRESS CLIMATE CHANGE MITIGATION AND ADAPTATION IN AGRICULTURE

This paper draws attention to the contribution of agriculture to GHG emissions and discusses methods through which these emissions can be mitigated, highlighting the possibilities offered by carbon sequestration. The paper discusses the danger of climate policies being abused to promote domestic, political and trade concerns and highlights the necessity for a broad international consensus if a clash between climate and trade policies is to be avoided.



AUTHOR: DAVID BLANDFORD





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