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UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

Subsidiary Body for Scientific and Technological Advice

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Bonn, 14–25 May 2012

Item 6 of the provisional agenda

Research and systematic observation

Views on specific themes to be addressed at the research dialogue, including information on technical and scientific aspects of emissions and removals of all greenhouse gases from coastal and marine ecosystems

Submissions from Parties

1. The Subsidiary Body for Scientific and Technological Advice (SBSTA), at its thirty-fifth session, agreed that the SBSTA research dialogue on developments in research activities relevant to the needs of the Convention should continue, on a regular basis, at SBSTA 36 and beyond.¹
2. Also at its thirty-fifth session, the SBSTA invited Parties to submit, by 5 March 2012, their views on specific themes to be addressed at the research dialogue to be held in conjunction with SBSTA 36.²
3. The SBSTA further invited Parties to provide information on the technical and scientific aspects of emissions by sources, removals by sinks, and reservoirs of all greenhouse gases, including emissions and removals from coastal and marine ecosystems such as mangroves, tidal salt marshes, wetlands and seagrass meadows, with a view to identifying and quantifying the impact of human activities. This information would be considered as a theme for the next research dialogue, also taking into account the submissions received in accordance with paragraph 2 above.³

¹ FCCC/SBSTA/2011/5, paragraph 37.

² FCCC/SBSTA/2011/5, paragraph 39.

³ FCCC/SBSTA/2011/5, paragraph 43.

FCCC/SBSTA/2012/MISC.2

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4. The secretariat has received five such submissions.⁴ In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced* in the languages in which they were received and without formal editing.

⁴ Also made available at <<http://unfccc.int/5901.php>>.

* These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

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* This submission is supported by Croatia, Serbia, the former Yugoslav Republic of Macedonia and Turkey.

Paper no. 1: Denmark and the European Commission on behalf of the European Union
and its member States

**This submission is supported by Croatia, the Former Yugoslav Republic of Macedonia,
Serbia and Turkey**

Copenhagen, 5 March 2012

**Subject: Submission on views on specific themes to be addressed at the research dialogue
meeting, to be held in conjunction with the thirty-sixth session of the SBSTA**

1 Introduction and General Comments

The European Union and its 27 Member States (EU), welcome the conclusions of SBSTA at its thirty-fifth session (FCCC/SBSTA/2011/L.27) and the invitation to submit views on specific themes to be addressed at the research dialogue meeting, to be held in conjunction with the thirty-sixth session of the SBSTA as well as the COP decision FCCC/SBSTA/2011/L.27/Add.1 (update COP Decision 9/CP.11) on the continuation of the Research Dialogue and its use as a forum for

- (a) Discussing needs for climate change research and research-related capacity building, particularly those of developing countries, to support the work of the Convention;
- (b) Conveying research findings and lessons learned from activities undertaken by regional and international research programmes and organisations of relevance to the Convention.

Both reflect the crucial importance of research and its communication for the work of the Convention.

On a practical level, the EU is of the opinion that the Research Dialogue meetings should take place annually and would benefit from having an update on progress within international and regional research programmes whilst tackling a balanced selection of themes. The EU also suggest that sufficient space is given for discussion and that time is not taken up wholly by presentations.

The EU suggests that Research Dialogue meetings cover some or all of the following generic items:

- Information on outcome of IPCC workshops and expert meetings;
- Information on emerging findings and recent information from international/regional research programmes of relevance to the work of the UNFCCC (e.g. EU's Seventh Framework Programme (FP7), Earth System Science Partnership (ESSP), World Climate Research Programme (WCRP), International Geosphere-Biosphere Programme (IGBP), and International Human Dimensions Programme on Global Environmental Change (IHDP) and the developing Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA, sponsored by UNEP, WMO, and UNESCO).

- Other relevant research and observation activities and programmes such as the Global Framework for Climate Services (GFCS), the Global Climate Observing System (GCOS), the Global Research Alliance on Agricultural Greenhouse Gases (GRA) and European initiatives such as Global Monitoring for Environment and Security (GMES) and the European Climate Research Alliance (ECRA);
- An update on observed changes in the climate system (e.g. the evolution of the sea ice extent and volume, glacier and permafrost melt, temperature, sea level rise etc.) and their socio-economic and climatic implications;
- Examples of new research outcomes from national research programmes and particularly those from developing countries.

2 Priority themes for the Research Dialogue meeting at SBSTA 36

In addition to the matters raised in paragraph 8 of the SBSTA 35 conclusions, the EU suggests that the Research Dialogue meeting at SBSTA 36 covers the following themes:

- Consideration of practical mitigation options for achieving the emission pathways consistent with the 2°C goal, with a focus on 2050, the scale of contribution different options might make, and including analysis of co-benefits and adaptation/mitigation win-win solutions. In this context consideration could be given to the technical and scientific aspects of emissions and removals of greenhouse gases from land use and land cover changes;
- Socio-economic, emission and land use scenarios: new climate forcing and socio-economic scenarios (Representative Concentration Pathways (RCPs) and their underlying storylines), as well as the related new global and regional climate scenarios resulting from inter-comparison projects (CMIP5 and CORDEX);

The EU considers that these issues could be explored in more detail at a workshop focussing on the practical options to achieve global reductions of 50% by 2050 and setting mitigation options in a wider socio-economic context, taking both a global and a national or regional perspective.

The EU suggests also that representatives of PROVIA provide a report on progress on this important new programme at the dialogue at SBSTA 36.

3 Optional themes to be addressed at future Research Dialogue meetings

The EU suggests the following optional themes, with the understanding that, according to Conclusion FCCC/SBSTA/2011/L.27, Parties would prior to a SBSTA session during which a research dialogue would be held, submit their views on specific themes to be addressed at the next research dialogue meeting:

- Progress made in the development of electricity and energy storage technologies;

- Socio-economic aspects of responding to climate change: topics in support of the NWP;
- Impact and costs of adaptation to climate change, including considering possible high-end scenarios (i.e. $>2^{\circ}\text{C}$) and limits to the resilience of natural and human systems (including research needs);
- Tipping points and abrupt and irreversible changes;
- Attribution of extreme events;
- Cities and Climate Change (socio-economic focus);
- Short-lived climate forces and mitigation potential in the agricultural sector (soil carbon, methane, etc.)
- Economic modelling of mitigation policies at the global and regional level.

Submission on Specific Research Themes
by
Republic of The Gambia
on behalf of
the Group of Least Developed Countries (LDCs)

Views from Parties on specific themes to be addressed at the research dialogue meeting to be held in conjunction with the thirty-sixth session of the SBSTA, *and* Information from Parties on the technical and scientific aspects of emissions by sources, removals by sinks.

BACKGROUND

Article 4.1 of the Climate Change Convention states that all Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:

- (g) Promote and cooperate in scientific, technological, technical, socio-economic and other research, systematic observation and development of data archives related to the climate system and intended to further the understanding and to reduce or eliminate the remaining uncertainties regarding the causes, effects, magnitude and timing of climate change and the economic and social consequences of various response strategies;
- (h) Promote and cooperate in the full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and to the economic and social consequences of various response strategies;

According to Article 5 of the Convention, Parties shall support and further develop, as appropriate, international and intergovernmental programmes and networks or organizations aimed at defining, conducting, assessing and financing research, data collection and systematic observation, taking into account the need to minimize duplication of efforts;

Climate relevant Research and Information:

Accordingly, climate and climate change research is carried out nationally, regionally and globally to better understand the science behind climate variability and change. The evidence and information acquired from evolving understanding of the physical, natural, social and economic aspects of climate change can then provide an essential basis for issues under consideration in the UNFCCC process. At the regional and international levels, climate-related research is conducted and coordinated by a variety of international programmes and organizations. The major ones are the International Council for Scientific Union (ICSU), the World Climate Research Programme (WCRP), the International Geosphere–Biosphere Programme (IGBP), the Man and Biosphere (MAB) Programme, the International Human Dimensions Programme (IHDP), the integrated

programme of biodiversity science and its societal relevance (DIVERSITAS), the Arctic Monitoring and Assessment Programme (AMAP), the Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA), the International START Programme, the Asia Pacific Network for Global Change Research (APN), the Inter-American Institute for Global Change Research (IAI), as well as partnerships and networks, such as the Earth System Science Partnership. At the national level, particularly in Least Developed Countries, research in climate change is limited to simulation of impacts of climate change at the sectoral level. Information on national and cooperative research activities can be found in Parties' national communications.

Climate change relevant research focuses on a wide range of topics such as climate processes, climate variability, climate modeling and projection, including extreme events; impacts of and vulnerabilities to climate change, including adaptation to it, and climate change mitigation. It also covers a broad spectrum of sectors, society, economies and ecosystems, as well as cross-cutting and interdisciplinary research.

The UNFCCC secretariat works in close collaboration with these regional and international research programmes and organizations and facilitates dialogue and communication on the research needs and priorities expressed by Parties of the Convention to the scientific community. The Secretariat also compiles information of research results and capacity building needs contained in National Communications of Parties.

Assessment and Communication of Scientific Information:

The Intergovernmental Panel on Climate Change (IPCC) has a well established role in the Convention process in communicating scientific information to the Convention through its regular assessment reports and its wide range of special reports and technical papers. Although it does not carry out its own research, it plays a key role in assessing the information from worldwide climate research in peer-reviewed literature, journals, books and other sources. The information contained in IPCC reports covers the whole spectrum of climate and climate change from causes (drivers and attribution), technical and scientific aspects of emissions by sources, removals by sinks, the mitigation of these emissions and concentrations in the atmosphere, impacts of climate change and adaptation to these impacts, and climate change policy relevant and decision making information. It also has an important function in identifying priority needs for further research activities. The Outreach Task Force of IPCC develops materials to support dissemination of climate change information that is useful for adoption at regional and national levels.

LDC Group Submission for the Research Dialogue:

Based on the background information provided above and the urgent need for further research to promote understanding of the science of climate variability and change, narrow down uncertainties and facilitate decision-making, policy formulation and proper planning under changing climate, the LDC Group submits the following for consideration and inclusion in the presentations and discussions during the planned Research Dialogue.

Research Themes

1. Emerging issues and research needs on them since the IPCC 4th Assessment Report (AR4);
2. Temperature stabilization scenarios and the review of the long-term global goal at different levels of increased averaged surface temperatures (1.5°C, 2°C, 3°C, 4°C, etc.) and the adaptation needs and costs at these different levels of increased global warming;
3. Low mitigation scenarios, including *inter alia*, technological and economic feasibility, policy implications for short, medium and longer term and including regional economic implications of mitigation pathways.
4. Temporal dynamics of the airborne fraction and its relation to the efficiency of natural sinks;
5. Geo-engineering techniques and the many uncertainties surrounding them especially regarding effects on physical climate system, biogeochemical cycles, possible impacts on human and natural systems, effectiveness and costs as well as long term commitment;
6. End-to-end research on global warming and sea level rise estimates with treatment of the full effects of changes in ice sheet flow Greenland and Antarctica;
7. Develop downscaling models to improve climate change scenarios at country level in LDC's and support the quantification of seasonal forecasting and the intensity and frequency of extreme weather events (floods, drought, rainfall etc.)
8. Development of methods and tools to study and report on anthropogenic greenhouse gas emissions and removals from blue carbon ecosystems (oceans, mangroves, salt marshes sea grasses, meadows, etc);

Information on:

1. Information on emerging issues and recent climate change research findings and uncertainty management, particularly arising from the IPCC Fifth Assessment process, the UNEP Global Environment Alert System (GEAS), etc.;
2. More information on the IPCC new «representative concentration pathways» (RCPs) selected to allow investigating a wide range of possible future scenarios;
3. Information on blue carbon and the multiple impacts of carbon dioxide on oceans, ocean acidification and related consequences for fisheries, and other related sectors and ecosystems;
4. Research needs to support policies and strategies on adaptation (including extreme weather and climate events), mitigation (including technical and socio-economic aspects of the achievement of low emission pathways) and the much under-appreciated co-benefits of mitigation;
5. Gaps in data and information, and the need to strengthen and expand systematic observation networks necessary for understanding changes in the climate and supporting research;
6. Improved data from the largest glaciers and ice caps and a more mechanistic understanding of glacier dynamics, are critically needed to understand full impacts of sea level rise on Island and deltaic nations;
7. Sector specific and integrated research capacity building needs and priorities, in particular in the LDC's, including water resources, agriculture, coastal ecosystems and blue carbon;

8. Ways and means to enhance communication of research outcomes and the science-policy dialogue under the Convention.

These list are non-exhaustive

Research and Systematic Observation – Research Dialogue

**Submission by the Republic of Nauru
on behalf of the Alliance of Small Island States**

5 March 2012

Research and systematic observation (SBSTA), Views from Parties on specific themes to be addressed at the research dialogue meeting to be held in conjunction with the 36th session of the SBSTA.

Introduction

The Alliance of Small Island States (AOSIS) welcomes the conclusions on Research and Systematic Observation at the 35th session of SBSTA (FCCC/SBSTA/2011/L.27/Add.1), which highlight the importance of the research dialogue and the integral role that the IPCC plays in providing scientific information to Parties. Furthermore, AOSIS welcomes the invitation to submit views on the specific themes to be addressed at the research dialogue meeting to be held during the 36th session of the SBSTA.

AOSIS considers that the research dialogue is an important forum to facilitate discussions on scientific issues related to meeting the needs of the Convention.

AOSIS notes that the conclusions on this agenda item call for the research dialogue to be utilized “as a forum to discuss needs for climate change research and research-related capacity building, particularly those of developing countries; and to convey research findings and lessons learned from activities by research programmes and organizations, which are of relevance to the Convention.” Additionally, the SBSTA “invited relevant regional and international research programmes and organizations active in climate change research to provide, in the context of the research dialogue, submissions with information on developments in their research activities relevant to the Convention, including with respect to the long-term global goal referred to in decision 1/CP.16, paragraph 4, as appropriate.” In this context, the long-term global goal is a key research area that should be considered during the SBSTA dialogue on research. Furthermore, the focus on the long-term global goal should be on those particularly vulnerable developing countries such as SIDS and LDCs who will be most affected by the impacts of climate change and the ambition level of the long-term global goal.

Key research areas for discussion

The research dialogue has an important role to play, not only in facilitating an exchange between climate change research communities but to discuss those research findings which have policy relevance for the Convention. AOSIS considers that the IPCC’s Fifth Assessment Report (AR5) to be released during 2013 and 2014 and the 2013-2015 review agreed in Cancún are important

processes where the research dialogue can contribute to and link with, as they will be essential to the discussion on the long-term global goal. Furthermore, both the long-term goal and these processes should continue to be discussed annually as part of the research dialogue.

AOSIS proposes that the following issues related to the long-term global goal are discussed during the research dialogue.

- An assessment relating to emission scenarios, climate systems risks, impacts, vulnerability, adaptation and mitigation for different warming levels is needed. This should include the differences between different levels of warming and CO₂ concentration including in relation to 1.5°C and lower and higher levels of warming.
- Implications of a range of global warming levels, CO₂ concentrations and time horizons including:
 - Costs of mitigation to achieve these levels;
 - Feasibility of technological options;
 - Climate system and societal impacts;
 - Costs of adaptation;
 - Costs and non-monetary levels of “residual damages” using multiple metrics.(This means an overview of all aspects surrounding different global warming levels above pre-industrial of 1.5°C, 2°C, 3°C, 4°C, 5°C relative to pre-industrial, as well as different CO₂ concentration levels such as 350 and lower, 450, 550, 650, 750 for the short (2020), medium (2050) and long (2100 and beyond) term.)
- Sea level rise risk assessments based on multiple lines of evidence including the paleo-record, contemporary ice sheet responses, process model based projections, and semi-empirical approaches.
- Assessments of ocean acidification and the interplay of acidification, ocean-surface warming, sea-level rise and local environmental issues that determine resilience and long-term survival of coastal and continental-shelf ecosystems and livelihoods.
- The relationship between different levels of warming and CO₂ concentration.
- Regionalized risk assessments for specific regions and sectors, including those identified as especially vulnerable such as SIDS and LDCs, for different levels of warming, sea level rise and CO₂ concentration related to different classes of emission paths and with assessment of impacts, costs, damages and adaptation needs.
- An assessment of the emission reductions needed to limit warming to 1.5°C and identification of the gaps in the literature for low mitigation scenarios to reach lower warming levels such as 1.5°C.

- Assessment of recent global and regional emission trends and how they relate to emission pathways consistent with different levels of warming at different timeframes, including estimating, inter alia, emission gaps in 2020.

For each of these issues, if appropriate, an assessment is required of the implications of global and regional research findings for smaller countries in light of local geographical, climatological, ecological and socio-economic circumstances and vulnerabilities, including the uncertainties in such findings, especially when large-scale data needs to be interpreted for policy development at a smaller spatial scale.

Experts from a range of scientific backgrounds, including IPCC authors will be needed to inform the discussions identified above and a list of such experts needs to be developed at the 36th session of the SBSTA.

Work programme

AOSIS proposes that the SBSTA should develop a work programme for 2012-2014 for the research dialogue with additional, regular and systematic opportunities for in-depth discussion of the issues above with the research community.

Submissions from Pakistan

Item No. 8:

Research and systematic observation (SBST A): Views from Parties on specific themes to be addressed at the research dialogue meeting to be held in conjunction with the thirty-sixth session of the SBSTA
Response:

Government of Pakistan, in technical collaboration with WWF is implementing Pakistan Wetlands Programme (PWP). The PWP is dealing with various aspects of wetlands management including community-based planning, capacity building, and research in all categories of wetlands from temperate (alpine) regions through Indus basin and down to coastal and marine wetlands. The PWP field teams deployed in four ecological regions have identified enormous potential for carbon sequestration and climate change mitigation. Particularly, in tropical freshwater wetlands of central Indus Basin and deltaic regions and coastal wetlands along 900 km coastline of Pakistan.

The PWP and Ministry of national Disaster Management organized a national consultation workshop on 24 February 2012 with the prime objective of consolidating the response to SBSTA on L.25. The Working Group on SBSTA identified following specific themes that may be included in the research dialogue which is planned to be held in conjunction with SBSTA-36:

- (i) **Development of remote sensing based wetlands indicators:** For periodic monitoring of health of remote wetlands, where physical and field based assessment and monitoring is very time-consuming and cost intensive. Separate sets of monitoring indicators for water quantity/quality, aquatic ecosystem composition, growth rate, upstream and downstream impact assessment are required;
- (ii) **Development of vegetation indices:** Assessment of vegetation quantity and growth by using vegetation indices is a common practice for terrestrial ecosystems. For aquatic and riparian ecosystems, such reflectance indices need to be developed and tested. Regional R&D organizations may undertake such initiatives for development of uniform indices for countries having similar or trans boundary wetlands;
- (iii) **Development of methodologies for quantifying carbon fluxes:** Keeping in view the phenological and physiological characteristics of wetlands species and ecosystems, simple guidelines and methodologies for estimation of carbon stock, seasonal changes and annual trends need to be developed.

Предложения Российской Федерации по соображениям для диалога об исследованиях, включая информацию по техническим и научным аспектам эмиссий и стоков всех парниковых газов в прибрежных и морских экосистемах (исследования и систематические наблюдения – ВОКНТА)

Российская Федерация приветствует заключение ВОКНТА, принятое на 35-й сессии (FCCC/SBSTA/2011/L.27) и приглашение представить соображениям для диалога об исследованиях, включая информацию по техническим и научным аспектам эмиссий и стоков всех парниковых газов в прибрежных и морских экосистемах. Российская Федерация с удовлетворением отмечает, что ВОКНТА в указанном заключении принимает во внимание взгляды Сторон о важности других экосистем, представляющих собой значительные резервуары углерода, в том числе наземных экосистем, таких как степи, тундры и торфяники. Эти экосистемы демонстрируют максимальный уровень закрепления органического углерода в подземной сфере и способны на биомном уровне выполнять климаторегулирующие функции.

Площадь **тундр** России составляет 280 млн. га (16% от территории страны). Запасы углерода в гумусе и торфе почвенного слоя для разных вариантов тундр варьируют в пределах 100-200 т С / га, суммарный запас углерода в почвах тундр России равен 28.6 Гт С. Характерным свойством тундр является наличие мерзлоты, верхняя кровля которой находится на глубине 50-150 см, где консервируются значительные запасы органического материала. Климатические изменения приводят к деградации мерзлоты и увеличению сезонного оттаивания, делая тундры крайне уязвимыми. Современным научным оценкам по вопросам вклада тундр в глобальный бюджет парниковых газов свойственен высокий уровень неопределенности. Имеются ограниченные данные инструментальных наблюдений, свидетельствующие об активизации эмиссий углекислого газа и метана в тундрах при потеплении.

Торфяные болота являются наиболее значимым на суше долговременным накопителем атмосферного углерода. Они влияют на потоки метана и закиси азота. Изменение климата существенно изменяет эти функции, что дополнительно усиливается воздействием человека. Деградация торфяных болот – постоянно растущий фактор усиления выбросов парниковых газов в атмосферу. Разработка мер, направленных на рациональное использование болот и их восстановление, имеет важное значение как для адаптации, так и для смягчения изменения климата. Занимая первое место по площади болот на планете (более 140, а вместе с заболоченными мелкоотторфованными землями более 370 млн. га) и обеспечивая от ¼ до ½ запаса углерода в торфе, Россия за последние 10 лет внесла существенный вклад в усиление внимания к болотам со стороны КБР, Рамсарской конвенции и РКИК. В части адаптации приоритетны вопросы, связанные с наиболее уязвимыми болотами, находящимися в критических условиях (мерзлые, засушливые регионы, торфяные пожары), а также подверженные влиянию хозяйственной деятельности. В части смягчения усилия должны быть направлены на разработку методики оценки и выработки мер по снижению выбросов ПГ в результате их охраны, оптимизации использования, их обводнения и восстановления.

Степи, луга и их антропогенные модификации на черноземных почвах, включая

залежи и пастбища, занимают в России более 220 млн. га. Это самые продуктивные экосистемы в умеренном поясе – до 7-10 т С / га в год, а суммарная чистая продукция превышает таковую, например в зоне северной и южной тайги. Природные степи консервируют огромные запасы углерода в черноземных почвах в виде гумуса и органоминеральных соединений. Практически полная распашка европейских степей еще в конце 19 в. и масштабное освоение целинных степей Заволжья, южного Урала, юга Западной Сибири, северного Казахстана и Алтая в середине 20 в. – два крупномасштабных кризиса, которые привели к высвобождению огромных объемов углерода из черноземов, резкому изменению альбедо, уровня транспирации и стока степных рек. Все это привело к поступлению в атмосферу значительных объемов парниковых газов.

Российская Федерация уделяет серьезное внимание развитию исследований климаторегулирующих функций экосистем с высокими резервуарами углерода. Российской академией наук (Институт географии, Институт лесоведения, Центр по проблемам и экологии лесов и др.), Росгидрометом (Институт глобального климата и экологии, ААНИИ, ГГИ и др.), администрациями ООПТ и др. организациями реализуются различные программы и проекты, направленные на решение задач по тундрам, болотам и степям в связи с изменениями климата. Результаты этих исследований выявили первоочередные вопросы, требующие дополнительного изучения и анализа. Тем не менее, степень координации международных научных усилий следует признать недостаточной для сохранения и эффективного управления климаторегулирующими функциями этих экосистем в условиях климатических изменений.

Российская Федерация предлагает выделить некоторые научные и технические вопросы, которые важны в рамках диалога по исследованиям.

- совершенствование системы оценки площадей, занимаемых экосистемами тундр, болот и степей и их антропогенными модификациями;
- детальный количественный анализ биогенных (фитомасса, первичная продукция, органические вещества) и почвенных (гумус, торф, органоминеральные соединения) компонентов цикла углерода в тундрах, степях и на болотах;
- синтез данных по балансу углерода в экосистемах тундр, степей и болот с учетом его модификаций в условиях разной степени антропогенной трансформации (для тундр – механическое повреждение и загрязнение; для болот – осушение, изменения водного режима, пожары; для степей – распашка, выпас, залежные сукцессии, инвазии чужеродных видов);
- разработка схем и механизмов экономического стимулирования сохранения и восстановления степей, тундр и торфяников для целей депонирования углерода и снижения выброса парниковых газов;
- разработка технологий мониторинга эмиссий парниковых газов в результате палов и пожаров на степных залежах и осушенных торфяниках;
- оценка вклада усилий по сохранению экосистем тундр, степей и торфяников на особо охраняемых природных территориях, в заповедниках и национальных парках, в национальную деятельность по сокращению и предотвращению выбросов парниковых газов.

Российская Федерация считает, что перед началом 36 сессии ВОКНТА, необходимо провести совещание экспертов, в ходе которого обсудить предложения Сторон РКИК ООН по приоритетам диалога и подготовить для сессии ВОКНТА обобщенные предложения.

Кроме того, следует дать поручение МГЭИК обобщить имеющиеся исследования в области технических и научных аспектов эмиссий и стоков всех парниковых газов в различных ландшафтах и экосистемах и подготовить публикацию. __

Submission from Russian Federation with views on research dialogue, including information on technical and scientific aspects of emissions and removals of all greenhouse gases from coastal and marine ecosystems (Research and Systematic Observation-SBSTA)

Russian Federation welcomes the conclusions of SBSTA at its thirty-fifth session (FCCC/SBSTA/2011/L.27) and the invitation to submit views on research dialogue including information on technical and scientific aspects of emissions and removals of all greenhouse gases from coastal and marine ecosystems. Russian Federation appreciates that SBSTA in cited conclusions noted the views of Parties regarding the importance of other ecosystems with high-carbon reservoirs, in particular terrestrial ecosystems, for example steppe, tundra and peatlands. These ecosystems demonstrate maximal levels of carbon accumulation in belowground sphere and are capable to maintain functions of climatic regulation on biome level.

Area of tundra ecosystems in Russia is about 280 mln. ha (16% from total country area). Carbon storages in humus and peat of soil layer in different tundra types vary from 100 to 200 t C per ha, total carbon reservoir in soil of Russian tundra is close to 28.6 Gt of C. Specific feature of tundra is permafrost, upper limit of which is in depth 50-150 cm, where significant amounts of organic matter are concentrated. Climate Change leads to permafrost degradation and to increase of seasonal thaw depth that makes tundra ecosystem extremely vulnerable. Recent scientific estimations of tundra inputs to global greenhouse gases budget have high level of uncertainties. There are some results of instrumental observations that reveal an acceleration of carbon dioxide and methane emissions in tundra under warming climate.

Peatlands are – as globally the most important long-term carbon store in the terrestrial biosphere - of utmost importance for regulating atmospheric carbon dioxide. Peatlands furthermore control fluxes of much stronger GHG gases such as methane and often nitrous oxide. Climate change has a strong feedback to these peatland functions. Degradation of peatlands is a major and growing source of anthropogenic greenhouse gas emissions. Concerted action for the protection, wise use and restoration of peatlands should therefore be a global priority with respect to climate change mitigation and adaptation, linking work at global, regional and local levels. Of all countries of the World, Russia has the largest peatland area (over 140 mln. ha, together with other wetlands more then 370 mln. ha) topђe, and the largest volume of peat carbon (from one quarter to one half of global peat carbon). Over the last 10 yrs large efforts have been made to strengthen the position of peatlands in climate change mitigation and adaptation policies. Russia has played an important role in raising awareness and in decision making with respect to peatlands in the CBD, the Ramsar Convention on Wetlands, as well as the UNFCCC. With respect to adaptation priority issues include assessment tools, methodologies and best practices development for peatlands under critical conditions (permafrost, steppe, and mountain peatlands, peat fires etc.) listed as most vulnerable to climate change, as well as influenced by human impacts (highly populated regions, extractive industries etc.). With respect to mitigation main efforts have to be directed on studying and developing incentive mechanisms for GHG emissions reduction from peatlands via protection, wise use, re-wetting and restoration.

Steppes, meadows and its anthropogenic modifications on chernozem soils, including fallow land and pastures, occupy in Russia more than 220 mln. ha. These ecosystems are most productive in temperate zone with net primary production up to 7-10 t C per ha per year, zonal net primary production increases one in zones of northern and south taiga. Natural steppes conserve giant amount of carbon as humus and organic-mineral compounds of chernozem soils. Almost complete agricultural cultivation of European steppes in XIX century and extensive development of virgin steppes of South Ural, West Siberia, Northern Kazakhstan and Altai in middle of XX century present two large scale crisis, that led to losses of giant amount of carbon in chernozem soils, high changes of albedo, transpiration and river flows. These changes caused to massive deliberation of greenhouse gases to the atmosphere.

Russian Federation devotes serious attention to developing of researches of climatic regulation functions of ecosystems with high-carbon reservoirs. Russian Academy of sciences (Institute of Geography, Institute of Forest Science, Centre for Ecology and Productivity of Forests etc.), Roshydromet (Institute of Global Climate and Ecology, Arctic and Antarctic Research Institute, State Hydrological Institute etc.), administrations of specially protected areas and other organizations implement different programs and projects, targeted on different problems of tundra, peatlands and steppe in relation to Climate Change. The results and lessons learned enable the identification of research priorities and adaptation actions to be applied on a local, regional, continental and world level. Nevertheless, the level of co-ordination of international research efforts is not sufficient for conservation and effective management of climatic regulation functions of these ecosystems in Climate Change conditions.

Russian Federation suggests to identify next scientific and technical questions, important in frame of the research dialogue:

- improving of system of area identification of tundra, peatlands and steppe and its anthropogenic modifications;
- detailed quantitative analysis of biogenic (biomass, net primary production, dead organic mass) and soil (humus, peat, organic-mineral compounds) components of carbon cycle in tundra, peatlands and steppe;
- a synthesis of data on carbon balance in tundra, peatlands and steppe ecosystems with accounting of its modifications due to different anthropogenic transformations (mechanical disturbances and pollutions in tundra; draining, water regimes changes, fires in peatlands; ploughing, pasturing, successions in fallow lands, invasions of non-native species in steppe);
- a development of schemes and mechanisms of economical stimulations of conservation and restoration of tundra, peatlands and steppe for purposes of carbon sequestration and emissions reductions;
- a development of technologies of monitoring of green house gases emissions due to fires in steppe fallow lands drained peatlands;
- an identification of input of efforts on conservation of tundra, peatlands and steppe ecosystems in specially protected areas, reserves and national parks to national activities on reductions of greenhouse gases emissions.

The Russian Federation proposes to hold a meeting before the 36-th session SBSTA and to discuss the proposals of the Parties to the UNFCCC dialogue on priorities and prepare a summary for a session of the SBSTA.

In addition, the Russian Federation considers that should instruct the IPCC to summarize existing research in the field of technical and scientific aspects of emissions and sinks of all greenhouse gases in different landscapes and ecosystems and to prepare a publication.
