SUMMARY REPORT

FOREST LANDSCAPES: SOLUTIONS FOR CLIMATE CHANGE MITIGATION

21 October 2015
European Parliament, Brussels

Policy-makers and stakeholders were brought together on 21 October by MEP Catherine Bearder to discuss the ROBIN project, which highlights the pivotal role of tropical forests and the carbon and non-carbon benefits they provide.

Catherine Bearder MEP welcomed the participants by explaining that the ROBIN project is funded under the EU 7th Framework Programme and has aimed to investigate the role that biodiversity can play in climate change mitigation, and how biodiversity can be affected by climate change in Latin America. The importance of forests was stressed as well as the essential role they play as host for biodiversity. The particular importance of elephants was underlined as they are the gardeners of forests. The newly adopted Sustainable Development Goals were highlighted underlining goal 15, which is devoted to protecting forests. With regards to the upcoming COP21 some questions were put forward as to how protecting forests can help partners achieve climate goals and what are the best ways to do so, as well as how should the EU and third countries change their approach to forest management?

Kurt Vandenberghe, Director "Climate Action and Resource Efficiency", DG Research & Innovation, European Commission explained that the ROBIN project was part of a portfolio of projects on sustainable management and natural resources in Latin America. The outcomes of ROBIN were expressed as timely and exemplary in the run up to COP21. It was stressed that the project shows the importance for policy to identify ways to help maximise carbon benefits from ecosystem services taking into account the three pillars of sustainable development. It was underlined that the issues of land use, agriculture and forestry and how they will account for climate action will not end anytime soon and the outcomes of ROBIN can play an important role in that discussion. It was emphasised that ROBIN is illustrative for research and innovation and aligns well with the mission of Horizon 2020 to transform societal challenges into opportunities for innovation and help create the markets of the future by developing solutions, particularly emphasising nature-based solutions. It was pointed out as pivotal to also work on the demand side to ensure that when solutions are developed there is an uptake. By adopting the Framework of Commissioner Moedas "*Open Science, Open Innovation, Open to the World*" it was stressed that this approach can help transform societal challenges into solutions also highlighting the importance of participatory approaches. It was underlined that ROBIN has acknowledged the end users and other factors to consider such as culture, tradition, and governance that play a role in the uptake of possible solutions. International cooperation was stressed as this provides scale and

scope to new solutions as well as the need to exchange knowledge and export know-how. It was highlighted that ROBIN provides perspectives on the contribution of nature-based solutions to climate change mitigation but it was pointed out that more evidence-based in terms of cost effectiveness of nature-based solutions are needed. It was stressed that the cost effectiveness of these solutions will also be determined by the co-benefits they provide in social, economic and environmental terms. It was concluded by emphasising the need to ensure that ROBIN is effective in sharing its messages and the uptake of its outcomes.

Terry Parr, Centre for Ecology & Hydrology, UK, Project Coordinator highlighted that the grand challenge is to decouple economic growth from environmental degradation as development is coming at the expense of the environment, which has been acknowledged in SDG 8.4. It was underlined that the project has aimed to examine not just the co-benefits provided by biodiversity but if biodiversity is part of the solution, which it is in several ways. It was explained that the project has adopted a systemic approach examining the whole system from drivers linked to biodiversity, the effects of those on ecosystems and how those functions affect climate change mitigation and other ecosystem services. The impacts of those services or the loss of those services have also been examined to see how they feed back to policies and management options. It was stressed that biodiversity matters and is not just a co-benefit but contributes to solving problems. It was stated that biodiversity makes ecosystems more resilient, which is particularly important in restored forests and secondary forests. It was stressed that the concept of ecosystem integrity is a viable way of measuring biodiversity and ecosystem services, as has been demonstrated by the practical application for Mexico in the context of ROBIN. Since there are always trade-offs among ecosystem services, the decisions about their use and conservation/management are of complex nature and there is no one model fits all. It was also underlined that the most effective solutions operate at a local scale as the engagement of stakeholders is essential and that agricultural and forestry polices must also be examined. The need to feed into international commitments was also highlighted and what can be done through international conventions such as UNFCCC, the Convention on Biodiversity and the post-2015 agenda.

Martin Herold, Wageningen University (WU), Netherlands highlighted the importance of REDD+ as a policy mechanism to reduce emissions from deforestation and the enhancement of carbon stocks. It was outlined that tropical forests have not yet been part of any formal climate agreement. It was mentioned that in 2005 tropical countries stepped up and voiced the willingness to commit to targets, which led to the creation of REDD+. It was stated that 39 countries have listed REDD+ in their INDCs submissions for COP21 and that REDD+ will be an integral part of any agreement that will come out of Paris. It was stressed that together with the SDGs this year provides the highest political level engagement on forests and climate change. It is important to understand that forest related mitigation includes both sinks and sources with the potential of 25% of total greenhouse gas emissions. It was also emphasised that when aiming to reduce deforestation, factors that indirectly promote unsustainable use of forests/deforestation such as supply chains, consumption and incoherent policies must be considered. It was stressed that in tropical areas, forests and

agriculture are intrinsically linked, since agriculture is the primary cause of deforestation. It was underlined that biodiversity increases the resilience of forests as it helps them adapt to new climatic conditions. It was underlined that in order to enhance the sink of the forest, which is essential for mitigation, biodiversity is not a safeguard, it is a requirement. It was pointed out that reducing carbon emissions also preserves biodiversity but that co-benefits vary regionally. The ROBIN project has produces new data that need to come together at the national level and ensure that it is integrated to sub-national strategies and implementation.

Birgit De Boissezon, Head of Unit "Sustainable Management of Natural Resources", DG Research & Innovation, European Commission reiterated that the ROBIN project is exemplary and a precursor for other initiatives the Commission aims to pursue in the future. The importance of biodiversity being part of the solution was reiterated also pointing out the need to make that message clear among all stakeholders. The policy context was highlighted mentioning the SDGs as well as the European Commission priorities ensuring that the agenda for jobs and growth are set in a sustainable framework. It was stressed that ROBIN is a great example of the EU as an active global actor where collaboration among countries promotes solutions. Horizon 2020, the EU Research and Innovation Framework Programme for 2014-2020, has along those lines a new focus on innovation driven research focusing particular on nature-based solutions, including for climate change challenges. The main objective is to invest in solutions meaning that the solutions portfolio is widened beyond the traditional technological solutions. The need to promote systemic, scalable, integrated solutions at landscape and city level fostering co-design, co-development, and co-implementation was emphasised. The issue of funding was raised highlighting that the Commission will deliver different types of funding and the establishment of new funding models to ensure that both the supply and demand side create a real market. The Horizon 2020 work programme for 2016-2017 recently launched a call for smart and sustainable cities where large-scale demonstration projects for nature-based solutions were called for. It was concluded by underlining the importance of investing in solutions to create the knowledge base for others to implement and scale up under their particular conditions.

Stefan Leiner, Head of Biodiversity Unit, Acting Director "Natural Capital", DG Environment, European Commission stressed that solutions based on ecosystems are the most cost-effective way to mitigate and adapt to climate change. It was stated that the ROBIN project seems to confirm this notion and it is pivotal to show projects like this in order to make the case for nature-based solutions. It was stressed that the EU has always been in the forefront of protecting forests underlining the existence of a multitude of international commitments that the EU complies with. It was however stressed that our own house also needs to be put in order highlighting OCTs and the tropical forests found in French Guiana, which should not be forgotten. With regards to the mid-term review of the EU Biodiversity Strategy it was outlined that progress has been made under various actions such as implementing EU nature legislation, mapping and assessing ecosystems and their services ensuring that they are embedded in a real green infrastructure policy and incorporated into our natural accounting system. It was stressed that implementation must

be scaled up. It was stated that there is a target to restore 15% of EU ecosystems under which a wide ranging network of Natura 2000 has been established. The ultimate objective of this is to ensure that all habitat types have a favourable conservation status. Many of these types are forest habitat types, and the State of the Environment 2015 report assessed that less than 20% have this favourable conservation status. It was stressed that achieving our own EU legislation goals will require a restoration effort and stating that it is clear that biodiversity conservation, climate change mitigation and adaption are two sides of the same coin and the implementation of nature-based solutions will be the most cost-effective way of achieving our commitments.

Peter Wehrheim, Head of Unit "Climate Finance and Deforestation", DG Climate Action, European Commission reiterated the importance of REDD+ and how it can reconcile climate change mitigation objectives with biodiversity objectives. It was stressed that REDD+ is still in an early implementation phase as deforestation is often associated with poor governance systems in tropical countries. It was emphasised that in its first years of implementation focus has been on capacity building and now aims to move towards results-based payments. This remains a challenge as in order for REDD+ to generate result-based payments emission reductions must be assessed against benchmarks. In order to achieve this REDD+ countries have been invited to define their country specific benchmarks, which have been debated and developed over the past years. The example of Brazil was mentioned as they have an assessed benchmark showing that the Amazon region could generate significant emission reductions, but the perceived value of emission reductions strongly depends on the additionality of them and the co-benefits of REDD+ results as well as the co-benefits of biodiversity. It was stated that EU Member States and Commission are the second largest sponsor of REDD+, but less than 10% of past EU support has been allocated to results based payments. It was stressed that progress has been made over time ensuring that co-benefits between mitigation goals and biodiversity exist as well as synergies, but monitoring biodiversity as part of REDD+ has raised concerns as it could make REDD+ implementation more difficult and complicated. This year's climate change agreement will come forward with a proposal on how biodiversity related data can be included in REDD+ process and thereby how a do no harm approach can be reinforced. The REDD+ decision has already been discussed by negotiators and will be part of the package at COP21 hopefully be adopted with the overall agreement.

The discussion with the audience highlighted the importance of the research conducted through the ROBIN project and its contribution to the knowledge needed to take further action. The huge potential of land restoration was raised and it was discussed how Member States can be motivated to pledge their efforts on forestry. It was stressed that the Commission is trying to improve the system on how to account for forests and agriculture in EU domestic climate legislation and it was pointed out that legislation will be tabled next year on how to include the sink and emissions removal associated with forest and land use change. It was stressed that certain Member States have also made specific declarations of intent acknowledging the importance of forests for mitigation potential. The importance of involving EU regions was also stressed and the need to develop tools to account for the

benefits provided by forests in our economic systems. With regards to the results of ROBIN it was also asked to what extent the results are transferable to other REDD+ regions. It was stated that there is no theoretical reason as to why it couldn't be applied elsewhere but it was underlined that flexible approaches are needed. ROBIN has adopted a clear participatory approach providing local communities with knowledge and empowerment to find their own solutions. It was stressed that it is important to understand that the solutions are local specific but a lot of the tools used are adaptable to other circumstances. It was also underlined that there is a lot of managed, secondary and regrowing forests that absorbs a lot of carbon, but we do not know how much as this is often overlooked in climate change science. It was also stressed that it is essential that forests in the EU are implementing sustainable forest strategies, which reconcile biodiversity and mitigation objectives jointly and not just focusing on this need in tropical forests. It was stated that the EU wood industry supports the project and the need to avoid unwanted socio-economic effects of forestry. It was underlined that ROBIN should provide ideas as to what can be done with regards to the timber regulation. It was underlined that improving forest management in terms of climate change, biodiversity and wood supply is part of the key messages of ROBIN. The need for encouragement and engagement from the EU in this respect was raised. The importance of involving all actors was reiterated and basing trade-offs on the three pillars of sustainability. The discussion also touched upon the concept of agro-forestry, and it was stressed that an important part of the solutions is to ensure that areas have a mixed forest agriculture system. It was however underlined that the best areas for biodiversity and carbon stocks are in mature forests in protected areas.

Marielos Peña-Claros, WU, Netherlands, stressed that it has been found that areas with high levels of carbon overlap with areas of high biodiversity creating win-win situations, underlining that this is however not true everywhere. The concepts of co-benefits and safeguards for biodiversity have therefore been included in the discussions of REDD+. It was stated that there are mechanistic reasons for looking at the relation between biodiversity and carbon in more detail. Ecological knowledge indicates that biodiversity has a direct influence on the carbon components meaning that more diversity leads to more carbon stocks and higher productivity. It was explained that this is what ROBIN has examined as well as the aim to better define what biodiversity is, by looking at the number of species in a given area, the functions that these species play in the area, and the structure of the forests. The research questions have been approached by using three different methodologies, including field data, remote sensing and models. The field data with regards to mature tropical forests show that biodiversity has a positive effect on carbon stocks and carbon sequestration. It was stressed that proxies are needed in order to consider how much biodiversity is present and how it is changing through time. It was underlined that secondary forests and natural forests managed sustainably for timber sequester large amounts of carbon. This has implications as these forests are of high value due to their tree diversity and the ecosystem services they provide. Models were used to show that over time biodiversity enhances the resilience of forests as plant diversity acts as an insurance against climate change impacts and the diversity of species helps adapt to new climatic conditions. It was reiterated that biodiversity is not just a co-benefit but must be considered an integral

part of policies and practices that will reduce the impact of climate change such as REDD+ and that high levels of tree diversity should be used in reforestation activities.

Miguel Equihua, INECOL, Mexico provided the example of Mexico that has developed an institutional infrastructure based on results of ROBIN in order to evaluate and monitor the status of biodiversity for the scientific implications but also for the use and management of biodiversity. It was explained that the ROBIN project developed and operational frameworks to apply the concept of ecosystem integrity, which measures the status of forests, or ecosystems in general. It was explained that the environmental conditions were linked to the development of local biodiversity assemblages producing a concrete configuration of biodiversity, which can be linked via a mathematical structure/probabilistic model to the state of ecosystems which determines the possible uses and services available to society. This modelling and analysis framework provides a series of measurements that can be linked to public policy so as to align the three pillars of sustainability. It was stressed that this fosters multifunctional landscapes where a mixture of land for different uses takes into account economic and cultural ways of conducting development. It was stressed that in Mexico the project has led to the establishment of a tool that shows the evolution of ecosystem integrity. The model of ecosystem integrity is still in its early stages but there is already a lot of interest by several institutions to use the results. It was mentioned that discussions with governmental officials are looking for ways to improve the information base to fulfil official requirements and find optimal ways to document the status of ecosystems with an holistic perspective. A framework for monitoring biodiversity has been created, which measures the status of several variables that are relevant to document the status of forests and other ecosystems. It was pointed out that this idea is picking up across Latin America through collaborations like, for example the Pacific Alliance, highlighting the importance of monitoring biodiversity and the use of ecosystem integrity in order to improve public policy as a way towards achieving sustainable development.

Margareth Simoes, EMBRAPA, Brazil highlighted that the Amazon plays an important role for global biodiversity as well as for the global climate regulation, providing many societal services. The transformation of the Amazon was outlined showing that the building of infrastructure started in 1960 and the agriculture frontier began in the 1990s. It was stated that in 2009 due to pressures zero deforestation policies were introduced. It was stressed that they are playing an important role and have contributed to significantly decrease the deforestation rate. It was also stressed that adaptation policies exist such as the Low Carbon Emission Agriculture (ABC) Plan. It aims to decrease and revert the carbon signal of Brazilian agriculture by 2020, stating that recovering degraded pastures is among many goals the most important. It was stated that in order to enhance mitigation and adaptation an ecosystem integrity approach based on satellite products was established. It was explained that this has helped Brazil see how the environment is keeping the outer regulation properties and how the land use gradient is decreasing. It was outlined that Brazil has used a satellite approach, which is applicable in all of Latin America. It was pointed out that an ecosystem integrity map of Brazil was created and assists with the mitigation and adaptation measures as the data provides information, which helps monitor ecosystems and

where efforts need to be made. It was stressed that satellite based ecosystems integrity could monitor ecosystem condition supporting national and global policies as well as help build a road map for a global land and biodiversity observatory.

Leon Braat, Alterra, Netherlands addressed the work that has been conducted on the national, provincial and local scale. It was explained that the national scale used data, which indicated that Bolivia, Brazil and Mexico are in the area of moderate risk to deforestation. It was stated that the extreme risk is found in smaller countries and that some countries in Mesoamerica are reforesting. The provincial scale included over 200 interviews with farmers and experts combined with data on crops and farm types. It was found that in Bolivia and Brazil subsistence farms have the largest forest area and large farms are likely to be highly deforested. The large farms also trend to use mono cropping and large farmers make the decision based on the market prices while small farmers base it on family consumption. It was stressed that farmers have access to social programmes but most do not have property rights and therefore do not receive the benefits. It was explained that the local level entailed workshops reflecting the perceptions of local people. It was found that for all case countries, people observe that deforestation is changing the environment and the opportunities for development. Biodiversity loss, pollution and agricultural expansion were also mentioned. With regards to the drivers agriculture was scored the highest most often and the improvements needed included programmes for integration of agricultural and forestry, developing environmental awareness and support for social participation in policy development scored high. It was concluded by stressing the need to exchange experience and learn from what is done in Europe. It was stressed that economic development, agriculture and biodiversity conservation policies must be integrated and coordinated.

Terry Parr, Centre for Ecology & Hydrology, UK, Project Coordinator stressed that there is a tremendous amount of data behind the research as well as new data products that can be used well beyond the ROBIN project. It was stated that in order to help the local level develop solutions a system must be put in place, which enables them to input their own knowledge and information. The tool OPTamos was presented, which is a tool to assist in decision-making that provides a ranking of priorities for the different options across a set of criteria. It is a free online software tool to help make complex decisions. Another point stressed was the EU Biodiversity Strategy and how ROBIN can make some key contributions. With regards to target 2-4 lessons can be learned from Latin America in regards to the sharing of knowledge and translating that into the EU scene. As for target 6 it was stressed that the EU must reduce the indirect drivers of biodiversity loss and mobilise additional resources. In terms of reducing indirect drivers the need to look at trade-offs for ecosystem services was underlined. With regards to mobilising additional resources it was emphasised that data, information and technologies can be used to improve monitoring and reporting, which is essential for reducing costs. The need for technology transfer and the maximum use and uptake of data to reproduce the ideas produced was raised as well as the pivotal role of international cooperation.

Maximiliano Arienzo, Brazilian Mission to the EU highlighted that Brazil has been implementing a continued effort on reducing greenhouse gas emissions from deforestation. It was stressed that the 82% reduction of deforestation achieved in the Amazon between 2004 and 2014 is the most significant REDD+ result ever achieved. It was stated that satellite monitoring is an important part of it and has confirmed that forest regeneration is happening in 23% of the historically deforestated area in the Amazon. As a result of these forest actions it has been estimated that Brazil has seized to emit 650 million tonnes of CO2 annually. It was stressed that this is a great contribution to the global effort to climate change mitigation and a key aspect of recognising in the realm of international negotiations the early action of developing countries. In addition to the Amazon cooperation treaty Brazil seeks to expand south-south cooperation with areas of the world that are linked to the tropical forests found in Brazil and the pressures of deforestation that Brazil had. It was emphasised that the UNFCCC should enhance the results based payments and strengthen the forest related mitigation efforts of developing countries. It was stressed that Brazil put forward their INDCs last September and are prepared to work for a fair, effective and ambitious agreement.

Jean-Philippe Palasi, Senior Director for European policy, Conservation International reiterated that forests provide 30% of the climate solution and agriculture is the biggest driver for tropical forest loss. The Commission has acknowledged that the EU has a share in this as the EU is a global importer of embodied deforestation, which is discussed in the 2013 report "*The impact of EU consumption on deforestation: Comprehensive analysis of the impact of EU consumption on deforestation*". The CI has built on this report and conducted two studies, which has identified three key priorities that overlap with many initiatives found in the report. Firstly, a common base line for supply chains is needed and is being demanded by industry and NGOs. It was stressed that a unified framework would need to build on best practices, provide a clear ladder to climb for all stakeholders to make their supply chains sustainable as well as comparable. Secondly, investments are needed in sustainable intensification of agriculture products, stressing the challenge of managing the demand of food without exceeding the spatial footprint. It was stressed that yields need to continuously increase sustainable and with the assistance of smallholders. The need to address overconsumption and food waste were also pointed out as part of reducing the footprint. Thirdly, investment in forest management was highlighted as essential underlining the importance of REDD+, protected areas, and conservation agreements. It was however stressed that these tools are costly and that financing needs to be brought to scale.

The discussion with the audience highlighted that biodiversity is considered a core objective in tropical areas when dealing with sustainable intensification of agriculture, reiterating that it is not just a co-benefit. It was stressed that farming can be done in synergy with biodiversity with the example of shaded coffee being raised. With regards to supply chains the organic label was mentioned and the possible need to update this as the implementation of the SDGs begins. The importance of best practices was raised and various examples on how yields are increasing in the Amazon while achieving restoration and regeneration of forests. The need for international cooperation was underlined as well

as a partnership approach, underlining the need to avoid national silos in negotiations. The EU voluntary partnership agreements were discussed as they do not always stop the removal of trees as there are other international players that are less concerned with this. The concept of ecosystem integrity was further discussed and how it relates to the ecosystem condition. It was highlighted that ecosystem integrity is a way of evaluating the ecosystem's health by assessing the status of the ecosystems and indirectly the condition. The phenomenon of land grabbing was raised and it was pointed out that it is a complex issue but the need to encourage land titles as well as the importance of land ownership to ensure that best practices and sustainable forest management tools are in place. It was also said that sustainable forest management has been used in many countries to provide land titles to indigenous communities. The importance of holding companies accountable of their choices in production was stressed and it was underlined that many of the large companies are moving towards this, underlining that campaigns, leading individuals, personal relationships, and ensuring that enough resources are available in the long-term to continue production were pointed out as the main reasons behind this move. It was also underlined that lessons can be learnt from the forest certification movement as it is important to demonstrate that things can be produced more efficiently using a market approach.

Catherine Bearder MEP concluded the meeting by reiterating the complexity of the situation and the important role that forests play in climate change mitigation and adaptation. The question of putting a value on species was also raised and the need to protect areas such as forests not just for their intrinsic value but the services provided. The existence of programmes such as OPTimus was mentioned as it provides tools based on science helping authorities and communities manage these valuable resources. It was stressed that a lot is at stake at COP21 and the particular need for political will in order to achieve a successful outcome.

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