Produto 3: Relatório Final contendo todos os dados, informações, contribuições e insumos elaborados ao longo do período de 03 a 31 de dezembro de 2018.

Consultora: Elisangela Rodrigues Sousa

Sumário

Anexos

Roteiros das histórias dos Diálogos Talanoa Brasil;

Roteiros das histórias dos Diálogos Talanoa Brasil (legendas traduzidas para o inglês);

Fact sheet dos Diálogos Talanoa Brasil;

The Presidencies have launched the Talanoa Call for Action at COP 24 (documento produzido pela UNFCCC);

Key messages from the Ministerial Talanoas (documento produzido pela UNFCCC).

Objetivo

Apoiar na execução de atividades administrativas, de organização, comunicação, e articulação interinstitucional relacionadas: as atividades dos Diálogos Talanoas Brasil, assim como na preparação de insumos para apoiar a realização de reuniões, agendas de reuniões bilaterais e setoriais para apoiar nos trabalhos de elaboração da estratégia de implementação da Contribuição Nacionalmente Determinada (NDC, na sigla em inglês) do Brasil ao Acordo de Paris.

Contextualização

O Brasil apresentou em 2015, no contexto do Acordo de Paris, uma contribuição nacional com metas absolutas de redução de emissões de gases de efeito (GEE) estufa para o conjunto da economia: 37% em 2025 e 43% em 2030, tendo por referência o ano de 2005. O Brasil pretende atingir, e se possível, superar essas metas, sem abrir mão da geração de empregos, do aumento da produtividade e da retomada do crescimento econômico.

As áreas prioritárias para ação são a agropecuária sustentável, energias renováveis, o combate ao desmatamento e a recuperação florestal. Em cada setor, estão sendo estudadas ações específicas que abrem novas oportunidades de negócios e de investimentos em linha com o objetivo traçado no Acordo de Paris.

No momento, o Ministério do Meio Ambiente trabalha para elaborar uma estratégia nacional de implementação e financiamento de sua contribuição, em consulta com a sociedade, o setor privado e os órgãos governamentais relevantes.

Adicionalmente, em 2017, durante a Conferência das Partes sobre Mudança do Clima realizada em Bonn, Alemanha, e presidência de Fiji (COP23), foi rebatizado um processo de diálogo facilitador entre a Partes. O chamado Diálogo Talanoa foi introduzido por Fiji, sendo Talanoa uma palavra nativa das ilhas da região do Pacífico que se traduz em um processo de diálogo inclusivo, participativo e transparente.

O propósito do Talanoa é oferecer um espaço para a troca de experiências, a construção de confiança e a tomada de decisões sábias para o bem da coletividade. Envolve a troca de ideias, habilidades e experiências por meio da narração de histórias. Durante o processo, os participantes estabelecem uma relação de confiança e desenvolvem conhecimento através da empatia e compreensão. Culpar os outros e fazer observações críticas são conflitantes com a construção mútua de confiança e respeito, e dessa forma são inconsistentes com o conceito Talanoa.

O Diálogo Talanoa busca estabilidade e inclusão através do diálogo, criando um ambiente seguro que promova o respeito mútuo para a construção de uma plataforma de tomada de decisão voltada para o atingimento da meta central do Acordo de Paris de manter a média de crescimento global da temperatura abaixo de 2°C e o mais perto possível de 1,5°C.

Elaboração dos roteiros dos 13 vídeos dos Diálogos Talanoa Brasil, que foram apresentados durante a COP 24, em Katowice, Polônia, no período de 03 a 14 de dezembro de 2018.

Revisão de todas as traduções de legendas dos 13 vídeos dos Diálogos Talanoa Brasil, que foram apresentados durante a COP 24, em Katowice, Polônia, no período de 03 a 14 de dezembro de 2018.

Revisão e acompanhamento da diagramação do *fact sheet* dos Diálogos Talanoa Brasil, que foi apresentado durante a COP 24, em Katowice, Polônia, no período de 03 a 14 de dezembro de 2018.

Informo abaixo o link que está disponível todos os vídeos produzidos

goo.gl/im9vnx

Organização e atualização da planilha do planejamento de execução do projeto.

Organização das pastas com toda a documentação elaboarada ao longo do período de trabalho contratado.

Anexos:

Roteiro das histórias dos Diálogos Talanoa Brasil.

Roteiro Talanoa

Versão 3

Narração:

Compartilhar histórias que ajudem a cumprir e reforçar os compromissos dos países para frear o aquecimento global, esse é o objetivo da plataforma de diálogo facilitativo, rebatizado de Diálogo de Talanoa.

São três perguntas: Onde estamos? Onde queremos chegar? Como chegaremos?

Desde a COP 23, o Brasil mergulhou na proposta do Talanoa. Foram seis rodadas envolvendo governo federal e estaduais, sociedade civil, comunidade acadêmica, setor empresarial e povos indígenas

Nesse processo, foram contadas mais de 130 histórias.

Como a da professora Beth

A professora Beth relatou que tinha um projeto para oferecer 100 sistemas de aquecimento solar para uma comunidade carente.

Ou como a história contada por Fábio Feldman sobre a implementação do rodízio de veículos na maior cidade do Brasil, São Paulo.

Histórias como essas ajudaram a entender onde estamos, o que queremos e como chegaremos lá.

Os diálogos Talanoas no Brasil foram incentivados pelo Ministério do Meio Ambiente e Ministério das Relações Exteriores, em parceria com os diversos setores e o suporte

financeiro do **Ministério Federal do Meio Ambiente, Proteção da Natureza e Segurança Nuclear da Alemanha** e do NDC Partnership com o apoio do Banco Mundial.

Talanoa é uma palavra nativa do Pacífico que significa diálogo inclusivo, participativo e transparente.

E é por meio desse processo que o Ministério do Meio Ambiente Brasileiro, leva para COP 24 não a posição do Governo Federal, mas sim, a história contada pela sociedade brasileira.

Roteiro:

Narração: texto narrado por voz feminina

Sonora: fala retirada de entrevistas ou filmagem

GC: são caracteres que aparecem na tela informando nome e instituição.

Motion Graphics: Movimentação de elementos visuais, como fotos, vídeos, vetores, textos ou efeitos especiais.

Áudio	Vídeo (imagens, motion graphics, efeitos)
Compartilhar histórias que ajudem a cumprir e incentivar a reforçar os compromissos dos países para frear o aquecimento global, que antecede o ano de 2020, esse é o objetivo da plataforma de diálogo facultativo, rebatizado de Diálogo de Talanoa.	Capturas de tela do site Talanoa.
São três perguntas: Onde estamos? Onde queremos chegar? Como chegaremos?	Motion graphics com as perguntas na tela.
Desde a COP 23, o Brasil mergulhou na proposta do Talanoa. Foram seis rodadas envolvendo governo federal e estaduais, sociedade civil, comunidade acadêmica, setor empresarial e povos indígenas	Imagens das reuniões
Nesse processo, foram contadas mais de 130 histórias.	Motion Graphics: Número de histórias contadas: São Paulo no Clima – Diálogo de Talanoa" Diálogo Talanoa Brasil Diálogo Talanoa Científico Diálogo Talanoa da Sociedade Civil Diálogo Talanoa CEBDS Dialogo Talanoa dos Povos Indígenas
Como a da professora Beth	Imagem de Beth

Beth: Eu trabalho com energia solar	
A professora Beth relatou que tinha um projeto para oferecer 100 sistemas de aquecimento solar para uma comunidade carente.	Imagens da reunião
Beth: E quando eu cheguei no conjunto e falei que tinha 100 sistemas de aquecimento solar, ninguém quis. Ai um dia uma pessoa falou professora, essa água que o sol aquece não dá câncer não? E é só gente pobre que usa? Eu falei o contrário. Só gente rica que usa! Eu sempre brinco que toda minha vida na academia era para chegar nesse momento de falar não! Nos podemos trazer essa tecnologia para a população de baixa renda.	GC: Elizabeth Marques Duarte Pereira Coordenadora de Estudos de Energia do Centro Universitário UNA
Ou como a história contada por Fábio Feldman sobre a implementação do rodízio de veículos na maior cidade do Brasil, São Paulo.	Imagens da reunião
Eu achei que divulgar os dados sobre saúde seria suficiente para ter o apoio da sociedade. O fato é que nos menosprezamos a dimensão simbólica do automóvel. Por incrível que pareça, gente que não andava de carro e andava de ônibus era contra o rodízio. A importância do rodízio foi colocar este tema na agenda. Houve uma mudança de comportamento.	GC: Fábio Feldman Consultor em Sustentabilidade
Histórias como essas ajudaram a entender onde estamos, o que queremos e como chegaremos lá.	Imagens de reuniões
Os diálogos Talanoas no Brasil foram incentivados pelo Ministério do Meio Ambiente e Ministério das Relações Exteriores.	Imagens de reuniões Logo Ministério Meio Ambiente Logo Ministério das Relações Exteriores Logo Ministério Federal do Meio Ambiente, Proteção da Natureza, Construção e Segurança Nuclear (República Federal da Alemanha) Logo Deutsche Gesellschaft fürInternationale Zusammenarbeit (GIZ) GmbH Logo Banco Mundial
A gente acredita que este formato traz muitas coisas positivas, porque faz realmente a gente sentar para ouvir, sentar para realmente escutar e processar todas as ideias positivas de todas as histórias de cada um daqueles que participam.	GC: Thiago Mendes, Secretário de Mudança do Clima e Florestas do Ministério do Meio Ambiente
Talanoa é uma palavra nativa do Pacífico que significa diálogo inclusivo, participativo e transparente.	Imagens da COP 23 e mais imagens de reuniões.

E é por meio desse processo que o Ministério do Meio Ambiente Brasileiro, leva para COP 24 não a posição do Governo Federal, mas sim, a história contada pela sociedade brasileira.	Motion Graphics: Mapa do Brasil com cenas das reuniões.

- ***1) Cadastro Ambiental Rural (CAR) (Talanoa Brasil) – Vídeo: Tempo: 01:47:14 – 01:56:20 / Áudio: 1:47:13 – 1:56:22***

Raimundo Deusdará, diretor-geral do Serviço Florestal Brasileiro do Ministério do Meio Ambiente (MMA) começou dizendo que o sucesso do CAR se deu por ter sido um processo simples e do grande mapeamento feito até agora! Alguns pontos foram levantados, por Teodoro, para o alcance do sucesso: processo de cadastramento das propriedades rurais foi voluntário, simples, com uma aproximação amigável com o setor produtivo, divulgação informal, parcerias com diferentes agentes. Dois outros pontos importantes para o sucesso do cadastro foram: a articulação com os Estados e o retorno dos dados através de consulta pública. Esses dois pontos fizeram do CAR um instrumento de gestão territorial! Destacou que a negociação de um acordo com o SICOR, sistema de crédito do banco central, para liberação do crédito via CAR, o que irá permitir um maior detalhamento das propriedades no CAR. Tudo isso foi feito com inteligência nacional, software livre e equipe experiente formada em universidade pública.

- ***2) Biocombustível (Talanoa Brasil) – Vídeo: Tempo: 02:12:15 – 02:20:42 / Áudio: 2:12:22 – 2:20:34***

André Nassar, presidente executivo da Associação Brasileira Indústrias Óleos Vegetais (Abiove), destacou a necessidade de ter uma política pública por trás, embora não precise de subsídio, para sinalizar para o setor de biocombustível que é possível e viável economicamente produzir. Falou da dificuldade de separar etanol e biodiesel do RenovaBio. Ressaltou que a meta da NDC para etanol não é fácil de cumprir, tendo em vista que o setor sucroalcooleiro já passou por experiências negativas no passado. Porém este setor não precisa de subsídio, pois já possui uma base produtiva consolidada. Ressaltou a necessidade de se definir quanto que se quer compensar as emissões proveniente da gasolina com etanol, o mesmo vale para o biodiesel. Quanto ao biodiesel, ele destacou que existe um limite na participação do etanol no biodiesel e esse aumento da participação tem que ser gradual, pois as matérias primas do biodiesel não são produzidas especificamente para produzir biodiesel. Uma saída para esses entraves é: diversificar a produção e a produção de etanol com milho. No entanto, é preciso aumentar a produção de milho sem aumentar as emissões. Isso pode ser feito com redução do uso de compostos nitrogenados no cultivo. Frisou que uma alternativa para reduzir as emissões seriam variedades que necessitem de menos compostos nitrogenados. Um outro ponto importante é diversificar na produção, melhor as práticas agrícolas, aumentar eficiência energética.

- ***3) Combate ao desmatamento (Talanoa Brasil) – Vídeo: Tempo: 02:22:15 – 02:30:36 / Áudio: 2:22:26 – 2:30:50***

  Jair Schmitt, diretor do Departamento de Florestas e Combate ao Desmatamento da Secretaria de Mudança do Clima e Florestas do Ministério do Meio Ambiente (SMCF/MMA), destacou que o Brasil tem um caso de sucesso em reduzir emissões de GEE provenientes do desmatamento, por conta da redução do desmatamento da Amazônia. Porém, ainda existem desafios para se alcançar as metas já acordadas e consequentemente aumentá-las. Frisou que a redução de GEE provenientes da redução do desmatamento da Amazônia é o maior esforço de redução de emissão do planeta! Falou da importância da criação de políticas públicas como agente impulsionador e responsável pela iniciativa em reduzir e combater o desmatamento. O resultado deste processo é o PPCDAm que está em sua quarta fase! Foi destacado por ele alguns elementos de sucesso: aperfeiçoamento do monitoramento da cobertura florestal (trazer essa informação transparente, pública para a sociedade); investimento no controle de medidas coercitivas no combate ao desmatamento; criação de muitas Unidades de Conservação; envolvimento da sociedade e cadeia produtiva muito além de um plano de governo. Um dos principais desafios é demonstrar que a floresta em pé pode ser atrativa economicamente, exemplo: mesmo com a redução do desmatamento a produtividade na agricultura cresceu muito. Ou seja, promover desenvolvimento econômico mantendo a biodiversidade da floresta! Para conseguir isso é preciso vencer um grande obstáculo: como fazer que esses benefícios, promovidos pela manutenção da floresta, cheguem à todas as pessoas?

- ***4) Energia Eólica (Talanoa Brasil) – Vídeo: Tempo: 01:12:07 – 01:19:40 Áudio: 1:12:07 – 1:19:40***

A Presidente Executiva da ABEEólica, Elbia, apresentou seus dados sobre energia eólica. Segundo ela para o setor de energia a meta acordada pelo Brasil poderia ter sido mais ambiciosa, visto que temos amplo "know-how" em energia renováveis. Políticas públicas no passado contribuíram para impulsionar o setor (ProInfra). Hoje este setor não precisa mais de subsídios do governo, pois está altamente competitivo, através dos leilões de energia competitivos. Atualmente a energia eólica é R$ 40,00 mais barata que a energia proveniente de hidrelétrica, além de promover desenvolvimento econômico e social nos lugares onde a energia é produzida (Norte e Nordeste), que no Brasil são lugares de baixa renda. Elbia ainda frisou a importância de ter ocorrido no passado o pontapé político (subsídios, incentivos, investimento em ciência e tecnologia) para que hoje o setor fosse forte e competitivo. Ainda mais importante que isso, foi a mudança na contratação de energia feita pelo governo, que passou a comprar energia em leilões de energia renovável. Isso se tornou num grande exemplo de mercado, houve o desenho político, mas o mercado deu a resposta, se tornado autossuficiente.

- ***5) Assentamento rural no Semiárido: Canindé de São Francisco (Talanoa Brasil) – Vídeo: Tempo: 01:58:40 – 02:12:00 / Áudio: 1:58:55 – 2:10:15***

O Geodínio, representante da comunidade do assentamento de Canindé de São Francisco, destacou como a agricultura no sertão é sofrida e como o aumento da seca afeta drasticamente a produção, seu assentamento sofre com a queda na produção e contaminação dos lençóis freáticos. Foi destacado por ele, a parceria com diversas instituições (IBAMA, INCRA, ADEMA, SEMAR, MMA, PNUD, GEF) para uma produção mais sustentável. Para contornar essa realidade ele apresentou algumas ações que o seu assentamento está fazendo para diminuir a vulnerabilidade à mudança do clima: uso de cisternas, educação ambiental (diminuição de insumos químicos na agricultura), ecofogão, reflorestamento, manejo mais sustentável, construção de barragens em áreas com forte assoreamento e trabalho comunitário. Devido à essas ações, alguns resultados já estão surgindo: surgimento de novas nascentes. Ressaltou também a importância da agricultura familiar para manter as famílias no campo e na geração de emprego na região. Ele ainda destacou que com o apoio de políticas públicas pode haver melhorias na qualidade de vida da região.

- A filha do Geodínio, Deiziane, seguiu falando sobre a importância de trazer os jovens para dentro do processo, da agricultura familiar! Ela destacou que projetos de educação ambiental foram importantes para manter os jovens no campo produzindo e sobretudo produzindo de forma mais sustentável. Ressaltando que os projetos foram fundamentais para garantir um manejo mais sustentável no assentamento, trouxe economia com uso dos fogões ecológicos e cisternas, por exemplo, garantiu segurança hídrica com o uso das cisternas e segurança alimentar com uma alimentação mais saudável. Além disso, com os projetos houve uma interação maior entre os assentados, principalmente entre os jovens.

- ***6) Um grande caso de sucesso para mitigação da mudança do clima foram os projetos no âmbito do Mecanismos de Desenvolvimento Limpo (MDL). (Talanoa Brasil e Povos Indígenas) – Tempo: 04:33:31 – 04:41:27 / Áudio: 4:34:29 / 4:41:38***

José Domiguez Gonzales Miguez, diretor de Políticas de Mudança do Clima do MMA e integrante da UNFCCC. Destacou a importância do crédito de carbono, no âmbito do MDL, como agente redutor das emissões de GEE em diferentes setores da economia e como essas ações foram importantes para o desenvolvimento sustentável e geração de emprego e melhoria na qualidade de vida, nas regiões onde os projetos foram implementados. Além de possuir um grande diferencial por reduzir os custos de implementação das ações de redução de emissão de GEE. Destacou a enorme redução de GEE através de projetos de MDL no Brasil e mundo. Miguez compartilhou duas histórias que vivenciou enquanto foi coordenador de mudança do clima do Ministério da Ciência, Tecnologia< Inovações e Comunicações:

Talanoa Povos Indígenas

- Aterro sanitário de Gramacho (RJ): Este aterro era cheio de urubus que ficavam em cima do promontório. Após a instalação de flares para a queima do metano proveniente do chorume, os urubus usavam o ar quente proveniente da queima do metano para alçar voo.

- Projeto da Sadia: O Projeto de MDL da Sadia era composto por 1500 fazendas criadoras de porcos. Antes da implementação do projeto os dejetos da suinocultura eram dispensados numa lagoa sem cobertura. Após a instalação de biodigestores e cobertura dessas lagoas, o metano passou a ser queimado e muitas fazendas usam a energia gerado pelo biodigestor em suas fazendas. "No dia que fui visitar uma das fazendas, estava chovendo muito e o proprietário disse que depois da implementação do projeto de MDL ele não fica mais apreensivo em dias de chuva. Pois com a cobertura das lagoas os dejetos não caem mais no rio que corre atrás da lagoa e ele não é mais multado pelo órgão ambiental." relatou Miguez.

➢ *7) Xingu (Talanoa Povos Indígenas)*

O representante do Conselho Curador da Associação Rede de Sementes do Xingu, Oreme Ikpeng, explicou que a Associação é uma rede de trocas e encomendas de sementes de árvores e outras plantas nativas das regiões do Xingu, Araguaia e Teles Pires. Com dez anos de existência, já foram viabilizados a recuperação de mais de 5 mil hectares de áreas degradadas na região da Bacia do Rio Xingu e Araguaia e outras regiões de Cerrado e Amazônia. O principal objetivo é recuperar as nascente e cabeceiras do Xingu. Foram utilizadas 196 toneladas de sementes de mais de 220 espécies nativas. As sementes são coletadas, principalmente por mulheres indígenas, e beneficiadas por 600 coletores, gerando uma renda de R$ 4,2 milhões repassadas diretamente para as comunidades. Os grupos são formados por agricultores familiares, indígenas e viveiristas, a principal forma de plantio é a muvuca.

A rede visa disponibilizar sementes da flora regional em quantidade e com a qualidade que o mercado demanda; formar uma plataforma de troca e comercialização de sementes; gerar renda para agricultores familiares e comunidades indígenas e servir como um canal de comunicação e intercâmbio entre coletores de sementes, viveiros, ONGs, proprietários rurais e demais interessados.

➢ *8) Mudança do Clima e Saúde (Talanoa Científico): Vídeo 003– Tempo 00:58 Áudio câmera central 0002 – Tempo: 01:32*

Para a pesquisadora Sandra de Souza Hacon, da Fundação Oswaldo Cruz (FioCruz), a área de saúde está ligada a diversos setores da economia. "A poluição atmosférica das cidades impacta na qualidade de vida e na saúde da população" alerta a pesquisadora.

➢ *9) A história sobre o conhecimento da Mudança do Clima (Talanoa Científico)*

Vídeo 003– Tempo 15:11 - Áudio câmera central 004 – Tempo 00:52

Gylvan Meira Filho, professor da USP, falou sobre o histórico do conhecimento sobre a mudança do clima. Segundo ele, no final da década de 80 foi início das discussões sobre o assunto nos EUA, como resultado da internalização de todo esse processo foi a criação do IPCC.

- ***10) IPCC (Talanoa Brasil) – Vídeo: Tempo: 04:42:42 – 05:01:36 / Áudio: 4:43:00 / 5:01:47***

  Thelma Krug, pesquisadora do INPE e vice-presidente do IPCC, disse que talvez o sucesso do Acordo de Paris se deva pela liberdade dada a cada país para fazer e reportar suas ações de redução de emissão. A pesquisadora relatou que o estabelecimento da meta de 1,5ºC foi decorrente da forte pressão das pequenas ilhas, que serão as mais afetadas com o aumento de 1,5ºC. Por isso, a pedido desse grupo, o IPCC fez um relatório especial das consequências desse aumento de 1,5ºC. Esse relatório terá um perfil diferente dos anteriores, com ênfase no desenvolvimento sustentável, de que ações do ponto de vista do desenvolvimento social (redução de pobreza, desigualdade), econômico e ambiental, poderão ser feitas. Destacou como é importante trazer a discussão da parte social, de saúde e econômica para dentro do contexto climático e de como todas essas questões estão interligadas e devem caminhar juntas. Destacou a necessidade de se avaliar as ações de reflorestamento, como isso deve ser feito. Ela questionou se as espécies usadas nas ações de reflorestamento são resilientes à mudança do clima. Ressaltou a falta de governança e como isso pode reduzir as chances de sucesso do cumprimento das metas acordadas. Disse ainda que é necessário legislação e políticas estratégicas para atingimento da meta. Para alcançar o cumprimento das metas é necessário investimento na ciência, tecnologia e inovação; integrar todos os ministérios na discussão das ações. Destacou o protagonismo do Brasil na produção de biocombustível (bioetanol) e que o IPCC fará destaque ao Brasil em seu relatório. Frisou que a redução no Brasil deve ser feita, principalmente, nos setores de energia, transporte e processos indústrias, pois no setor de uso da terra continuaríamos vulneráveis à mudança do clima.

- ***11) Unidades de uso sustentável: Reserva Extrativista – RESEX (Talanoa Brasil)*** – **Minuto: 03:13:54 / 03:23:40**

  O Joaquim Belo, presidente do Conselho Nacional das Populações Extrativistas (CNS), falou sobre o uso sustentável das florestas. Destacou que uso de unidades de conservação de uso comum foi principalmente uma questão de sobrevivência! Pois, o modelo implementado até então pelo INCRA não se aplicava aos povos da floresta. Esse modelo de unidade de conservação surgiu da necessidade de ver os povos que vivem na floresta de uma outra forma, de garantir que esses povos tirem seu sustento de acordo com sua cultura. Com isso surgem as unidades de conservação de uso comum, hoje 13% do território da Amazônia são de unidades de conservação de uso comum., porém ainda existem muitas áreas sem destinação, como as áreas de bacia. Essas áreas hoje são extremamente vulneráveis devido a intensa ação de garimpo e mineração e muito importante para segurança hídrica dos povos que vivem da floresta. Ele destacou a desconexão das políticas públicas e dos órgãos de governo com as necessidades desses povos, a importância de políticas públicas para manter os jovens na floresta e a necessidade de políticas de desenvolvimento. Frisou a falta de segurança da população e a permanente ameaça de madeiras ilegais sobre a população.

- ***12) Banco Pérola (Talanoa Brasil) – Vídeo: Tempo: 03:05:53 – 03:12:10 / Áudio: 3:06:04 / 3:12:17***

Bárbara F. Dalla Costa, representante do Banco Pérola, apresentou o trabalho de financiamento do Banco Pérola para pequenos empreendedores. O banco é uma organização da sociedade civil de interesse público sem fins lucrativos. Sendo voltado para à concessão de crédito orientado, em especial para microempreendedores, microempresas e empresas de pequeno porte.

Roteiros das histórias dos Diálogos Talanoa Brasil (legendas traduzidas para o inglês)

Talanoa Script

Version 4

Voiceover:

Share stories that help fulfill and strengthen the commitments made by countries to reduce global warming, this is the goal of the facilitative dialogue platform, which was renamed Talanoa Dialogue.

Three questions are asked: Where are we? Where do we want to be? How do we get there?

Since COP 23, Brazil has plunged into the Talanoa proposal. There were six rounds involving federal and state governments, civil society, the academic community, the business sector and indigenous people.

During this process, more than 130 stories were told.

Such as Professor Beth's story

Professor Beth said that she had a project to offer 100 solar heating systems to a poor community.

Or as the story told by Fábio Feldman about the implementation of the alternate day traffic project in the largest city in Brazil, São Paulo.

Such stories have helped us understand where we are, what we want and how we'll get there.

The Talanoa dialogues in Brazil were encouraged by the Ministry of Environment and the Ministry of Foreign Affairs.

Talanoa is a native word from the Pacific, which means inclusive, participative and transparent dialogue.

And it is through this process that the Brazilian Ministry of Environment brings to COP 24, not the position of the Federal Government, but rather, the story told by the Brazilian society.

Script:

Voiceover: text narrated by a female voice

Sound bite: audio taken from interviews or film

GC: Characters displayed on the screen informing the name and institution.

Motion Graphics: Moving visual elements such as photos, videos, vectors, texts or special effects.

Audio	Video (images, motion graphics, effects)
Share stories that help fulfill and encourage emphasis on the commitments of the countries to reduce global warming, which precedes 2020, this is the goal of the facilitative dialogue platform, which was renamed Talanoa Dialogue.	Talanoa website screenshot.
Three questions are asked: Where are we? Where do we want to be? How do we get there?	Motion graphics with the questions on the screen.
Since COP 23, Brazil has plunged into the Talanoa proposal. There were six rounds involving federal and state governments, civil society, the academic community, the business sector and indigenous peoples.	Images of meetings
During this process, more than 130 stories were told.	Motion Graphics: Number of stories told: *06 rounds involving: * Federal and state governments * Civil society * Academic community

	* Business sector * Indigenous peoples
Such as Professor Beth's story	Image of Beth
Beth: I work with solar energy	
Professor Beth said she had a project to offer 100 solar heating systems to a poor community.	Images of the meeting
Beth: And when I arrived at the housing project and said that I had 100 solar heating systems, nobody wanted them. Then one day, someone asked, "Professor, this water heated by the sun isn't carcinogenic, is it? And only poor people use it?" I replied that, "No, on the contrary. Only rich people use it!" "I always kid that the purpose of my entire academic life was to reach this point of saying no! We can bring this technology to the low-income population."	GC: Elizabeth Marques Duarte Pereira Coordinator of Energy Studies at the UNA University Center
Or like the story told by Fábio Feldman about the implementation of alternate day traffic project in the largest city in Brazil, São Paulo.	Images of the meeting
"I thought that divulging information about health would be enough to receive the support of society. The fact is that we neglect the symbolic dimension of automobiles. Incredibly, people who didn't drive and took the bus were against the implementation of alternate day traffic, whose importance was to bring this subject to the table. There was a change in behavior.	GC: Fábio Feldman Sustainability Consultant
Such stories have helped us to understand where we are, what we want and how we'll get there.	Images of meetings
The Talanoa dialogues in Brazil were encouraged by the Ministry of Environment and Ministry of Foreign Affairs.	Images of meetings
We believe that this format has many positive aspects, because it really makes us sit down and listen; sit down to really listen and process all the positive ideas from all the stories told by each participant.	GC: Thiago Mendes, Secretary of Climate Change and Forests of the Ministry of the Environment
Talanoa is a native word from the Pacific that means inclusive, participative and transparent dialogue.	Images of COP 23 and more images of meetings.
And it is through this process that the Brazilian Ministry of Environment, brings to COP 24, not the position of the Federal Government, but rather, the story told by the Brazilian society.	Motion Graphics: Map of Brazil with scenes of the meetings.

	Motion Graphics: Support World Bank Group (Logo) Sponsorship NDC Partnership (Logo) Federal Ministry of Environment (Logo), Protection of Nature, Construction and Nuclear Safety (Federal Republic of Germany) Deutsche Gesellschaft fürInternationale Zusammenarbeit (GIZ) GmbH Logo Realization Ministry of Foreign Affairs (Logo) Ministry of the Environment (Logo) Governo Federal (Ordem e Progresso) (Logo)

Transcrição para tradução

CAR – Cadastro Ambiental Rural

CAR – Brazilian Rural Environmental Registry

Por que que o Cadastro Ambiental Rural virou algo importante?

Porque foi simples.

Why has the Rural Environmental Registry become important?

Because it was simple.

Do ponto de vista tecnológico, software livre, nada de sofisticação.

From the technological point of view, free software, no sophistication.

Foi voluntário, não foi obrigatório. O entendimento foi mais importante do que o regimento. Porque o setor produtivo se ofereceu pra apresentar seus dados.

Então acho que esse é um ponto muito importante, quer dizer, a gente conseguiu, dentro da área de meio ambiente, ter uma aproximação com o setor produtivo, amigável.

It was voluntary, not an obligation. Understanding was more important than the regiment. Because the productive sector offered to present their data.

So I think this is a very important point, I mean, we were able, within the area of environment, to have a productive, friendly approach with the sector.

Acho que o segundo ponto mais importante foi a articulação com os estados. Acho que a gente conseguiu, com o cadastro, trazer os estados para perto do problema, mas também pra perto da solução.

I think the second most important point was the articulation with the states.With the registry, I think we managed to bring the states closer to the problem, but also closer to the solution.

Terceiro foi parceria, né. Diálogo… diálogo. Reunião de pais e mestres, nós távamos lá, com o cadastro… Foi uma coisa que a gente foi cativando, cultivando.

The third one was partnership, right. Dialogue... dialogue. Parents and teachers meeting , we were there, with the registry... It was something that we captivated, cultivated.

Mais dois pontos importantes pra finalizar.

Two other important points to finish.

Quando a gente colocou em consulta pública o retorno dos dados, isso deu

tranquilidade pra academia, pro setor empresarial…

When we open the return of data for public consultation, this calmed the academy, the business sector...

Você ter hoje, 5 milhõese 600 mil pessoas na internet? Você pode ver… "tem APP, não tem APP… Cumpriu reserva legal? não cumpriu?...."

How about having 5 million and 600 thousand people on the internet today?You know... "you have APPs or not... You accomplished the legal reserve... or not..."

Ah, outra coisa assim, que a gente consegue ver é o tanto que tá mudando do ponto de vista de gestão territorial.

Oh, another thing like that that we can see is how much it is changing from the point of view of territorial management.

O que tem a ver cadastro com clima?

What does it have to do with the weather?

Aparentemente nada… Mas na hora que você começa a ver que o setor privado hoje tem 166 milhões de hectares de floresta. E esse ativo a gente não conhecia.

Apparently nothing... But then you start to see that the private sector today has 166 million hectares of forest.And this asset we did not know.

Conhecíamos o setor público. “ah, o setor privado tem “tanto” de deficit… opa!”

We knew the public sector."oh, the private sector has"whatever"deficit ... wow!"

Não é um mero cadastro do ponto de vista de ter uma informação alfa numérica. Ele passa a ser um instrumento de gestão territorial muito importante.

It is not a mere registry from the point of view of having alphanumeric information. It becomes a very important territorial management tool.

São 500 milhões de hectares na base. O Brasil tem 851 milhões de hectares.

Populações tradicionais dentro. Nós temos 43 milhões de hectares de assentamentos fundiários, 17 milhões e meio de hectares de reserva extrativista, de populações de comunidades tradicionais. Então o Brasil tá muito bem mapeado.

There are 500 million hectares at the base. Brazil has 851 million hectares.

Traditional populations within. We have 43 million hectares of land tenure, 17.5 million hectares of extractive reserve of populations of traditional communities. So Brazil is very well mapped.

Hoje você tem possibilidade de ter não só conhecimento da propriedade, mas da atividade que está acontecendo na propriedade, da qualidade da floresta que tá na propriedade quando você se casa isso com o inventario florestal nacional e, uma possibilidade de você ter uma gestão territorial totalmente diferente.

Today it is possible to have not only knowledge on the property, but on the activity being carried out on the property, the quality of the forest on the property when you relate it to the National Forest Inventory, and a possibility of having a totally different territorial management.

Eu fico muito orgulhoso, em ver que isso foi feito… inteligência nacional, software livre, equipe raís – a média de idade são 33 anos…Um orgão pequeno, nós somos 300 funcionários, servidores públicos. Desses 300, hoje nós temos 15 dedicados ao cadastro… A universidade nos ajudando…

I am very proud to see that it was done... national intelligence, free software, great team - the average age is 33 years... A small department, we are 300 employees, civil servants. Of these 300, we have now 15 dedicated to registry... The university helping us...

Como aconteceu? De uma forma muito simples: energia, dedicação, paixão.

How did it happen?In a very simple way:energy, dedication, passion.

Um trabalho aparentemente simples, mas que hoje todo mundo reconhece que é uma referência.

Apparently a simple work, but that today everyone knows is a reference.

Combate ao desmatamento

Fighting deforestation

Qual a situação, em que pé que estamos em relação ao controle do desmatamento. Um recorte até um pouco mais específico em relação à Amazônia, mas o Brasil tem sim um caso de sucesso de redução de emissões de gás de efeito estufa decorrente de florestas em especial por conta da redução do desmatamento na Amazônia.

What is the situation, where are we in relation to deforestation control? It's view that is even more specific in relation to the Amazon, but Brazil does have a successful case of reducing greenhouse gas (GHG) emissions from forests, especially due to the reduction of deforestation in the Amazon.

Então de 2004 que nós tínhamos uma taxa de 27.7 mil quilômetros quadrados, nós em 2017, com alguns sobe desce, mas nós estamos num patamar dos 6.957. Uma redução de 75% em relação a 2004.

So, since 2004 we had a rate of 27.7 thousand square kilometers. In 2017, with some ups and downs we are at a level of 6,957. A reduction of 75% if compared to 2004.

Quatro elementos são importantes. O primeiro deles acho que o Brasil vinha num trabalho de monitoramento da cobertura vegetal desde 87, trabalho pioneiro do INPE (Instituto Nacional de Pesquisas Espaciais), mas foi aperfeiçoando isso, e aí tem um ditado que diz, se não me engano, "não se gerencia aquilo que não se mede".

Four elements are important. The first one, I think Brazil has been working on monitoring vegetation cover since 87, a pioneering work of INPE (National Institute for Space Research), but it has been improved, and there's a saying that says, if I'm not mistaken, "you don't manage what you can't measure."

Então monitorar e trazer a informação pública transparente para que a sociedade perceba o tamanho do problema é fundamental.

Then monitoring and bringing transparent public information so that society understands the problem is critical.

O outro fator importante dentro dessa estratégia de combate ao desmatamento... há quem diga que é ruim, há quem diga que é bom. Eu acho que os dois se aplicam. O Brasil investiu inicialmente, continua investindo no comando e controle, nas medidas coercitivas para controlar o desmatamento. Ou seja, você vai induzir o comportamento das pessoas a não desmatarem pelo castigo.

The other important factor in this strategy to fight deforestation... some people say it's bad, some say it's good. I think both apply. Brazil initially invested, and continues investing in

command and control, and coercive measures to control deforestation. That is, you will induce people's behavior of not deforesting by punishment.

Outro fator importante, o Brasil nessa trajetória criou muitas unidades de conservação na Amazônia. É uma estratégia importante de você conservar a floresta e, evidentemente não só por conta de carbono, é porque biodiversidade no sentido amplo é extremamente importante para a vida no planeta.

Another important factor: Brazil in this sense has created many conservation units in the Amazon. It's an important strategy for you to preserve the forest, and of course not just because of carbon, it's because biodiversity in the broad sense is extremely important to life on the planet.

E o quarto fator que aí sim eu conecto a outros elementos é a sociedade, por meio da sociedade civil organizada ou no próprio setor produtivo, independente de um plano e a própria posição de governo, ele começou também a se mobilizar.

And the fourth factor that I connect with the other elements is society, by organized civil society or in the productive sector itself, regardless of a plan and the very position of government, which also began to mobilize.

Então as cadeias produtivas, setores produtivos começaram a perceber porque para o sucesso e sustentabilidade do seu negócio era importante olhar para a questão do desmatamento, ou pela própria pressão, que é a sua economia, sua dinâmica exigia.

Then the productive chains and productive sectors started to realize why it was important for the success and sustainability of their business to look at the issue of deforestation, or due to pressure, which is its economy, its dynamics demanded.

Então nós temos sinalizações que é possível compatibilizar desenvolvimento econômico com conservação, proteção ambiental. Evidentemente que ainda existe o desafio de como fazer isso, como aperfeiçoar, e sobretudo como fazer com que esses benefícios cheguem a todas as pessoas e não fiquem concentrados em A, B, ou C.

So we have signs that it is possible to reconcile economic development with conservation, environmental protection. Obviously, there is still the challenge of how to do it, how to improve it, and above all how to make these benefits reach all people and not focus on A, B, or C.

Sim, nós podemos contribuir decisivamente para a redução dos gases efeito estufa e para a redução do aquecimento do planeta por meio da redução do desmatamento, da conservação da floresta. O Brasil fez, foi capaz e a partir dessa perspectiva nós podemos ser mais capazes ainda.

Yes, we can make a decisive contribution to reduce greenhouse gases and reduce global warming by reducing deforestation and preserving forests. Brazil did it, we could and from this perspective, we may be even more capable.

Então acho que onde estamos demonstra isso e sinaliza alguns caminhos de como chegar no

que a gente está ambicionando.

So, I think that our situation shows this and signals some ways of getting where we are aiming for.

Thelma Krug,

Researcher at INPE (National Institute for Space Research) and International Panel on Climate Change - IPCC Vice-Chair

Quando você fala do acordo de Paris, de manter o aumento médio de temperatura bem abaixo de 2 graus - ou seja, os negociadores são ruins porque eles não dizem o que bem abaixo, mas eles sinalizaram tentando perseguir o 1.5 até porque, como foi falado aqui, uma pressão das pequenas ilhas muito forte e que eu acho que vai ser o diferencial nas negociações. As pequenas ilhas nunca foram tão focais.

When you mention the Paris Agreement about keeping the average temperature increase way below 2 degrees – I mean, the negotiators are bad because they don`t say what way below means, but they have pointed out - trying to reach 1.5 because, as it was said here, there has been a very strong pressure from small islands that I think is going to be make a difference in the negotiations. The small islands had never been so focal.

Vamos acrescentar que isto deverá ser feito no âmbito de você aumentar o esforço global, né, pra enfrentar a questão ameaça de mudança do clima…

redução de desigualdade, redução de pobreza, ou seja, você entrou com uma contextualização de desenvolvimento sustentável, né…

Let´s add that this should be done in the sense of raising global efforts to face the threatening issue of climate change…

Inequality reduction, poverty reduction, I mean, now we live a context of sustainable development, right…

A preocupação que eu tenho é que com toda a mudança climática que nós estamos vendo como consequência da mudança do clima e do aquecimento, não necessariamente de uma forma direta atribuída à mudança do clima, mas nós estamos vendo, não é? Alterações bastante significativas nas secas, nas inundações e isso, na Amazônia tem sido uma coisa que ninguém pode negar que está acontecendo com uma frequência.

E hoje já está sendo atribuída por alguns pesquisadores brasileiros - não sou eu - à questão da mudança do clima, né.

One thing I worry about is all this climate change we have been seeing as a consequence of climate change and global warming, not directly attributed to climate change, but we have been seeing it, right? Very significant alterations in the shape of drought, inundations and that, in the Amazon, has been something that nobody can deny is happening very often.

Então, essa vulnerabilidade… A mesma coisa, poderia acontecer se você tiver reflorestamento. Se você tiver uma queima de larga escala, que é o que você está vendo, incêndio etc etc… todo esse carbono que você colocou ali…ou seja, vai acabar contribuindo mais ainda pra mudança do clima, né… Porque você estaria liberando todo aquele carbono e mais do que o carbono: o CH4, o Oxido

Nitroso, ou seja, não é só o CO2 que você removeu. A hora que você jogar pra atmosfera, ele vai potencializado ali por conta das emissões por queima, né…

So, this vulnerability… the same thing could happen if reforestation takes place. If there is burning at a large scale, which is what we have been seeing, open fires and so on … all this carbon you have put there, you know, is going to end up contributing even more to climate change, right … Because we`d be releasing all that carbon and more than that: CH4, nitrous oxide, so it is not only CO2 that you have removed. When we release it to the atmosphere, it is going to be potentialized there because of the emissions resulting from the burning, right…

Então são pontos importantes pra gente refletir, né. Não que florestas e reflorestamento não tenham uma contribuição. Mas a gente tem que estar muito atento, já que a gente tá falando da questão de Talanoa, e tá falando também da voz do Brasil lá fora, da importância de que essas reduções sejam feitas na área de energia, na área de transporte, na área dos processos industriais…Porque, se isso não acontecer, definitivamente, como a gente já tem dito – o IPCC tem dito isso claramente – a gente não consegue segurar isso e aquele uso da terra vai estar vulnerável a todos esses eventos extremos e distúrbios, que estão ficando cada vez mais frequentes e mais intensos, né.

So those are important questions for us to think about, right. It is not that forests and reforestation don`t play a role. But we have to be alert because we are talking about Talanoa and we are also talking about Brazil`s voice abroad, about the importance of those reductions in the energy field, in the transportation field, in the field of industrial processes… Because, if that doesn`t happen, as we have been saying – IPCC has been stating that clearly – we are not going to hold that and that use of land is going to vulnerable to all of these extreme events which have been getting more frequent and more intense, you know.

Então eu acho que são preocupações que eu coloco: o Brasil teria grandes potencias pra reflorestamentos de larga escala, mas eu acredito, particularmente, que as oportunidades que a gente tem no país pra uma matriz de energia muito mais diversificada, muito mais limpa, ou seja, nós estamos num caminho que podemos perseguir como pouquíssimos países podem fazer no mundo, né.

So I think those are the issues I worry about: Brazil has a great potential for large-scale reforestation, but I, particularly, believe that we have opportunities in the country for a much more diversified and much cleaner energy matrix, we are at a much higher advantage than most countries, you know.

Então são algumas mensagens que eu acho interessantes. E, principalmente, todas essas condições que o IPCC coloca pra que a gente possa segurar o aumento da temperatura num nível baixo.

So those are some messages I find interesting. And, specially, all of those conditions that IPCC establishes for us to keep temperature increase at a lower level

É físico, é viável? Ele não vai dizer que não é. Mas ele vai colocar condições de contorno que são muito fortes, vão exigir essa transformacão societária. E este esforço está pra ser visto.

Is it physical? Is it feasible? He is going to say it isn`t. But he is going to set very strong conditions that will demand this transformation from society. And that effort is yet to be seen.

Eu ainda sou otimista e eu acho que dá pra fazer.

I am still optimistic and I think it can be done.

Unidade de Recuperação de Áreas Degradadas (URAD)
Recovery Units of Degraded Areas
Assentamento Florestam Fernandes
Florestan Fernandes Settlement
Geodinio Cassiano de Lima
Deysiane Souza de Lima

Transcrição

Vou falar aqui um pouco da nossa realidade lá do sertão sergipano. Especificamente de Canindé do São Francisco, que a gente tem lá 26 assentamentos, que as famílias sobrevivem e agregam valores de trabalho na área da agricultura. Apesar que a gente vem enfrentando uma grande mudança de clima.

I will talk a little about our reality in the backwoods of Sergipe. Specifically Canindé do São Francisco, where we have 26 settlements in which families survive and add work values in the agriculture area, in spite of the big climate change we have been facing.

A gente vem vivenciando aí mais ou menos uns 7 anos de seca... a perda de animais, a produção agrícola que vem cada vez mais caindo.

We have been living around 7 years of drought... the loss of animals, the agricultural produce is increasingly declining.

Além da gente tá passando pela dificuldade de um semiárido seco, com a água extinta, a produção de alguns perímetros que tem lá na nossa região, eles vem usando ainda um número considerado alto de produtos químicos, que estão contaminando também a água.

Besides the difficulties of a dry semiarid, with shortage of water, some producers of several perimeters in our region are still using a high number of agrochemicals that are contaminating the water too.

A nossa região é uma área completamente devastada pois algumas pessoas no passado faziam carvão, outras levavam madeira pras indústria.

Our region is a completely devastated area because in the past some people used to make charcoal, others used to take wood to the industries.

Mas através de alguns trabalhos que estão sendo desenvolvidos a gente sentiu que é possível a gente melhorar (a região).

But through some works that are being developed we felt that it's possible for us to improve (the region).

O Ministério do Meio Ambiente está com um projeto lá, desenvolvido com as URADs, que são questões ambientais, sociais e produtivas.

The Ministry of Environment has a project there, developed with the URADs (Recovery Units of Degraded Areas and Reduction of Climate Vulnerability), which deals with environmental, social and production issues.

Eu sou cordenadora do grupo de jovens que tem lá, que foi que criado a partir desse projeto que incentivou os jovens à agricultura.

I'm the coordinator of a youth group that was created from this project, which encouraged the young people to agriculture.

A falta de emprego na nossa região é grande e a agricultura vem mantendo as famílias dentro do trabalho.

The lack of jobs in our region is hard and the agriculture has kept the families working.

Os jovens que moram dentro dos assentamento hoje, também sobrevivem através da agricultura, pra manter os seus estudos, comprar os seus materiais escolares, é tudo tirado da sustentação da agricultura.

The young people live inside the settlements nowadays, they live on agriculture to maintain their studies, to buy school supplies, everything comes from agriculture.

E agora, também, com o apoio do Ministério do Meio Ambiente, a gente vem desenvolvento um trabalho sustentável.

And now, with the support of the Ministry of Environment, we have been developing a sustainable work.

A gente tem Cisternas de produção que estão trazendo hoje uma garantia de segurança hídrica.

We have production cisterns that bring water assurance nowadays.

A gente vem produzindo hortaliças pra garantir o sustento da família na segurança alimentar familiar e a Cisterna também de1a água pra captação da chuva.

We have been producing leafy vegetables to ensure the livelihood of the families, in the family food safety, and the cistern for catching and storing rainwater.

Temos também as barragens de base Zero, que além de evitar que leve resíduos para o rio São Francisco, também armazenam água no solo e a vegetação que está ali vai ficar protegida.

We also have the zero-based dams that, besides preventing waste to reach San Francisco River, also store water in the soil and protect the vegetation.

E a gente vem percebendo que o sítio onde ela é construída vem garantindo mais a umidade do solo guardando água e preservando a vegetação mais verde. Então é um trabalho que dando certo e a gente também vem trabalhando a educação ambiental para não aplicar produtos químicos abusivos.

And we have noticed that the area where it is built has guaranteed soil moisture, storing water and keeping the vegetation greener. It is doing fine, and we are also working the environmental education so that harmful agrochemicals are not used.

A gente vem trabalhando também a questão do reflorestamento e a gente hoje vem fazendo esse trabalho em incentivo à proteção das APPs...a comunidade também cuida, não aceita desmatamento. Tem o manejo da caatinga sustentável.

We have also been working on the issue of reforestation and we are doing this work to encourage the protection of the APPs (Permanent Preservation Areas), the community also looks after it, they don't accept deforestation. There is the handling of the sustainable Caatinga.

A gente tem a recuperação de uma nascente que está garantindo o sustento dos animais.

We have the recovery of a spring that is guaranteeing the sustenance of the animals.

Também temos os fogões ecológicos com o objetivo de evitar problemas respiratórios e utilizar apenas madeiras mortas, sem desmatar. Um botijão hoje custa de 88 a 100 reais, então esse projeto dos fogões ecológicos trouxe uma grande economia para as famílias.

We also have the ecological stoves with the objective of preventing breathing problems and using just deadwood, without deforesting. A

gas cylinder costs between 88 and 100 Brazilian reais (BRL), so this ecological stoves project has brought great savings for the families.

Todos esses trabalhos são desenvolvidos coletivamente pela comunidade e a gente vê que as políticas públicas com a implementação de novas tecnologias vêm dando certo.

All these works are developed collectively by the community and we see that public policies with the implementation of new technologies are working.

A juventude tinha uma certa carência de conscientização da natureza. Então, depois que o projeto chegou, eu acho que abrilhantou as mentes, não só dos mais velhos, mas principalmente da juventude, como eu.

The youth had a certain lack of awareness of nature. So, the minds were brighten up after the project arrived, not only of the elders, but mainly of the young ones, like me.

E foi de grande importância porque se não fosse, não teríamos esse conhecimento. Porque conhecimento é poder.

And it was very important because if it were not for the project, we would not have that knowledge. Because knowledge is power.

Energia Eólica

Elbia Silva

Transcrição

Nós acabamos de entrar no cheque especial... do clima.

We have just gone into the climate overdraft.

Daquilo que consumimos na Terra e que ela tem capacidade de recuperar. Então, a partir de agora, estamos no vermelho. Em termos de emissão de CO2, de capacidade de produção e o quanto nós estamos impactando os nossos filhos.

Overdraft of what we consume on Earth and which the Earth is able to recover. So, from now on, we are in the red. In terms of CO2 emission, production capacity and how much we are impacting on our children.

E aí, já falando especificamente da energia eólica, nós estamos avançando bastante.

And then, talking about wind power specifically, we are making good progress.

Do ponto de vista de energia elétrica, o que assumimos em Paris ... vamos cumprir facilmente. Por uma razão muito simples: o Brasil é muito rico em recursos naturais pra produção de energia elétrica.

From the point of view of electric power, the goals we established in Paris will be easily achieved. For a simple reason: Brazil is very rich in natural resources for the production of electricity.

Nossos recursos renováveis pra produção de energia elétrica são muito mais competitivos do que os fósseis. Isto significa que nós não precisamos de subsídios.

Our renewable resources for electricity production are far more competitve than the fossil fuels. That means that we don't need subsidies.

Nós contratamos energia eólica, energia solar nos leilões competitivos de energia naturalmente. A energia eólica é hoje a fonte de energia mais barata do Brasil, ela está na casa de R$100 o megawatt/hora.

We contract wind power, solar power naturally at competitive biddings. Wind power is nowadays the cheapest source of energy in Brazil. It's around R$100 per megawatt-hour.

Neste sentido, nós estamos indo muito bem com a energia eólica e a nossa história de energia eólica no Brasil é recente. Nós estamos falando de 8, 9 anos, quando fizemos o primeiro leilão competitivo. E naquela ocasião, a energia eólica custava 6 vezes mais do que a hidroelétrica.

In this regard we are doing very well with wind power, and our history of wind power in Brazil is recent. We are talking about 8, 9 years, when we did the first competitive bidding. And at that time, wind power cost six times more than the hydroelectric one.

Hoje, o Brasil tem 80 % da produção do maquinário eólico nacional, por conta do programa de nacionalização do BNDES. E é um dos poucos exemplos de política industrial de successo.

Nowadays Brazil has 80% of the national wind farm production due to the BNDES nationalization program, which is one of the few examples of successful industrial policy.

Mas o ponto de partida crucial da indústria foi em 2004, bem antes do primeiro leilão de eólica, que o governo mudou o modelo e o Brasil resolveu, ousou contratar energia eólica em leilões competitivos.

But the crucial starting point of the industry was in 2004, well before the first wind power bidding, when the government changed the model and Brazil decided, dared to contract wind power in competitive biddings.

O Brasil mudou a história mundial da contratação de renováveis. Porque, quando em 2014, 2015, os países europeus resolveram reduzir os subsídios, por questões econômicas, eles resolveram adotar o modelo brasileiro.

Brazil changed the world history of the renewable sources contract when in 2014, 2015, European countries decided to reduce the subsidies and, for economic reasons, they decided to follow the Brazilian model.

E hoje, os preços das renováveis estão caindo no mundo inteiro, tendo em vista a sistemática de contratação.

Nowadays, the prices of the renewables are falling worldwide, due to the contract system.

Então o Brasil trouxe esse exemplo pro mundo, e é um exemplo de mercado. Teve o desenho político mas o mercado deu a resposta.

So, Brazil has given this example to the world, and it's a market example. It had the political design but the market gave the response.

A eólica é hoje a terceira fonte de energia da matriz, nos próximos dois anos já será a segunda.

Wind power is today the third source in the energy matrix, in the next two years it will be the second.

Eu tenho a felicidade de trabalhar com o setor elétrico, a felicidade de ser economista, e representar um setor produtivo que além de contribuir para as nossas metas de redução de emissão e economia de baixo carbono, traz um desenvolvimento socio-economico notável nas regiões do país.

I'm happy to work in the power sector, I'm happy to be an economist and represent a productive sector that, besides contributing to our goals of reduction of pollutant emissions and to a low-carbon economy, brings an outstanding socioeconomic development in the regions of the country.

Mudança do Clima e Saúde

Climate Change and Health

Sandra Hacon

Pesquisadora da Fundação Oswaldo Cruz – FIOCRUZ

Sandra Hacon

Researcher at Oswaldo Cruz Foundation - FIOCRUZ

Tudo que nós falamos até agora… o homem é o centro disso tudo, né.

Man is the center of everything we have talked about so far.

E a sua qualidade de vida, a sua saúde, a sua perda de produtividade, porque a saúde vai influenciar diretamente na perda de produtividade.

And his quality of life, health, loss of productivity. Because health will directly influence in the loss of productivity.

E a partir, verdadeiramente, da Rede de Clima, que impulsionou em progressão geométrica a questão das pesquisas relacionadas à questão saúde.

And the Brazilian Research Network on Global Climate Change has driven geometrically the research related to the health issues.

E nós iniciamos, também, pela Amazônia. Exatamento devido à questão sinérgica das queimadas com os períodos de queima de biomassa, também.

And we started by the Amazon. Mainly because of the synergistic issue of burnings together with burning of biomass periods.

Nós verificamos, que esse impacto, ele já estava acarretando a questão das próximas gerações, porque as crianças estão perdendo sua capacidade pulmonar, reduzindo sua capacidade pulmonar.

We found that this impact is already causing problems to next generations, because children are losing, reducing their lung capacity.

A questão do não saneamento, associada à questão da mudança climática vai acarretar um maior número de internações, ou seja, um maior custo que nós temos para os estados, logicamente, para o país. E isso continua sendo uma questão extremamente importante para adaptação, para mitigação dos impactos relacionados com as mudanças climáticas.

The issue of non-sanitation associated with climate change problems will lead to a greater number of hospitalizations. This means a higher cost for the states, and of course, for the

country. And this continues to be an extremely important issue for adaptation, to mitigate the impacts related to climate change.

E a questão também, da capacitação. Quando nós saímos dos grandes centros urbanos, e vamos para os municípios mais afastados, mudança climática é uma questão que ainda não faz parte.

And also the question of empowerment. When we leave the big urban centers and go to the more distant counties, we can see that climate change is not yet a problem there.

Porém, nós tivemos um avanço grande no Brasil, um avanço grande na área de saúde. Principalmente com a questão de algumas doenças transmissíveis, inclusive a questão da febre amarela bem recente no Rio de Janeiro e em outros estados também, que nós já estamos verificando que têm uma questão relacionada com o aumento de temperatura e com o tempo também, né. Porque nós estamos aumentando o tempo que esses vetores estão disponíveis para causar impacto na sociedade.

However, we had a big breakthrough in Brazil, in the healthcare area. Especially with some communicable diseases, including the very recent yellow fever in Rio de Janeiro and other states as well. And we checked that they are related to the temperature rise and time. Because we are increasing the time these vectors are available to impact society.

Outras áreas da saúde foram avançando. Nós temos o Observatório de Clima e Saúde que tem como um dos seus objetivos principalmente atingir a sociedade em geral, para que a questão das mudanças climáticas, e a sua adaptação, mitigação, chegue até as populações mais vulneráveis.

Other health areas have been advancing. We have the Brazilian Climate and Health Observatory whose main objective is to reach society in general, so that climate change problems, and its adaptation, mitigation reaches the most vulnerable populations.

E o Inpe oferece esse produto pra gente, que é a regionalização dos modelos globais, e com isso nós reduzimos as incertezas dos modelos, podendo fazer pesquisas, estudos, muito mais localizados.

And the National Institute for Space Research (Inpe) offers this product to us, which is the regionalization of the global models, so we reduce the uncertainties of the models, being able to do more located researches and studies.

Porque a questão da saúde está muito ligada às questões sociais, também, locais. Então nós, não podemos ver somente a questão climática e a questão da saúde. Nos temos que correlacionar com a questão educação, com a questão da falta de saneamento básico, a questão de acesso ao serviço de saúde.

And we know that health issues are closely linked to social, as well as local, issues. So we cannot be concern only with the climate and health issues. We have to correlate with education, lack of basic sanitation, access to health care issues.

Agora, eu acho que a coisa mais importante, de forma mais integrada, nós temos que trabalhar de forma integrada, é… podemos ser pró-ativos. É isso que eu acho que nós temos que investir mais. Mas não adianta somente a pesquisa chegar primeiro. Nós temos que chegar primeiro com o serviço de saúde. Nós temos que chegar primeiro com agricultura, recursos hídricos, energéticos. Nós temos que estar de forma integrada.

Now, I think the most important thing for us to do now, is to work in an integrated way. We can be proactive. I believe we have to invest more in this. But it's no use to be the first ones only in research. We have to be the first ones in health care. We have to be the first ones in agriculture, water resources, energy. We need to be integrated.

A história sobre o conhecimento da Mudança do Clima

The History about the Climate Change Knowledge

No final da década de 80 chegou-se à conclusão de que estava havendo alguma problema com o clima. A Academia de Ciências dos Estados Unidos foi convidada a se pronunciar.

At the end of the 1980s it was concluded that there was a problem with the climate. The United States National Academy of Sciences was invited to speak out.

Ela disse, "olha, a temperatura vai aumentar um grau e pouco até o final do século, e depois mais uns dois graus no século seguinte e eu sugiro que sejam criados três painéis. Um pra olhar a ciência, o outro os impactos, e o terceiro as estratégias de resposta.....

They said, "well, the temperature will increase about one degree till the end of the century, and then another two degrees in the following century. I suggest that three panels are created. One to look at Science, another to look at the impact, and the third to look at the response strategies....

O departamento de estado americano chegou à conclusão, corretamente, de que o problema não era só americano, que teria que internacionalizar isso

The United States Department of State (DOS) correctly concluded that the problem was not only American, and it would have to be internationalized.

E junto com a Europa, o Japão, etc., promoveram a criação do tal do IPCC (Painel Intergovernamental sobre Mudanças Climáticas), em conjunto pelo programa Nações Unidas para o Meio Ambiente e Organização Meteorológica Mundial.

And along with Europe, Japan, etc., they promoted the creation of Intergovernmental Panel on Climate Change (IPCC), jointly, by the United

Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO).

A divisão é essa. Quem cuida do acerto entre os países é a Convenção do Clima, por delegação da Assembléia Geral da ONU, e o IPCC faz relatórios de avaliação, e a frase em inglês, que é correta, diz que o material deve ser "policy-relevant but not policy-prescriptive".

The division is this. The United Nations Framework Convention on Climate Change takes care of the agreement between the countries, by delegation of the UN General Assembly, and the IPCC makes evaluation reports; and the sentence in English, which is correct, says that the material must be policy-relevant but not policy-prescriptive.

Ao longo dos anos o nível de certeza sobre a mudança do clima foi aumentando, por duas razões. Uma porque com computadores, conhecimento da física, observações de aerossóis, etc, o pessoal conseguiu reproduzir, modelar as mudanças, a variabilidade natural do clima. Segundo que a mudança do clima aumentou e ficou mais fácil você ver a mudança do clima.

Over the years the level of certainty about climate change has been increasing, for two reasons. First because with computers, knowledge of physics, aerosol observation, etc. people became able to reproduce, to model the changes, the natural variability of the climate. Second, climate change has increased and it is easier see it.

Você prevê o clima dos últimos 100 anos, pega um valor incial e prevê, compara com a observação e vê se bateu.

You predict the climate of the last 100 years, take an initial value and predict it, compare with the observation and check if it matches.

No momento em que você faz isso, você vai lá e, no programa de computador, você desliga a parte do programa ou a sub-rotina que leva em conta o aumento da concentração de gazes de efeito estufa e aí você não consegue reproduzir as observações.

At the moment that you do that, you go to the computer program, you turn off the part of the program or the subroutine that takes into account the increase in concentration of greenhouse gases, and then you are not able to reproduce the observations.

Aí você diz, aha, detectei a mudança do clima". Entre os cientistas você tem que dizer, "olha, a probabilidade de eu ter observado isso na natureza sem a mudança do clima é muito baixa". E é isso que você quer dizer.

Then you say, "aha, I've detected the climate change". Among the scientists you have to say, "look, the probability that I have observed this in nature without the climate change is very low". That's what you mean.

Isso é importante também para você saber qual é o efeito marginal, ou seja, de perturbação das ações ou das políticas públicas, ou do que você faz.

That is also important so that you know what the marginal effect is, that is, the effect of disruption of actions or of public policies, or of what you do.

Você diz, "eu vou fazer isso", aí você gostaria de saber o quanto isso contribui para o atingimento da meta do Acordo de Paris, já que a métrica é temperatura.

You say, "I'm going to do that", and then you want to know how much it contributes to the achievement of the Paris Agreement goal, since temperature is the metric.

Fact sheet dos Diálogos Talanoa Brasil

TALANOA BRAZIL DIALOGUES

COMPILATION OF STORIES FROM THE TALANOA DIALOGUES HELD IN BRAZIL

Disclaimer

The information contained in this document does not necessarily reflect the institutional opinion of the Brazilian government regarding the topic addressed. The document aims to inform the international community about the Talanoa Dialogue held in Brazil in 2018. The actions advocated by different sectors of Brazilian society should be viewed as a demonstration of their engagement with the fulfillment of Brazil´s commitments under the United Nations Framework Convention on Climate Change (UNFCCC).

Background

During the Conference of the Parties (COP 15) held in Copenhagen, the Brazilian government made a voluntary national commitment to the UNFCCC secretariat to reduce greenhouse gas emissions. This commitment, enshrined in Law No. 12.187, which established Brazil's National Policy on Climate Change (PNMC), provides for a reduction of between 36.1% and 38.9% of projected emissions by 2020. In order to achieve this emissions reduction goal, the government created Sectoral Plans for Mitigation of and Adaptation to Climate Change, aimed at implementing technologies that contribute to climate change mitigation in various sectors of the economy such as agriculture, industry, energy, waste, etc.

The Paris Agreement, signed in 2015 at the COP 21 in Paris, further strengthened Brazil's commitment to combating climate change. Brazil submitted to the COP its Nationally Determined Contribution (NDC), which entails the reduction of greenhouse gas emissions by 37% below 2005 levels by 2025. Brazil's NDC also indicates a subsequent indicative contribution involving a 43% reduction below 2005 emission levels by 2030. Brazil´s plan to achieve its goals includes, for example, increasing the share of sustainable bioenergy in its energy matrix, and other actions.

In addition, Item 20 of the COP Decision for adopting the Paris Agreement enjoins parties to undertake a facilitative dialogue to take stock, in 2018, of the parties´ collective efforts towards achieving the long-term goal of the Agreement. At COP 23, under the Presidency of Fiji, this process was renamed the Talanoa Dialogue, aimed at encouraging UNFCCC signatory countries to strengthen their commitments to curb global warming during the period up to 2020. The Talanoa Dialogue is an international platform where all countries can exchange experiences and present their actions to combat climate change.

" Talanoa is a word used in Fiji and other Pacific islands to reflect a process of inclusive, participatory and transparent dialogue. The purpose of Talanoa is to share stories and build empathy in order to make wise decisions that are for the collective good. The Talanoa process involves the sharing of ideas, skills and experience through storytelling ".

The Talanoa Dialogue is based on three questions regarding Climate Change actions:

- Where are we?
- Where do we want to go?
- How do we get there?

In Brazil, this process has been endorsed and implemented in different spheres and sectors. The Ministry of Environment has played an active role in the Dialogues, with the participation whenever possible of the Executive Secretary, Romeu Mendes, and the Secretary for Climate Change and Forests, Thiago Mendes. The Ministry considers that it is extremely important to conduct all the dialogues, and has every expectation that this process will continue to form an ongoing part of all the initiatives to be taken by Brazil to combat climate change. Through its support for the process, the Environment Ministry was able to present to COP 23 not the Federal Government´s position on climate change, but rather the story as told by Brazilian society – effectively a set of positive confidence-building stories from Brazil that show the need to deepen the commitments already undertaken and increase cooperation.

The first Talanoa Dialogue in Brazil took place in July 2018, with the event "São Paulo in the Climate – the Talanoa Dialogue", organized by the São Paulo State Government as its contribution

to the process. The event consisted of an exchange of ideas by academics, civil society, government and private sector representatives on climate issues.

A further Talanoa Dialogue event took place on August 2, 2018, in the Rio de Janeiro Botanic Garden, coordinated by the Ministries of Environment and Foreign Affairs (MRE), with support from the World Bank. This event was attended by more than 30 representatives of different sectors, such as the UNA University Center, the Brazilian Wind Energy Association (ABEEólica), the Secretary of State for Civil Defense (SDC-SC), the MMA Forest Service, the Canidé Semi-Arid Rural Settlement, the Brazilian Association of Vegetable Oil Industries (ABIOVE), Greenpeace, the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA), Banco Pérola, the Extractive Reserves Sustainable Use Units (RESEX), the National Council of Extractivist Populations (CNS), the Environment Secretariat of the Municipality of Extrema (MG), the Brazilian Business Council for Sustainable Development (CEBDS), the Ministry of Mines and Energy (MME), the National Association of Manufacturers of Automotive Vehicles (ANFAVEA), the National Institute of Space Research (INPE), and the Brazilian Forum on Climate Change (FBMC).

On September 27, 2018, the Civil Society Talanoa brought together in Brasilia public sector and civil society representatives from the Ministry of Environment (MMA), the Ministry of Foreign Affairs (MRE), the Government of São Paulo, the Management and Strategic Studies Center (CGEE), the International Council for Local Environmental Initiatives (ICLEI), the Federal University of Minas Gerais (UFMG); the Municipal Prefecture of Recife; the Alberto Luiz Coimbra Institute for Graduate Studies and Engineering Research of the Federal University of Rio de Janeiro (UFRJ/ COPPE), the Amazonia Network (RCA), the Caixa Econômica Federal (Federal Mortgage Bank), the World Wide Fund for Nature (WWF), and others.

The Brazilian Academic and Scientific Community Talanoa took place on October 15 in Brasilia, attended by representatives of the Federal University of Minas Gerais (UFMG), the Federal University of Rio de Janeiro (UFRJ), the University of São Paulo (USP), the University of Brasilia (UnB), the State University of Rio de Janeiro (UERJ), the Federal University of Amazonas (UFAM), Datagro Consultoria, the National Center for Monitoring and Early Warnings of Natural Disasters (CEMADEN), the Ministry of Science, Technology, Innovation and Communications (MCTIC), the National Institute for Space Research (INPE), the Oswaldo Cruz Foundation (FIOCRUZ), and the Brazilian Agricultural Research Institute (EMBRAPA). All these institutions contributed presentations related to Brazil's Paris Agreement goal.

On October 19, the Talanoa Business Sector Dialogue was organized by the Brazilian Business Council for Sustainable Development (CEBDS), attended by representatives of the Brazilian business community, including Banco Santander, Votorantim, Shell, the Climate and Society Institute (ICS), C40 Cities, and SUNEW. The main aim of this event was for participants to gain an understanding of how large companies contribute to complying with the Paris Accord,

as well as examining the role of society in combating climate change.

To conclude the Talanoas rounds conducted in Brazil, the Indigenous Peoples Dialogue -- the most symbolic of all - was held in Brasilia on November 6. This event covered discussion on the actions and results achieved to date by indigenous peoples from different ethnic groups to keep forests standing. In the words of Alberto Terena, one of the representatives of National Articulation of the Indigenous Peoples of Brazil (APIB) "Our lands are preserved because we are able to live in harmony with nature". This round of the Talanoa Dialogue was attended by, among others, representatives from a variety of ethnic groups: Arara, Baré, Borajó, Guajajara, Ikpeng, Kayabi, Macuxi, Manchineri, Manoki, Pankará, Rikbaktsa, Tariana, Tempé, Terena, Tuxá, Wajãpi, Wapichana, Xerente and Xokleng.

The *Talanoas Dialogue Brazil* produced 136 stories of actions that contribute to strengthening Brazil's leading role in the climate agenda. The following compilation synthesizes these stories.

Energy Sector

Brazil's energy sector is characterized by its diverse renewable energy matrix, responsible for around 33% of GHG emissions (according to the 4th Edition of the Annual Estimates of Emissions of Greenhouse Gases in Brazil). As with the agricultural sector, steps are being taken to optimize the performance of the energy sector while reducing greenhouse gases.

Where are we?

The representative of the Management and Strategic Studies Center (CGEE), **Barbara Bressan Rocha**, said that while the energy sector is close to achieving the agreed target on emissions there is still room for improvement. Although the government has taken some action to promote renewable energy, such as RenovaBio (Brazil is the world's second-largest producer of bioethanol and continues to support research on this energy source) there are certain internal issues that run counter to this scenario, for example the fact that "Petrobras has deactivated several biofuel plants".

The Executive President of ABEEOLICA (Brazilian Wind Energy Association), **Elbia Aparecida Silva Melo**, presented data on wind energy, which is currently the third most important energy source (9%) in Brazil´s electricity matrix. Public policies, such as the Alternative Energy Sources Incentive Program (ProInfra), contributed in the past to boosting the wind energy sector, but government subsidies are no longer required since the sector is now highly competitive due to the competitive energy auction mechanism. Wind energy, currently R$40.00 cheaper than hydroelectric power, also promotes economic and social development in low-income regions such as the North and Northeast of Brazil where wind energy is generated.

Professor **Elizabeth Marques Duarte Pereira**, coordinator of energy studies at the UNA University Center, spoke about the use of photovoltaic solar energy in Federal Government social housing projects (Minha Casa Minha Vida Program - MCMV). The solar energy program directly

benefits the low-income population by generating clean, environmentally-friendly renewable energy on the roofs of MCMV residences and condominiums. This technology makes it possible to reduce electricity costs by more than 50% and thus enable users to invest the money saved in other items such as house improvements (in the South and Southeast) and food (North and Northeast).

Carlos Alexandre Príncipe Pires, Director of the Department of Energy Development of the Ministry of Mines and Energy (MME), explained Brazil's National Biofuels Policy known as RenovaBio. This State policy aims to develop a joint strategy to reflect the strategic role played by all types of biofuels in the Brazilian energy matrix to benefit energy security and GHG reduction. Policy objectives are: to promote the appropriate expansion of biofuels in the energy matrix, with emphasis on the need to ensure regular supplies of the fuels; to ensure predictability in the fuel market; to generate energy efficiency gains; and to reduce GHG in the production, marketing and use of biofuels.

Alexandre Salem Szklo, research professor at the Alberto Luiz Coimbra Institute for Postgraduate Studies and Engineering Research of the Federal University of Rio de Janeiro (COPPE / UFRJ), spoke about modeling studies. *The Computable Framework for Energy and the Environment model (COFFEE) involves tracking the macro scenario related to global CO2 emissions, while the Brazilian Land Use and Energy Systems* Model (BLUES), focuses on energy and land use optimization. "Integrated modeling allows the analysis of all the components of the process, and the model uses the data produced to propose new technological options, thus boosting the competitiveness of industry". The COFFEE model is, for example, able to identify the relationships between land use and the production of, and demand for, biofuels.

Where do we want to go?

Elbia Melo, Elizabeth Pereira and Carlos Alexandre Pires strongly emphasized the importance of ensuring renewable energy generation during the periods of intermittency inherent in each energy supply source, and to ensure that all the regions are interconnected (especially the North region).

How do we get there?

According to **Elbia Melo**, the success of wind energy in Brazil is mainly due to two factors: (i) political intervention (subsidies, incentives, science and technology investment), which has made the sector strong and competitive; and (ii) the change in energy contracting methods undertaken by the government, which undertook energy purchasing through the holding of renewable energy auctions. This was an example of a successful market-based approach: the market was able to respond to the political initiatives, and the wind energy generation sector became self-sufficient as a result.

According to **Elisabeth Pereira**, in many of the Minha Casa Minha Solar Energy Program units the residents put up resistance. This called for a need to shift the paradigm in order to convince communities to accept solar energy. "I was even asked whether the hot tap water caused skin cancer!" Training projects have now been set up for all the stakeholders involved in the program (architects, engineers, CAIXA (housing bank) employees, etc.), and user satisfaction monitoring schemes initiated.

In order to achieve the goals of the RenovaBio Program, plans have been drawn up to: (i) establish national emission reduction targets for the fuels matrix over a period of 10 years. The national targets will be broken down into annual targets for individual fuel distributors in accordance with their share of the fossil fuel market; (ii) introduce certification of biofuels production, with

different ratings attributed to each producer, to indicate the amount that is inversely proportional to the carbon intensity of the biofuel produced. This rating will accurately reflect the individual contribution of each producer agent to the mitigation of a specific amount of GHG in relation to its fossil substitute (in terms of tons of CO 2 e). Linking these two instruments will lead to the creation of a Decarbonization Credit Unit (CBIO), a financial asset traded on the stock-exchange, issued by the biofuel producer based on sales invoices (nota fiscal). Fuel distributors will achieve the goal by confirming ownership of CBIOs in their portfolio.

With regard to modeling studies, researcher **Alexander Szklo** said that "With these models it is possible to outline scenarios to estimate the effort required to meet the targets of the Paris Agreement, to restrict global warming to 2ºC, and to offset weak environmental governance that could potentially result in emissions from land use changes. Brazil is the only developing country with an Integrated Global Assessment Model (IAM) which enables it to track global integrated mitigation scenarios to fight global warming".

Agricultural Sector

The 4th Edition of the Annual Estimates of GHG Emissions in Brazil states that the agricultural sector is responsible for 31% of GHG emissions and is highly vulnerable to climate change. Although the Brazilian agriculture sector is of great importance for the country´s trade balance it was, in the past, characterized by low productivity and inappropriate agricultural practices. However, over the last few decades the sector has reached record levels of productivity and production diversification, and excels in the use of more sustainable practices. It is also undertaking numerous actions to reduce greenhouse gas emissions.

Where are we?

Embrapa researcher **Eleneida Doff Sotta** addressed the financing component of the Low Carbon Agriculture Plan (ABC Plan). This Plan focuses on encouraging more sustainable technologies to reduce emissions. It also promotes product and technician training using demonstration units. At present, only one federative state does not possess a State ABC Plan. Credit lines are financed through bank contracts. The ABC Platform monitors emissions and the adoption of appropriate technologies, and generates emission coefficients that are specific to each technology covered by the Plan. "Change through knowledge!" are the watchwords of the ABC Plan.

According to the Ministry of Agriculture, Livestock and Supply (MAPA), 30,568 such contracts were signed between 2010 and August 2018, involving the disbursement of R$ 14.570.421,59 (an average of R$ 476,66 per contract). The total available for this particular credit line was R$ 25.67 billion for this period. 40,484 trainings in the technologies enshrined in the plan were conducted between 2011 and 2017 in the 940 demonstration units distributed throughout the country.

In addition to Federal Government actions under the ABC Plan, private and productive sectors are also actively participating in the implementation of more sustainable technologies in the field. Embrapa researcher and President of the Management Council of the Integrated Crop-LivestockForest (ILPF) Network Association, **Renato de Aragão Ribeiro Rodrigues** drew attention to ILPF initiatives, which include the establishment of a public-private partnership comprising Embrapa, the Cocamar cooperative and a number of different companies (Bradesco, John Deere, SOESP and Syngenta). The Association aims to foster and expand the

use of this technology in the field. Currently an estimated area of 11.5 million hectares have ILPF technology (the states of Mato Grosso do Sul, Mato Grosso and Rio Grande do Sul are the largest areas covered). According to this researcher "The ILPF is a technological package that brings together various technologies that were in the ABC Plan but not included in the NDC. It is a means of combining adaptation with mitigation".

The president of DataAgo, **Plínio Nastari**, outlined agribusiness data: agriculture occupies 7.8% of the territory, livestock farming 21.3%, and the forest 6.6 %. Native vegetation on private properties (environmental assets) accounts for 25.6%. The annual value of the latter consists of 3 trillion environmental services provided by rural land owners (Embrapa Territorial Data). He drew attention to the error made in the past to consider degraded pasture as land use, such as that in the Amazon region. Plínio added that Brazil is a leader in the biofuels area and points to RenovaBio as an example.

Where do we want to go?

Eleneida Sotta highlighted the important progress made in studies related to tropical agriculture emission factors as a way of enhancing the reporting of emissions reductions in the agricultural sector. Brazil's NDC seeks to strengthen the Low Carbon Agriculture Plan (ABC Plan) as the key strategy for sustainable agricultural development, including by restoring an additional 15 million hectares of degraded pasture by 2030, and by adding 5 million hectares using ILPF systems by 2030.

According to **Renato Rodrigues**, the ILPF Network Association aims to achieve a target of 1 million hectares with ILPF, monitored and certified, by 2030 . This will involve focusing on small and medium producers and strengthening the market differential for producers that adopt this technology. This will strengthen the market, with the assistance of SEBRAE (Brazilian Micro and Small Business Support Service), APEX (Brazilian Agency for Promotion of Exports and Investments) and similar institutions.

Plínio Nastari pointed out that Brazil can look forward to strong growth in the agricultural sector, a forecast backed up by data from the United Nations Food and Agriculture Organization (FAO) and USDA (United States Department of Agriculture) showing that Brazil will account for 50% of global agricultural expansion in the coming years. Compared to China and the US, Brazil produces, and exports, more soybean than corn. Plinio went on to say that the decision of the US (and especially China) to grow more corn and import more soybean, owes much to the fact that larger amounts of water are needed to produce soybean. These two countries are actually importing water. Moreover, corn production in Brazil will greatly expand from 92 million to 150 million tons, in Maranhão, Tocantins, northern Mato Grosso, western Bahia and southern Piauí. Increased production will most likely occur in areas with degraded pastures and not necessarily in the native forest areas of the Amazon region.

How do we get there?

On the subject of emission factors, Eleneida Sotta talked about the work of the ABC Platform, which involves collecting all the data on what has already been developed. This makes it possible to identify bottlenecks and devote increased efforts and resources to researching the areas where emission factors have not yet been developed. The ABC Plan provides for the implementation of its goals in the following ways:

- Publicity campaigns;
- Training of technicians and rural producers;
- Technology transfer;
- Environmental regulation;
- Land legalization;
- Technical assistance and rural extension;
- Studies and planning;
- Research, development and innovation;
- Supply of inputs;
- Production of seeds and forest saplings;
- Rural Credit.

These actions provide the basis for overcoming weaknesses and encouraging alternative proposals for substituting or reorienting environmentally sustainable production aimed at enhancing levels of sustainable development. To achieve the objectives outlined in the ABC plan between 2011 and 2020, an estimated R$ 197 billion will be needed, financed from budgetary sources or borrowings. Of this total, an estimated R$ 157 billion would be resourced through rural credit mechanisms to finance the activities needed to achieve the physical goals of each program. Funds, to be provided from different sources such as BNDES and banks' own resources, will involve expenditure and equalization transfers, with a total estimated value of around R$ 33 billion, from the General Budget of the Union.

According to **Renato Rodrigues**, the ILPF Network Association will need to do the following in order to achieve its goals: promote and implement technology transfer projects and actions, promote R&D, and scale up communication and strategic approaches to disseminate the benefits of the ILPF systems. The Association will also need to focus on the possibility of capturing resources and executing projects. These actions are implemented with funds from members' annual subscriptions. "We currently have around 100 million hectares of degraded pastures and 35 million hectares producing grains. If we were to increase grain production on an additional 20 million hectares by using more sustainable technologies, it would be possible to at least double the production of meat, milk, timber and grains in Brazil without knocking down a single tree ".

Plinio Nastari added economic incentives are needed to protect land from deforestation and to promote more sustainable agriculture by rewarding owners who preserve and conserve the forest. This requires investing in research and advocating sustainable agricultural practices. RenovaBio is an example to follow. We must also consider the use of control and enforcement as important components in the fight against deforestation.

Land-Use Change and Forestry Sector

According to the 4th Edition of the Estimates of Greenhouse Gas Emissions in Brazil, the Land-Use Change and Forestry sector accounts for the largest amount of GHG emissions (24% of the total). However, much has been done to reduce emissions from deforestation.

Where are we?

Jair Schmitt, Director of the MMA Department of Forests and Combating Deforestation, said that Brazil plays a major role in anti-deforestation efforts: "Curbing GHG by reducing deforestation in the Amazon is the world's largest emissions reduction effort". The MMA is responsible for deforestation surveillance and prevention, and adherence to the guidelines established by the Action Plans for the Prevention and Control of Deforestation which applies to all the biomes in Brazil. The Action Plan for the Prevention and Control of Deforestation in the Amazon (PPCDAm), has succeeded in reducing the annual deforestation rate from 20,000 km² to the current level of around 6,000 - 7,000 km². 2016 witnessed a 59.3% reduction of deforestation compared to the average deforestation of 19,625 km² under the National Climate Change Policy in years 1996-2005.

Suely Mara Vaz Guimarães de Araújo, of the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), introduced the subject of conversion of penalties into environmental services. In view of the substantial number of unpaid fines, this is basically a way of using the conversion mechanism to obtain resources for environmental improvement. This discretionary approach enables violators to replace penalties in exchange for carrying out environmental preservation, improvement and recovery services. "This is a way to muster resources for the environment!".

Raimundo Deusdará, Director General of the MMA Brazilian Forest Service explained details of the Rural Environmental Registry (CAR), a national electronic public registry, mandatorily implemented for all rural properties. Its purpose is to collect environmental data on farms and other rural properties with particular focus on properties in Permanent Preservation Areas (APP), Legal Reserves (RL), restricted use areas, consolidated areas, and other areas containing remnants of forests and other types of native vegetation. The result of this effort has been the establishment of a database used for environmental/economic planning, surveillance, and monitoring fragile areas, as well as for combating deforestation.

Raoni Guerras Lucas Rajão, professor at the Federal University of Minas Gerais (UFMG), acknowledged the efforts of the MMA and other state agencies to ensure compliance with the agreements to control deforestation. In his view, although deforestation has declined in recent years, Brazil's NDC is nevertheless over ambitious given the country´s current political situation and the perennial difficulties encountered in halting illegal deforestation.

University of Brasília (UnB) researcher **Mercedes Bustamante**, referring to anti-deforestation actions, criticized the government for "focusing on deforestation prevention in the Amazon, while leaving the other biomes out of the picture… the Cerrado (tropical savanna) suffers high rates of deforestation and should play an important role in any discussions on climate change… but this key biome receives little attention in terms of public policies".

Where do we want to go?

In addition to the actions already implemented by the government to prevent and control deforestation, Brazil intends to: strengthen compliance with the Forest Code at the federal, state and municipal levels; reinforce policies and measures for achieving zero illegal deforestation by 2030 in the Brazilian Amazon, and offset GHG from legal vegetation clearing by 2030; restore and reforest 12 million hectares of forest by 2030 for multiple uses; and scale up sustainable native forests management with the use of dedicated georeferencing and traceability systems aimed at discouraging illegal and unsustainable practices.

According to **Suely Araújo**, converting fines into environmental services does not relieve debtors of the duty to repair the damages resulting from the violations that led to the imposition of penalties in the first place. The key objective remains that of reducing the number of defaults and augmenting financial resources for fostering environmental preservation and improvement services, and the recovery of environmental quality overall.

Raymond Deusdará drew attention to the fact that the Brazilian Forest Service is currently negotiating an agreement with the SICOR (Central Bank Credit System) to provide credit via the CAR scheme, which is expected to lead to rural properties being described in greater detail in the electronic database.

Raoni Rajão presented the three scenarios of the Mitigation Options project: increased deforestation in the "trends" scenario; the abandonment of national environmental policies in the more "catastrophic" scenario; and, in the "strong governance" scenario, the present goals remain in place.

How do we get there?

According to **Jair Schmitt**, achieving the goals involves using the Plans to address the main causes of deforestation, and carrying out actions to promote the sustainable use of natural resources by reconciling agricultural production activities with environmental protection. If these targets are met and widely disseminated, Brazil will attract more resources as a reward for Reducing Emissions from Deforestation and Forest Degradation (REDD +), and ensuring the maintenance and increase of carbon stocks. Jair added that improved monitoring of forest cover, investment in overseeing enforcement measures to combat deforestation, creation of Conservation Units, and more involvement by society and along the entire productive chain, have made the PPCDAm a success. "One of the main challenges is to demonstrate that the standing forest can be attractive economically". In other words, we must promote economic development while maintaining the biodiversity of the forest. To achieve this, a substantial obstacle must be overcome: how to ensure that the benefits resulting from forest maintenance can be enjoyed by all.

Suely Araújo explained that there are two ways of converting fines: "directly", with services rendered by the violator, and "indirectly" , in which the violator is responsible for quotas of larger projects pre-selected by public tendering calls coordinated by IBAMA. The direct method involves a 35% discount on the fine, while the indirect method carries a 60% discount - a larger waiver in view of the interest in prioritizing large projects. Fines conversion, is a permanent and novel way of harnessing resources for the benefit of the environment.

Raimundo Deusdará highlighted several components contributing to CAR's success: the registration process of rural properties was voluntary and straightforward based on a friendly approach to the agricultural productive sector, informal outreach, partnerships with a variety of agents, close liaison with state authorities, and feedback from public hearings. "These last two points have made CAR an instrument of territorial management".

Raoni Rajão pointed out that the monitoring of deforestation rates can certainly be carried out using the CAR rural environmental register, and emphasized the need to curb land-grabbing and

real estate speculation. "The government has an important role in maintaining the standing forest through the creation of new Conservation Units and strong action by IBAMA" .

Mercedes Bustamante voiced concern that "monitoring deforestation rates is not enough… we need policies that ensure that the standing forest will be maintained".

Transportation Sector

Emissions arising from burning fossil fuels in the transportation sector is reported in the stories as a subsector of the energy sector. According to the latest annual estimates (2015), the sector accounts for 15% of Brazil's GHG emissions, and 47% of all energy sector emissions.

Where are we?

Fábio Feldmann, sustainability consultant, was responsible for implementing the "Rodizio" Program (vehicle restrictions at peak times or rotating on alternate days) in the city of São Paulo from 1995 to 1998. This project came about as the result of worsening health quality in the city, particularly increased mortality rates among the elderly and children. The solution was to reduce vehicle movements within the city in order to cut down the amounts of atmospheric pollutants. This rotation system removed 20% of the total number of vehicles from the São Paulo Metropolitan Region. Despite the program's success in reducing congestion and improving air quality, Feldmann was never re-elected in the state due to popular resistance to the project. According to him, rude stickers proclaiming " Fabio Feldman's mother also does a Rodizio" appeared on many vehicles.

Henry Joseph Junior, Vice President of Anfavea, commented that PROCONVE (Program for the Control of Air Pollution by Automotive Vehicles) was created to reduce and control air pollution and noise produced by vehicles. A further program called the Incentive Program for Technological Innovation and Automotive Vehicle Productivity Chain (InovarAuto), aims to make the vehicle fleet more efficient and less polluting. As one of the world´s most effective GHG-reducing and efficiency-gaining programs, the InovarAuto program makes a crucial contribution to actions to reduce transport-related emissions.

Where do we want to go?

The Brazilian government's goal is to promote efficiency measures and improvements in the transportation infrastructure and public transportation in urban areas. In addition to participating in the 2030 Program aimed at meeting the Paris Agreement goal through actions to reduce GHG, the government´s goal is to establish the basis of an industrial policy for the automotive industry for the next 15 years, to promote the long term modernization of the transport sector and to set rules for tax exemptions. To benefit from tax breaks, vehicle manufacturers will need to commit to investing in R&D to produce safer and more efficient vehicles.

How do we get there?

According to **Feldmann**, the main challenge faced by the implementation of the Rodizio system was "the need to change people's behavior and to encourage them to find alternative means of transportation". Although this was not an easy process the population over time began to accept that the new behavior pattern was gradually improving congestion in the city. "The Rodizio project, although initially concerned with environmental quality, became consolidated as an instrument for reducing congestion in the city". However, the main obstacles to the project were: (i) people´s desire to own and drive cars; and (ii) the lack of good quality pubic transportation. "Generating behavior change involves taking into account not only health and safety, but also values and the power of symbols".

Henry Junior highlighted the need for vehicle fleet inspections and renewal. He said that there is no point of vehicles leaving the factory with low emission capacity and high efficiency if users fail to carry out appropriate inspection and maintenance. "It is necessary to bring together all the programs related to improving the vehicle fleet so that the auto industry can implement actions to make these goals a reality. The programs referred to by Henry Junior provide, in addition to increased energy efficiency, road safety mapping, vehicle labeling, fining mechanisms and the loss of a manufacturer's license in the event of non-compliance with the goals.

Industrial Sector

According to the 4th Edition of the Annual Estimates of Emissions of Greenhouse Gases in Brazil, the industrial sector is responsible for 7% of GHG emissions.

Where are we?

Fábio Cirilo, eco-efficiency consultant at Votorantim Cimentos (Brazil's largest producer of cement, with a presence in many overseas markets) highlighted the initiatives implemented and under test in the company's production processes. The cement industry accounts for approximately 5% of anthropogenic CO 2 emissions. These emissions occur mainly during the process of calcination and the use of fuels. Votorantim Cimentos is conducting a range of actions aimed at reducing GHG emissions.

According to **Luisa Guimarães Krettli**, manager of the New Business division of SUNEW, said that the track record of her company, which manufactures organic solar panels (OPV), demonstrates the commitment to help resolve major challenges in the energy sector faced by society. The company, a world leader in organic photovoltaic film, seeks primarily to lessen the environmental impact of GHG by generating clean energy with the use of its products and in its own manufacturing processes. SUNEW has an installed production capacity of 400.000 m² of OPV per year. The manufacturing method is continuous and highly scalable, utilizing non-toxic natural organic materials in a roll-to-roll printing process similar to that used in the textile industry. The production process involves low, energy-saving temperatures. "There is a lot of technology behind that panel. We have nanometer printing on this material, but it is as simple as printing a newspaper, a fabric or a photographic film. OPV panels have a smaller carbon footprint… everything is recycled, and the production process uses very little energy. "Sustainability is part of our DNA… there are five other OPV manufacturers in the world, but we are the largest".

Where do we want to go to?

According to **Fábio Cirilo**, cement companies at COP 21 committed to reducing 20-25% of their emissions by 2030. As the largest manufacturer of building materials in Brazil and one of the

world's largest cement companies, the company seeks to increase its operational efficiency, innovate and improve its reputation by adopting the most advanced emissions-reducing technologies, improve energy efficiency, ensure the health and safety of its workers, strive to achieve zero accident rates, reduce its environmental footprint, and promote local development of the communities where its plants are located.

Luísa Krettli added that her company seeks to use the product in large structures, buildings, gas stations and so on. "To do this, we needed to expand our industrial structure... that is why we became the world's largest OPV manufacturer… we are a 100% national company, using Brazilian technology. The goal is to have OPV spread everywhere over the next two years. This is an enormous challenge, and we are seeking partners who can help meet this challenge". According to her, today the company faces the dilemma of how to satisfy demand for the product at reasonable cost. "In common with any other innovation company, with high inputs of R & D investment, the product is initially expensive, but with increasing demand and economies of scale, prices will drop".

How do we get there?

Fábio Cirilo explained that 90% of the emissions in the cement industry arise from the production process. The went on to defend carbon pricing in Brazil, as is already the case in Spain and Canada, as a means to encourage the industry to make the transition to using cleaner carbon processes. "You can not escape this trend… carbon will be priced, and we see it as an investment variable. Investors are already looking at future carbon emissions and dependency on fossil fuels. The Dow Jones index alerts investors to companies with high carbon emissions and their prospects for generating future returns to shareholders". Among the projects implemented by Votorantim, Cirilo highlighted a co-processing initiative involving phasing out 10 oil-burning coke trucks, replaced in 2016 by other fuels, thus saving the equivalent of 213,000 tons of carbon. A recent initiative is the use of açaí stones in a processing plant located in the state of Pará. The stone is 80% of the açai fruit (only the pulp is consumed) and is ground up and used to replace 37% of the fossil fuel, thereby further reducing methane emissions. Another technological initiative involves substituting limestone (the raw material for cement), with clay. This has cut carbon emissions by 43% as well as the amount of energy needed for the manufacturing process. He also drew attention to a carbon capture pilot project in Canada, which although high-cost, is experimenting with algae as a biofuel to reduce the impact of carbon emissions. The actual process involves transferring the carbon from the furnace to a reactor with microalgae. This photosynthesizes and converts the carbon and sulfur dioxide into fuel, fertilizer or animal feed. "While the Canadian project is still a very expensive, we believe that the carbon pricing process could help make this kind of initiative viable".

According to **Luísa Krettli**, OPV can be incorporated in a variety of conventional building items such as facades, windows, skylights, tiles, weather protection devices, and so on. This new smart, sustainable building modality is energy-efficient, using surfaces for solar energy generation and the reduction of thermal load. The material also contributes to luminosity management and adds value to properties by incorporating interesting designs and attracting good scores in green certifications. The panels can be used in different urban structures, affording sustainability, good design and energy-saving to smart cities. Likewise, the material can be integrated into cars, semitrailers, trucks, buses and other vehicles to generate clean energy to improve performance and energy efficiency. The technology is the only one that can withstand the stresses and strains to which vehicles are subjected in real use situations. As well as reducing fuel costs, OPV can also be used to power auxiliary systems such as GPS, exhausts, and other electronic systems - even when a vehicle's engine is switched off.

Financing and means of implementation

The financial sector plays a key role in fostering the implementation of actions to combat climate change, acting as a driving force of change. While there is no regulatory framework for the sector, some financial entities are already taking initiatives in the climate area.

Where are we?

Carolina Learth, Sustainability Manager at Banco Santander, outlined the activities undertaken by the bank in Brazil and worldwide in the environmental and climate change areas, highlighting the key role of the financial sector. The Brazilian Federation of Banks (Febraban) currently convenes a group of around 25 financial institutions to discuss how climate change affects bank portfolios and society as a whole. She said that Santander began work on the topic soon after the regulated carbon market in Europe emerged. In Brazil, the bank has provided support to companies involved in selling carbon credits, and maintains portfolios in a number of related areas such as renewable energy, low carbon agriculture, forestry and energy efficiency.

The Caixa Econômica Federal representative, **Morenno de Macedo**, outlined CAIXA´s involvement in the climate change area; As a participant in Clean Development Mechanism (CDM) projects, this public bank currently provides loans to the ABC Plan and the energy and forest areas.

A representative of the Banco Pérola, **Barbara F . Dalla Costa**, said the bank, a nonprofit public interest civil society organization, provides loans to small businesses, micro-businesses and micro-entrepreneurs.

The COPPE research specialist, **Emilio Lèbre La Rovere**, questioned where we are going to get to if we continue where, and how, we are at present? He raised three scenarios contained in a study prepared by YesBrasil for the FBMC. In the trend scenario, we will not be able to meet the NDC targets for 2030 based on where we are at present. The 2020 and 2025 goals will only be met on the basis of past achievements, but Brazil's economic recession and political crisis have undermined city governance and seriously delayed the necessary changes that need to be made in the cities. Governance issues need improving if all the commitments are to be achieved.

The UFMG researcher, Aline Magalhães, commented on the importance of risk management in the economy, emphasizing the need for public policies based on economic instruments. The sector

most vulnerable to the effects of climate change is agriculture, given its dependence on temperature and rainfall. One hypothesis is that declining soil productivity due to climate change could probably lead to increased land use (i.e.deforestation) in order to maintain agricultural production levels.

Where do we want to go?

According to **Carolina Learth**, the Financial Stability Board, an international organization that monitors and makes recommendations on the global financial system, published a paper in 2016 describing how large companies deal with climate risks, governance, strategy and the publication of business outcomes related to climate change. This study gave rise to the formation of a UN Working Group comprising Brazilian and foreign banks. "We need to understand how climate change impacts on bank' portfolios. Santander is aware that the financial sector plays a key role in this discussion. Since money passes through the financial sector we need to assess how we can apply resources to help move society in one direction or another. Our view is that climate change is here to stay. It has everything to do with development, competitiveness and the kind of country and the world that we want to live in ".

Policies, measures and actions to achieve this NDC will be implemented without prejudice to the use of the Convention´s financial mechanism. Other cooperation and international support modalities will be used to strengthen NDC effectiveness and/or anticipate its implementation. While the implementation of Brazil's NDC is not conditional on international support, it is open to developed country support as a means of generating global benefits. Additional actions will require a large-scale increase of international support in terms of investment flows, development, employment, and technology transfer and diffusion. As for the forestry sector, the implementation and retention of REDD + activities and outcomes call for the continued provision of performance-related payments in an appropriate, predictable manner in accordance with the relevant decisions of the Conference of the Parties.

How do we get there?

The present challenge , according to **Carolina Learth**, is how to make the move from an economy still based on fossil energy sources to one in which renewable sources represent the largest part of the energy produced. "We have to be extremely careful. It is the responsibility of all of us to learn more about transition. We have to realize that at some moment we will need to actually disinvest. For the present we need to look at how much we have to back-peddle, and simultaneously where we should invest more resources to spur progress. We know that several oil and gas companies are repositioning themselves and moving towards renewables. This raises the question of whether to move more quickly or retrench" In order to make its choice, Banco Santander has mapped the activities that fit within the green economy concept. It has also assessed the vulnerability of its portfolios to climate change. With regard to climate risk, the bank has conducted this analysis using models containing five scenarios. Although the process is incipient within the bank, climate risk is a key driver for banks in general and must be taken into account by decision makers in view of the major impact that risk analysis has on the entire financing process.

Morenno de Macedo drew attention to the Caixa Econômica's partnership with the Getúlio Vargas Foundation (FGV) to create a methodology for measuring the resources that the financial system allocates to the green economy. From 2014, the total green economy portfolio reached R$ 400 million, representing 30% of the current corporate portfolio of R$ 1.5 trillion. The data show the efforts being made by banks to finance projects

that include emissions reduction, resource use efficiency and social inclusion. The CAIXA will soon be accredited to the Climate Fund.

According to **Bárbara Costa**, Banco Pérola bridges the gap between small entrepreneurs and potential investors through an FIDC (Investment Fund in Credit Rights) with shared guarantee obligations. As demand for loans increases in tandem with customers payment capacity, bigger loans are made available. It is important to note that Pérola is a credit association with social rather than financial aspirations.

Emílio La Rovere reported on the command and control instruments and economic instruments needed to achieve an inclusive low carbon society. He argued that resumption of economic growth involves prioritizing the main bottleneck: infrastructure financing and development. Financing instruments are vital for incorporating the climate dimension into a national development project. Brazil's abundant, low-cost renewable natural resources are capable of attracting infrastructure investment, as has been the case of wind energy. Credit guarantor funds could be used to attract more investment since they reduce potential risk and could possibly attract external capital to finance projects at low interest rates and with longer grace periods. The result of this would be to generate positive demand. "Fining people who emit and providing incentives for those who do not emit, is also a way to boost sustainable development". To do this, it is important to price a ton of CO2 eq. The Finance Ministry is examining this option. Mechanisms are, for example, already in place for taxing and selling emission quotas for certain sectors such as transport and agriculture. Command and control mechanisms are particularly important for the AFOLU (Agriculture Forestry and Land Use) sector. Progress has been made using robust, well defined economic instruments towards expanding the ABC Plan to the level of the Plan Safra. "We should prioritize shorter livestock fattening cycles in order to reduce emissions per animal, and to invest in all the mitigation measures of the ABC Plan". Moreover, it is vital to implement the mechanisms provided for in the Paris Agreement for scaling up projects to the programs/plans level, following the example of the Clean Development Mechanisms (CDM). The positive impacts of these actions include increased employment (renewable energies, as opposed to fossil fuels, generate more jobs), generation of skilled jobs, better income distribution (renewable energy generation in per capita low-income areas). All this encourages a virtuous economic development cycle. However, for this to occur, the instruments must be supported by political will and good governance (institutional effectiveness), including stronger regulatory agencies.

Public Policies

The story about Climate Change knowledge .

Gylvan Meira Filho, a professor at USP, outlined the history of knowledge about climate change. Discussions on the subject began in the United States in the late 1980's. These eventually resulted in the creation of the IPCC, responsible for climate change-related scientific issues and the compilation of globally produced scientific material on the topic. In recent years, research progress has made it possible to present more accurate future scenarios. Meanwhile, is important to study current climate events as effects of climate change in general, and to establish a timescale for the consequences. "We should do our part and penalize those who does not".

Clean Development Mechanism (CDM) projects were a great success in mitigating climate change.

José Domiguez Gonzales Miguez, Director of MMA Climate Change Policies and a UNFCCC member, emphasized that the use of flex-fuel cars and ethanol were responsible for part of the emission reductions. He highlighted the special importance of carbon credits within the CDM framework as helping to drive GHG emissions reduction in various sectors of the economy. Carbon credits, the key to sustainable development, job creation and quality of life improvements in regions where implemented, have also helped to substantially reduce the costs of GHG reduction implementing actions. CDM projects have led to significant reduction of greenhouse gases in Brazil and worldwide. The Director shared two stories related to his experience as climate change coordinator at the Ministry of Science, Technology and Innovation:

- The Gramacho Landfill (Rio de Janeiro): used to be home to large numbers of vultures on a nearby hillside. After flares had been installed to burn methane from the dump, the birds took advantage of the rising hot air to take flight;

- The Sadia Project: this CDM project was based on 1,500 pig farms. Prior to the project´s implementation, pig manure was disposed of in an uncovered pond. After installing biodigesters and covering the ponds, the burned methane provided energy for a large number of adjacent farms. "When I went to visit one of the farms in the rain the owner said that since the implementation of the CDM project he was much less worried about rainy days. He was also able to avoid fines levied by the environmental agency because the pond covers prevented waste from entering the river".

Climate Change and Health

Sandra de Souza Hacon, researcher at the Oswaldo Cruz Foundation (FioCruz), commented that the health area is linked to different sectors of the economy. "Air pollution in the cities impacts on the population's health and quality of life. Increased pollution leads to large numbers of patients with pulmonary diseases. These are a major burden on the Unified Health System (SUS) and generate increased costs for the government. Climate change also exacerbates the impacts of the lack of basic sanitation, which leads to increased disease, particularly related to vectors which transmit tropical diseases such as malaria and dengue, and others. "Health questions must be included in discussions on climate-related actions"

Many Brazilian states and municipalities have strong climate change agendas.

Where are we?

Frederick Rudorff, the manager of monitoring and early warning systems of the State of Santa Catarina Civil Defense Department (SDC-SC), mentioned projects for dealing with major climaterelated disasters in the state. Santa Catarina created a technical/scientific group in 2008 to investigate procedures and actions that could minimize the impact of extreme climatic events which had over the years caused many deaths, major infrastructure damage, paralyzed ports, etc. The State´s risk management had improved in recent years. In 2011, the State, together with the Japan International Cooperation Agency (JICA), announced the joint implementation of a major disaster mitigation project (one of the largest in Brazil).

Pedro Ivo Mioni Camarinha, Researcher at the General Coordination of Operations and Modeling (CGOM) of the National Center for Monitoring and Early Warning of Natural Disasters (CEMADEN) said "The subject of disasters covers many different sectors and it is difficult to measure causality".

The challenge is how to link climate change to natural disasters? To answer this question, the Center mapped the distribution of disasters in the country and sought to identify causal factors by

creating models to match vulnerabilities with socioeconomic and environmental variables (i.e. a "disaster map"). Indices were first created for floods and landslides, and subsequently for droughts (jointly with the MMA and WWF). These indicators served as the basis for the National Adaptation Plan (PNA). "With a better understanding of the impacts and the causal relationships between climate, environment and society, we can think about adaptation actions… many disasters are not caused by extreme events, but by economic circumstances that force people to live in risk areas where meteorological events can trigger disasters, as happens in the city of Salvador…different adaptation strategies can be created with the use of indicators".

Paulo Henrique Pereira, Environment Secretary of the Municipality of Extrema, Minas Gerais, presented his municipality´s water conservation project. This project involves conducting a planimetric survey of each property and drawing up virtual plans of rural properties to indicate the current situation and outline proposed goals. The Environment Department is responsible for designing these projects, defining the actions to be taken and the targets to be achieved (depending on property characteristics). Farmers who provide some environmental service on their properties are recompensed (the first law in Brazil to allow this). The project, which has been running for 12 years, currently covers more than 7,000 properties and ensures water supply for the region´s inhabitants. It has also attracted a number of different firms to the region. In the course of implementation over 1.3 million trees have been planted, which have helped to conserve thousands of hectares of land and produce billions of liters of water.

Bruna Cerqueira, Institutional Relations Manager of the International Council for Local Environmental Initiatives (ICLEI), highlighted the work of ICLEI to implement the climate change agenda in support of the municipalities. ICLEI is the world's leading association of cities and local governments dedicated to sustainable development. It is a powerful movement, covering 12 "megacities", 100 "super-cities", 450 large cities and urban regions, in addition to 450 small and medium-sized cities in 83 countries. ICLEI promotes local action for global sustainability, encouraging cities to become sustainable, resilient, resource-efficient, biodiverse, and low carbon. Other goals are to promote smart infrastructure and develop a green, inclusive urban economy with the end-goal of producing happy, healthy communities. As for the actions taken under the Mayors´ Agreement on climate change in Brazil, of the 76 participating municipalities, 42 now report their actions, 28 have initiated inventories, 14 have set targets, 11 have assessed their vulnerability, and, finally, 16 have produced action plans. "This shows the willingness and desire of Brazilian municipalities to put climate change on their agendas".

The representative of the Recife City Hall (Prefecture), **Carlos Maurício Fonseca Guerra**, talked about Brazil's current focus on active networks that mobilize highly diverse sectors and bring different organizations together. "This spirit of liaison and networking has greatly helped to set the agenda of local and other governments, and society, regarding climate change". This robust institutional movement could be improved by further consolidation policies and by expanding the urban policy agenda to include climate change topics many cities already do this). There is an urgent need to increase funding for the necessary actions to be carried out.

Naziano Pantoja Filizola Junior, researcher in the Department of Geosciences (Undergraduate and Graduate) of the Federal University of Amazonas (UFAM), described how hydrosystems affect the lives of people living in the Amazon region. He drew attention to the disorderly activities of illegal mining and agricultural activities which contributed to rivers silting up and directly affecting the riverine population. "This population used to eat fish and bought their food from riverboats. Now they have to buy sausage and pasta at the roadside, and they have developed diseases that were previously unknown to them". The Amazonian population possess scant resilience to climate change since the population is unable to keep abreast of the rapid changes affecting the region's water resources. "Knowledge has always been passed from father to son, but now many people are leaving their homes in the interior and making their way to the outskirts of

the larger Amazon cities". Moreover, the National Water Resources Plan makes no distinction between the different actors (fisherman, farmer, industrial, indigenous peoples) living and working in the Amazon basin.

Where do we want to go?

Frederico Rudorff said that the state of Santa Catarina's Risk Management and Disaster Center coordinates the disaster prevention and mitigation actions of several different agencies. The Center's main goal is to reduce vulnerability to natural disasters caused by climate change.

According to **Paulo Pereira**, the Extrema project seeks to increase forest cover in hydrographic sub-basins, implant ecological micro-corridors, reduce the levels of diffuse pollution in rural areas due to sedimentation, eutrophication, and the lack of environmental sanitation, disseminate the concept of comprehensive vegetation, encourage soil and water management in the Jaguari River basin, and finally ensure the socioeconomic and environmental sustainability of forest management practices already implemented, through the provision of financial incentives to rural landowners. The Extrema Prefecture provides incentives for the latter to improve and preserve existing springs. Good practices to improve water supply and quality must be encouraged and rewarded.

Bruna Cerqueira said that legislation has progressed exponentially but that little progress has been made in policy implementation. Even less progress had been made in monitoring and measuring the various actions. Five development approaches were called for: nature-based, low carbon, and resilient; equitable and people-centered; transversely integrated under good governance; science-based policies; and access to financing to ensure implementation. Bruna went on to emphasize that this comprehensive approach must be incorporated into the plans already prepared by the municipalities. A substantial challenges is how to monitor actions? How to integrate development approaches with appropriate monitoring tools with monitoring tools? How to bring together all the commitments assumed by Brazil?

Maurício Guerra highlighted the importance of including biodiversity on the urban agenda. Some municipalities already do this e.g. Campinas, Belo Horizonte and Curitiba. Meanwhile, others such as Salvador and Rio de Janeiro, have projects to improve cities' capacities for resilience. Challenges include the important question of tree planting in the context of adaptation, and how to encourage cities to have a minimum framework approach to climate change (inventory and climate change plans). Guerra went on to mention some initiatives benefiting the energy sector such as the use of LEDs for public lighting, photovoltaic generation, and the first trials for electric public transport. He cited the example of Recife, which has made progress in preparing public policies on climate change, for incorporation into city planning.

How do we get there?

Frederico Rudorff commented that Santa Catarina invested in monitoring and risk management, encouraging coordination between the different spheres of government and forging partnerships with sectors such as civil society, academia and international agencies. This approach aimed at improving risk management, disaster prevention and territorial planning, as ~~w~~ell as budgetary and financial planning. Efforts have been made to improve the region's infrastructure, including the construction and expansion of dams and levees, better river management and the creation of early warning systems and meteorological radars. There remained an ongoing need to evaluate the probable frequency, impacts, and costs of natural disasters (forest fires, heavy rainfall, heatwaves etc.) caused by climate change.

Pedro Camarinha said that it was important to establish how this causal relationship happens, and to identify vulnerability hotspots, as a prelude to working up viable adaptation measures. It is necessary to look first at the macro scale of events and to make sure that the relevant data is dispatched to decision makers. "People should be trained to identify simply what is happening and in this way to engage with the adaptation process". A major challenge is how to ensure that the municipal indicators are submitted to the federal level, and how to integrate adaptation agendas with others in specific territories in terms of risk and disaster reduction and sustainable development. "It matters little what title is given to a particular action. What is important is to reduce the impacts of climate change and improve the resilience of society and the environment".

According to **Paulo Pereira**, the entire process is made easier at the local municipal level by ensuring that government plans are transformed into local public policies. "With the use of environmental services payments (PSA), it has been possible to inform farmers about the process and ensure that rural properties conform to environmental standards". Pereira went on to say that "municipal taxes are used to cut the municipality´s emissions, and selling carbon credits releases resources for the municipality while helping to attract new businesses to the region. The project also involves protecting springs with funds provided by industrial concerns ("paying users") through the creation of economic arrangements to finance different project areas. Meanwhile, the municipality uses part of the taxes collected such as the tax on urban property and land (IPTU), the tax on motor vehicles IPVA) and the Tax on Services (ISS), to help reduce vehicle emissions, and those from homes and commercial properties in the area. In addition to creating public policies to reduce emissions within the municipality, we believe that it is necessary to include these initiatives as an integral part of the environmental licensing process. A major challenge is the need for a public policy to further implement and scale up these actions.

For **Bruna Cerqueira** it is important to integrate municipal and state actions with those of the federal government to ensure a systemic and comprehensive view of policy development. Ways have to be found to scale up local development and endorse the important role of local governments. "The climate change question has advanced at the local level, and has spurred interest among the mayors, but the municipalities continue to need support in the process, especially regarding the question of adaptation".

Maurício Guerra said "The federal climate change agenda needs to involve the states and cities more ". To do this, the direct participation of other federative units is needed, and the entire process should be more dynamic. The creation of the climate change law is important for guiding actions and incorporating them into other urban policies. Furthermore, City Master Plans need to be revised to include climate change questions. "Cities with low carbon development are more resilient and inclusive". The major challenge is to ensure that planning bodies work alongside the implementing agencies.

Naziano Junior argued that it was important to ensure that data on public policies was accessible to members of the public. This would give people the opportunity to make their views known. The region suffers numerous environmental and other problems. These include extreme climatic events such as heavy flooding in the rivers, causing overloading of dams, silting up of hydroelectric dam machinery, abandoned dam construction projects, an exodus of the population from the interior to the outskirts of larger cities of the region, the use of conservation area resources for building hydroelectric installations, cross-border problems, lack of frontier security, etc. A further problem is that rivers from other countries deposit sediment in Brazil's waterways: "it is important to discuss with these countries how they intend to manage their water resources". Illegal mining in Sierra Pelada in Peru has increased the sediment load in tributaries of our Rio Madeira. Other issues include increased crime among riverine communities in the absence of state authorities. Indigenous peoples have for example been co-opted into drug trafficking, and the Javari River is now used as a drug conduit. "Brazil needs to reconnect and somehow ensure that macro policies reach all the way to the periphery". Siltation of the rivers greatly hinders school transport (by boat), and there is a need for a "hydrologically synchronized" school schedule to suit the circumstances of the region. As for health, erratic water levels in the rivers are a major cause of malaria (e.g. involving a 2-month time lag for the disease to appear). It is clear that malaria prevention and control programs should be coordinated with the variable river levels, and vaccination campaigns need to be arranged for suitable periods within the flood cycle. This and other public policy modeling outcomes need to be Incorporated into the various procedures. "Afterall, it is the river that dominates life in the Amazon".

Actions by Society

Where are we?

Geodinio and daughter Deyziane, representatives of the Canindé de São Francisco (Sergipe) community settlement, spoke about how farming in the settlements, especially in the hinterland, is suffering from low productivity and inappropriate practices that negatively impact the environment. This segment of the population is extremely vulnerable to climate change. Their community had been suffering from the substantial drop in production due to drought and groundwater contamination.

Paulo Adário, Greenpeace representative and coordinator of the Soy Moratorium (SoyM), pointed out that the organization is an example of consensus and the only alternative to ensure that the Dialogues work. SoyM is an environmental agreement involving representative bodies of soybean producers in Brazil, NGOs and government. Its main goal is to press for measures to halt deforestation in the Amazon, including halting the activities of firms responsible for purchasing soybeans grown in deforested areas. When it was discovered that McDonald's was a main purchaser, the Soy Moratorium pressured this and other companies to desist from buying products made from soybeans originating from Amazonian deforested areas. An appropriate agreement was subsequently made between producers, soyabean-purchasing companies, NGOs and social movements. "This is how the Soy Moratorium came about… but regardless of the ~~dra~~matic fall in deforestation levels, soybean production has continued to grow sharply".

Alice A~~m~~orim, Program Coordinator for the Climate and Society Institute (ICS), said "My message is hopefully to inspire… although the scenario is difficult and dramatic, there are a lot of good things ~~h~~appening out there. I want to relate two Brazilian stories that occurred recently, and continue to occur". ICS aims to foster and capture resources by connecting people, knowledge

and funds. Our interest is to engage stakeholders outside of the climate bubble and to introduce this agenda in a city context.

Ilan Cuperstein, an advisor to C40 Cities, spoke about the actions undertaken by this NGO. The C40 Network was created in 2005. He went on to say that currently 70% of global emissions originate from urban centers, although theses occupy a mere 2% of the world's territory. Although part of the problem, urban centers also represent part of the solution, given that they are the central cores for innovation and institutions involved with important climate-related subjects such as sustainability. Statistics reveal that 98% of the cities in the C40 network claim that they are already experiencing the impacts of climate change. Therefore the solutions also depend on action by the cities. The organization has 96 participating cities around the world. The C40's 16 thematic networks act as a catalyst for newer, improved, faster actions on climate change by helping cities learn from one another.

According to **Joaquim Belo**, president of the National Council of Extractive Populations (CNS), the common use conservation units implemented to date by the National Institute of Colonization and Agrarian Reform (INCRA) do not involve forest peoples. "The use of common use conservation units was mainly a matter of survival". The Extractivist Reserve model arose from the need to regard forest peoples from a different angle, and to ensure that these peoples continue to earn their livelihoods in accordance with their own cultures. As a result, common use conservation units currently occupy 13% of the Amazonian territory. However, many areas (such as those in the watersheds) have not yet been designated as common use conservation units.

Carlos Rittl, Executive Secretary of the Climate Observatory, presented a brief summary of the work of the Observatory. This organization proposes a level of commitment to the Brazil NDC of a maximum below the 2°C limit, amounting to 1 billion tons of emissions by 2030. He emphasized that to reach the 2030 target, the 2ºC target should also be firmly adhered to. He recalled that, although the goal stipulated by Brazil is more ambitious than that agreed by many countries, "we can and must do more … it is important to involve society in discussions on climate change to ensure that implementation of the commitment can be achieved through agreement by all and is not restricted to the government". The NDC is an opportunity to build a more sustainable development pathway. It must represent the country as a whole…as a collaborative decision by government and all of Brazilian society. The challenge is to transform the NDC into a long-term development-based agenda and to ensure that the guidelines on climate policies are aligned with fiscal, economic, energy, and forestry policies, and so on.

WWF's Global Climate Policy Manager **Fernanda Carvalho**, said the Talanoa Dialogue was proposed by Fiji at a time when countries were being called upon to demonstrate compliance with the Paris Agreement. The Dialogue involves mutual respect. The forest theme had been treated in a national and international context, and Brazil has great results to report internationally (e.g. reduced deforestation, expansion of the number of Conservation Units, etc.). Carvalho also pointed out that the CAR electronic data collection process was a great tool but not yet mandatory. "Quicker progress is needed in renewable energy and urban transport".

According to **Alfredo Sirkis**, Executive Coordinator of the Brazilian Climate Change Forum (FBMC), said that the "modest" goal of the Paris Accord may not be achieved. "Mitigation actions should not only involve "decarbonizing" but should also make sense from an economic point of view."

Where do we want to go?

Paulo Adario said that he had traveled far to secure his objectives. In order to attract people's attention to companies buying soya bean from deforested areas in the Amazon, he admitted that: "I dressed up as a chicken and chained myself to the door of McDonalds in Berlin".

Alice Amorim said that the ICS intends to promote a fairer, more prosperous development model and a low carbon economy. Two ICS projects were of particular note:

- Decarbonization of Public Transportation in São Paulo: the municipality was aiming to achieve a progressive reduction of 10% of fossil fuels in the public transport sector by 2018 "using renewable non-fossil fuels for all the buses in the municipality". The Institute intended to press for achievement of this goal by endorsing a realistic policy that could be implemented on the basis of credibility, technical expertise, ambition, penalties for non-compliance, legal certainty/ predictability and social participation. What was actually achieved was a 50% reduction over 10 years, zero emissions over 20 years and the publishing of targets in official tendering notices. This was only possible due to intense social and media mobilization, resilience, political support, coalition building and sharing technical knowledge in different areas;

- Faith in the climate: spokespeople, however dedicated and technically competent, are failing to sufficiently mobilize people, and get across the climate change message to the wider population. We need to find other influencers for this task. Although this problem differs from the above mentioned (public transport) the solutions for achieving the results (i.e. how to get there?) are the same.

Ian Cuperstein, advisor to the NGO C40 Cities, mentioned the recent C40 report on the growing impacts of climate change in urban areas, especially in large urban agglomerations in the southern hemisphere . "We need to take immediate, urgent action because the people who will suffer most from the impacts of climate change are also those who currently need support and action". Mayors of megacities, including innovative cities (those that do not fit the UN's description of a mega-city but which nevertheless demonstrate ambition and innovation regarding climate policies) have come together to find solutions. "There are various interesting and successful examples from cities around the world that have joined forces at the municipal level and exchange information to learn from each other and achieve better results". Convinced that cities can play a key role in tackling climate change, the C40 thematic networks seek to address a range of related topics such as energy and, buildings, transportation and urban planning, food, water and waste, and air quality.

According to **Joaquim Belo** , river basin areas are important sources of water for forest dwellers but are extremely vulnerable due to intensive formal and informal (garimpo) mining activities. "Challenges include overcoming the failure of public policies and government bodies to engage with the needs of these peoples".

How do we get there?

Geodínio stressed the importance of the settlement community partnerships with various institutions (IBAMA, INCRA, the Sergipe State Environment Administration of Environment (ADEMA), the Piauí State Water Resources Secretariat (SEMAR), the MMA, UNDP, and the Global Environment Facility (GEF) to promote more sustainable agricultural production, regarded as vital for improving the communities´ quality of life. A number of actions are being taken to reduce the vulnerability to climate change: environmental education (e.g. reducing chemical inputs in agriculture), use of cisterns, eco-stoves, reforestation, better sustainable management, dams construction in areas with heavy silting. Deiziane added that the actions were already producing results such as the appearance of new springs. "Environmental education projects are important for retaining young people in agriculture and farming in a more sustainable way". The projects were essential for ensuring the use of more sustainable methods in the

settlements and encouraging greater interaction between settlers, especially among the young. The use of ecological stoves and cisterns saved money and guaranteed water security. The projects also helped to expose settlers to a healthier diet.

Alice Amorim said "We have a very urban agenda in Brazil. Although most greenhouse gas emissions in Brazil come from deforestation, we need to turn our attention more to the situation in the cities, focusing primarily on civil society, academic organizations and the business sector". Ian Cuperstein added: "Access to finance is crucial for cities. The system as a whole is still highly focused on the states, which negotiate and access finance from international development banks. At the Global Climate Action Summit in San Francisco around a month ago, 72 cities of the C40 Network committed to carbon reduction. Other cities indicated that they would seek collaboration with other partners. Many intend to introduce fleets of electric-powered buses by 2030". In the opinion of C40, achievement of 2030 targets requires decarbonization of the transport network, optimization of energy efficiency in buildings, improved "next generation" mobility, land use and waste management.

Joaquim Belo again highlighted the failure of governments and public policies to engage with the needs of this population. There was, he said, a particular need to introduce development policies, especially public policies to retain young people in forest activities. He went on to call attention to the populations security fears and the permanent threat presented by illegal logging activities.

Alfredo Sirkis said that the Forum advised decision-makers to prioritize funding actions which take into account market mechanisms and tax. CDM was an important market mechanism. The exercise carried out by the Getúlio Vargas Foundation (FGV) and the Business Climate Platform (EPC) might serve as an example: the companies on the EPCl negotiate the sale and purchase of carbon credits in line with the cap-and-trade system, declaring their greenhouse gas emissions data pursuant to the Brazilian GHG Protocol Program. Sirkis also mentioned the possibility of using loan guarantee funds to raise finance for decarbonisation projects.

Indigenous peoples

Where are we?

The Articulation of the Indigenous Peoples of Brazil (APIB) is the national coordinating organization of the indigenous movement in Brazil. Its purpose is to:

- strengthen unity among indigenous peoples by enhancing contact between the country's indigenous organizations in the different regions;
- amalgamate the struggles of indigenous peoples, support their claims and demands, and uphold the indigenous movement´s political agenda;
- mobilize the country's indigenous peoples and organizations against threats and attacks on indigenous rights.
- APIB was created by the 2005 Free Land Camp (ATL), the annual national mobilization that has taken place since 2004 aimed at bringing Indian rights to the forefront, and for pressuring the Brazilian government to respond to the demands and claims of the country's indigenous peoples.
- Goals

- To mobilize public protests by indigenous groups and ensure permanent interaction between Indigenous Movement activists at national and regional levels ;

- Formulate and implement a Training Program for indigenous leaders and organizations ;

- Evaluate and engage with the preparation and implementation of targeted Public Policies to benefit indigenous peoples, in different areas of interest: health, education, land, environment, legislation, sustainability, human rights, participation and social control;

- Develop an Information and Communication Program to explain the reality of indigenous rights to the State, national and international public opinion and to members of the indigenous movement itself;

- Forge and strengthen alliances with the international indigenous movement and other social movements, and build partnerships with solidarity networks and institutions focused on social causes, especially those relevant to indigenous peoples;

- Ensure that the implementation of the APIB Action Plan is supported by an appropriate institutional and organizational infrastructure, including the necessary political and technical staff.

The National Policy for the Territorial and Environmental Management of Indigenous Lands (PNGATI) seeks to ensure and promote the protection, recovery, conservation and sustainable use of natural resources in indigenous lands and territories. The policy also guarantees the integrity of indigenous property and seeks to improve the quality of life and afford full conditions for the physical and cultural reproduction of current and future generations of indigenous peoples, respecting their socio-cultural autonomy in accordance with current legislation.

According to **Alberto Terena** of the Terena Council, and Executive Coordinator of APIB, "every indigenous person has a history of overcoming obstacles and seeking better quality of life. It would appear that nowadays it is more difficult to visit neighboring peoples because roads, fences and so on are obstacles to our habits and customs". The Terena Council is responsible for encouraging discussion of indigenous issues, such as the need for improvements in the villages and in the urban setting of the Terena of Mato Grosso do Sul. He went on to say that the remaining indigenous lands are degraded, without springs or trees, while better land is taken over by the private sector. Deforestation takes place even in preservation areas.

Sonia Guajajara from APIB complained that "Nobody ever gave one centimeter of land to us. We will always protest to get this right (to our land) respected ".

Sinéia do Vale, Environmental Manager of the Indigenous Council of Roraima, emphasized that indigenous peoples were important for maintaining the forest. He added that indigenous peoples were already suffering the impact of climate change which affected their customs and traditions.

Ethnic group representative **MT** added that combining traditional and academic knowledge can help defend the rights of indigenous peoples who "work in and care for the environment in which we live". It is vital to "convert words into actions!" Community activists, settlers and riverine dwellers, together with the Rede Juruena Vivo, have experienced the benefits of the solidarity economy (e.g. from beekeeping activities) and have succeeded in generating income without degrading the environment. Young people are important defenders of indigenous rights.

The representative of the Curator Council of the Xingu Seed Network Association, **Oreme Ikpeng**, explained that the Association is a network devoted to exchanging and acquiring the seeds of trees and other plants native to the Xingu, Araguaia and Teles Pires regions. Over the last 10

years more than 5,000 hectares of degraded areas in the Xingu and Araguaia River basin and other regions of the Cerrado and Amazon have been recovered in this way. For example, 196 tons of seeds of more than 220 native species were used to help recover areas around the headwaters of the Xingu. The seeds, collected mainly by indigenous women, have generated an income of R$ 4.2 million for 600 collectors, transferred directly to the communities. The collecting groups also include family farmers and nursery workers of indigenous stock. Planting involves predominantly the use of the *muvuca* technique which involves planting several species of forest and agricultural seeds together.

The network intends to supply appropriate seeds in the quantities and of the quality demanded by the market, to create a platform for the exchange and marketing of seeds, and thus to generate income for family farmers and indigenous communities, as well as to serve as a channel of communication and exchange between seed collectors, nursery workers, NGOs, rural landowners and others interested in gathering knowledge about the forest, the savanna and the various cultures existing there. The network basically seeks to create spaces for dialogue based on visits, workshops, meetings, regional get-togethers, and periodic publications disseminating information about work in progress. The aim is to encourage discussion about the localization, flowering and fruiting seasons of the various species, and of the collection, processing, storage, germination, dormancy of seeds, as well as to provide opportunities to explain planting techniques and plantation development. The main challenge is to encourage people to stand on their own two feet rather than continuing to rely on this project.

The Bacaeri and Morovi

The representative of Bakiri and Morovi ethnic groups (also representing SINC) was enthusiastic about activities such as ecoturism and ethnoecological tourism to generate income and address climate change. "If climate change is a global problem, we will globalize our environmental importance", by creating a communication strategy to publicize and externalize the positive efforts of indigenous peoples to maintain standing forests.

The Tempé of Pará

According to the **representative of the Tempé group** in the State of Pará, 70% of their land is degraded and the indigenous population is engaged in a constant struggle to restore the area and achieve land demarcation, e.g. the removal after 40 years of a fazenda occupying indigenous territory. This and other achievements were partly due to PENGAT support, but help is still needed to reinforce and implement such efforts.

Where do we want to go?

For **Alberto Terena** and **Sinéia do Vale**, indigenous peoples must seek and fight for their rights. In Alberto's words "Let's defend every centimeter of our land "..

How do we get there?

Alberto Terena spoke of the need to preserve the forest, rivers and springs. Serious policies are important for understanding the differences and special characteristics of the forest peoples.

Sonia Guajajara added that in order to implement the NDC it is necessary to demarcate indigenous lands, implement PNEGATI and highlight the need to bring all the indigenous claims to international attention. There is a particular need to create comprehensive joint strategies to emphasize the important role played by indigenous lands and peoples and to show how they both contribute to mitigating climate change.

In **Sinéia do Vale´s** words, "First we need to focus on our land and guarantee the right to land belonging to the indigenous peoples who have had their rights constantly violated… It is necessary to listen to the people, to know what they want and what they need, so that appropriate policies can be formulated". In this respect demarcation is very important: "Strength through information!"

The **Tempé representative** reiterated that 70% of Tempé land is degraded. The struggle to restore the area and pressure for territorial demarcation continues. He recalled that an area where a dam had been constructed had been recovered after a struggle lasting 40 years. While this achievement was partly due to PENGATI (supported by an NGO) there was still a need to take land recovery policies forward. The Tempé people were suffering the consequences of climate change: disturbed rainfall cycle, reduced supply of fish, and so on.

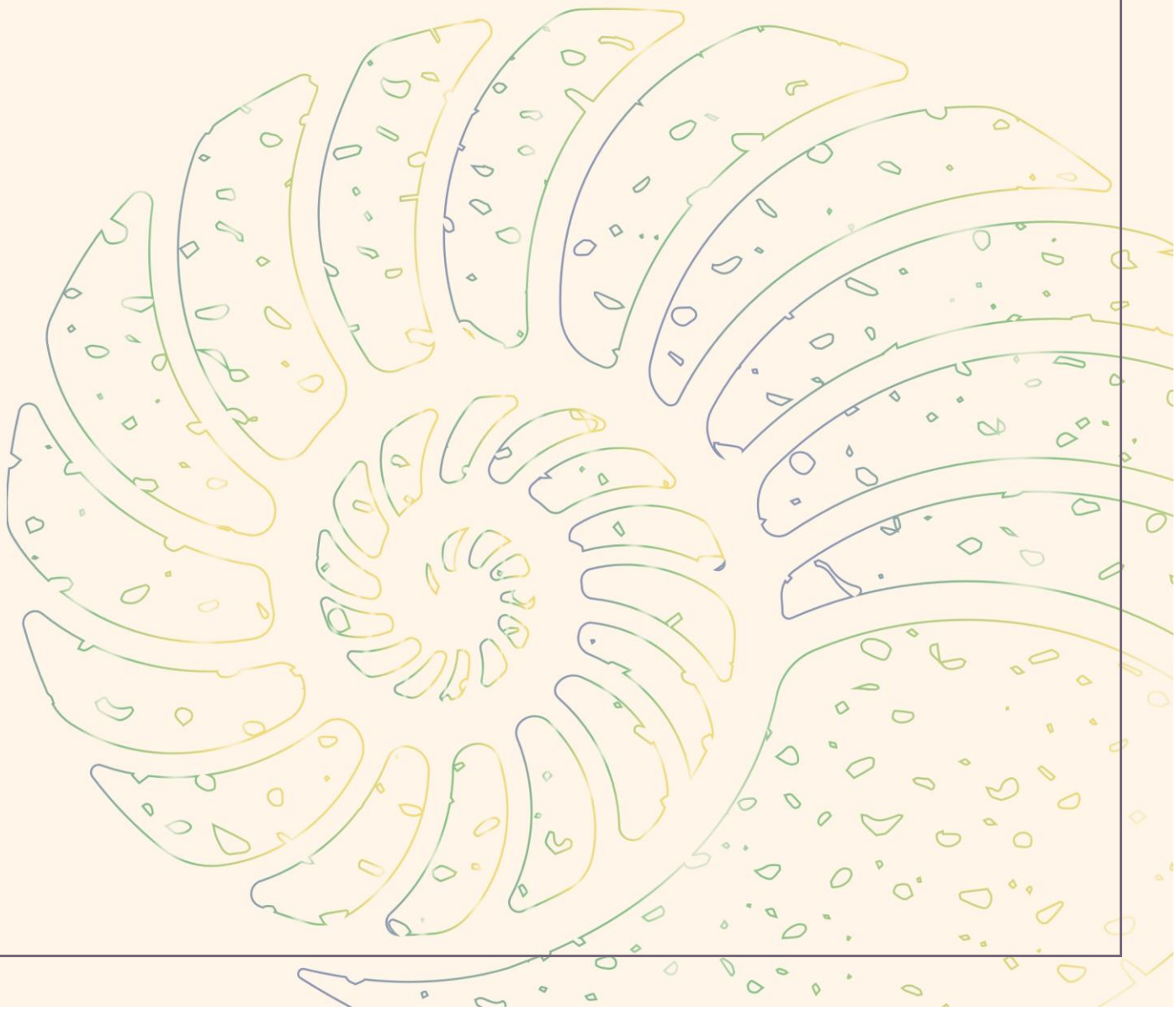
Points for consideration

Many of the questions raised during the Talanoas held in Brazil apply to all sectors of society and different sectors of the economy:

- Lack of governance in the climate change area reflects and engenders various other institutional problems such as the failure to incorporate questions linked to climate change in the development and planning agenda..
- Research investment in all sectors.
- Risk reduction and monitoring investment.
- Need to maintain a comprehensive view of natural resources management due to the total interdependence of natural renewable resources.
- Engagement of society is extremely important for inducing a high level of mobilization to ensure that agreed goals are met.
- Need to define means for implementing public policies so that agreed goals are met.
- Use of command and control tools and economic instruments to achieve an inclusive and low carbon society.
- Need for carbon pricing to penalize emitters and reward non-emitters provides a way of prioritizing sustainable development and assessing carbon exposure. The carbon footprint and dependence on fossil fuels are already variables being analyzed by investors. These variables can assist the transition process of industrial plants, given the prospect of reduced investment costs.
- Financing instruments are essential for incorporating the climate question into a national

development project.

- The Clean Development Mechanism (CDM) is an example of how to implement the mechanisms provided for in the Paris Agreement for transforming projects into programs and plans.
- The importance of generating compliance by society, not just government, to bring about changes in consumption patterns.
- Need to review the country's climate governance and improve the alignment of sectoral plans.
- Given the need for external financing to achieve and broaden the targets, new financial mechanisms are needed in addition to those provided for in the UNFCCC.
- Risk management in the economic sphere.
- Creation of public policies based on economic instruments.
- The need to combine the ILPF and degraded pasture recovery technologies into a single goal for the agricultural sector, and thus avoid double counting (ILPF is the best way to recover degraded pastures).



TALANOA BRAZIL DIALOGUES

Support

On behalf of

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

of the Federal Republic of Germany

Implemented by:

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

Sponsorship

NDC Support Facility

Realization

MINISTRY OF FOREIGN AFFAIRS

MINISTRY OF THE ENVIRONMENT

BRASIL GOVERNO FEDERAL

The Presidencies have launched the Talanoa Call for Action at COP 24.

Talanoa Call for Action

By the Presidents of COP 23 and COP 24

In the Pacific tradition of Talanoa, the world came together this past year to share experiences and help make wise decisions to inspire a global response to the threat of a changing climate. *People shared stories of the widespread devastation already inflicted on our communities by climate change, and the increasing risks for human and food security. They also shared stories of ambitious action already being taken all over the world in response to these threats.*

Climate action is on the rise, but not at the speed and scale we need. *Actors in all countries, including Parties and non-Party stakeholders at the national, regional and community levels are already taking action. Pre-2020 action is vital for putting the world on a path towards achieving the long-term goals of the Paris Agreement. But it is not only governments that must act. Non-Party stakeholders can and should join in pre-2020 action and complement action by states.*

According to the science, global emissions continue to rise*. This leaves a significant gap in the effort needed to limit global warming to well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius. The IPCC Special Report on 1.5 degrees highlights, among other things, the benefits of holding warming to below 1.5 degrees. It also concludes that to keep global warming within 1.5 degrees, global emissions need to be halved by 2030. And according to the Paris Agreement, in the second half of the century, we aim to achieve net-zero emissions, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.*

The window for action is closing fast – we need to do more and we need to do it now. *We may have already caused warming of 1 degree Celsius and we can no longer push significant and effective action further down the road. Existing possibilities to limit global warming must now be matched with the necessary will and engagement of all levels of government and society.*

The key messages emerging from the Talanoa Dialogue and synthesis report can show the way forward. *They can inform Parties' Nationally Determined Contributions by 2020, as well as their participation in the 2019 Secretary-General's Climate Summit, the High-level Political Forum on Sustainable Development and other important processes.*

We must fulfil the goals of the Paris Agreement.

- We saw overwhelming support for the Paris Agreement and its goals. We agreed to hold temperature rise well below 2 degrees Celsius and to pursue efforts to limit it to 1.5 degrees.

We must achieve a just transformation towards a better world.

- We celebrate a vision – shared by many – of a better world. A world with universal access to sustainable and affordable energy sources, emissions-neutral infrastructure and buildings, zeroemission transport systems, energy efficient industries, and the elimination of waste by reducing, recycling or reusing all materials. A world of productive and efficient carbon reservoirs and sinks. A world of clean air, climate-resilient food production; healthy lands, forests and oceans; an end to ecosystem degradation; and, sustainable lifestyles worldwide.
- In this transformation, based on nationally defined development priorities**,** no one should be left behind. The benefits of this journey must be spread across society and, in getting there, a just transition must be available for all.

We must unlock the full potential of technology.

- Many solutions already exist and more can be developed. They can take us forward and we must act now to start the transformation. Climate action brings opportunities for economic growth and gains in productivity.

We must demonstrate bold leadership.

- Climate action must remain at the top of the political and strategic agendas of world leaders. They must now translate the global vision of the Paris Agreement into national and local action, provide the necessary resources, and motivate and mobilize all stakeholders to help support and deliver a net-zero emission and climate-resilient future.

We must act together.

- Multilateralism and cooperation will enable us to address problems together, find solutions, and build consensus for the common good. Only a global coalition of actors – including Parties, national and sub-national governments, private sector companies, the investment community, civil society and all non-Party stakeholders – can take us there.

We call upon Heads of State and Government to maintain climate action at the top of the political agenda. Governments must continue to strengthen national policies and regulatory and institutional frameworks that deliver action and support until 2020 and beyond; provide grounds for bold, integrated and coherent policies; and, create a stable environment that stimulates investment in and action on adaptation, mitigation and building climate resilience. We recognize governments must anticipate and address any negative effects, particularly on workers.

We call upon Parties to work closely with non-Party stakeholders to enhance global ambition by 2020 and to develop long-term, low-emission development strategies. Together, Parties, working with non-Party stakeholders including sub-national governments, should pursue efforts to strengthen mitigation and adaptation commensurate with the objectives of the Paris Agreement. They must work together in the planning and pursuit of low emissions and climate-resilient development.

We call upon government and international agencies to step up financial, technical and technological cooperation. We must ensure the resources, technology and capacity for climate action are widely shared, and the barriers in the way of unlocking potential are removed. We also call upon governments and non-Party stakeholders to scale-up cooperation and resources for research and development, and transfer technologies for achieving low greenhouse gas emissions and climateresilient development.

We call upon private sector leaders to be drivers of change. We call upon the business community – from large, medium and small-sized enterprises, investors and entrepreneurs – to establish technology and science-based targets and transition plans, provide leadership in their sectors and supply chains, cultivate innovation and creativity, and invest in pursuit of the goals of the Paris Agreement.

We call upon civil society leaders to marshal the public and political will needed to drive action. We call upon them to engage political leadership, influence and challenge norms, enhance awareness, and mobilize action at the regional, state and local levels.

We call on spiritual leaders to unlock spiritual pathways for addressing climate change. We call on them to help their followers reconnect with the wonders of nature and creation, nurture love for the planet and foster compassion and reconciliation.

We call on the youth of the world to mobilize at a larger scale to ensure that their future is secure. We call on everyone to engage with the concerns that climate change poses for youth, and to take decisive action that leads to better opportunities, security and wellbeing for

young people, today and in the future. We call upon decision-makers to adjust education systems to help young people understand, address and adapt to global warming.

We call upon everyone to take forward a clear signal from the Talanoa Dialogue. We call upon everyone to act with urgency and recognize that we are in a race against time – we must act now to ensure sustainable development and the preservation of life on earth as we know it.

Key messages from the Ministerial Talanoas.

Key messages from the Ministerial Talanoas

Climate change, as a global problem, needs to be addressed through multilateralism and global cooperation. International support and global cooperation will help us bridge our differences and gather sufficient ambition to deliver on our goals.

Multilateral processes provide a space for the least capable and most vulnerable to be heard and supported. They are also key to enhancing capacity and learning from best practices to address the climate challenge.

Climate action must progress in synergy with the 2030 Agenda for Sustainable Development. The aim of the Paris Agreement generates synergy with our actions to reduce poverty, inequalities, hunger and conflict; to improve health and education; to protect our water and land ecosystems; and to foster innovation, sustainable cities, transport and responsible consumption and production.

Bold leadership will be essential for proposing and implementing the vast spectrum of policies and mechanisms, and ultimately achieving the goals of the Paris Agreement. Strong and committed leaders from different institutions and at all levels can inspire, motivate and mobilize their constituents and peers in the right direction and, therefore, catalyze change. They should lead by example and move from talk to action. At the same time, many countries and regions face challenges in the process of transitioning to low emission future.

Global climate action is underway but efforts enshrined in NDCs leave a large gap to reach our goals. Most participants set out their existing or planned climate legislation and policies, including the related achievements and expected outcomes.

Enabling regulatory environments will be key to supporting the planning and implementation of climate actions. The establishment of national climate policies and processes to integrate climate change into economic, jobs and development planning is underway. Participants also referred to concrete policies to reduce emissions such as carbon pricing, CCU and CCS, digitalization, e-mobility, improved standards and labeling, as well as incentives to encourage energy-efficient products.

Broad stakeholder engagement enriches the national dialogue for climate action and subsequently generates actors of change. Everyone – governments, sub-national, cities, farmers, the private sector, spiritual groups and others - have something to contribute and, therefore, must participate in the development of a common vision, the identification of solutions and the execution of actions.

More and more businesses are moving towards low emissions and climate resilient growth. Climate action is generating business opportunities for many. Many companies are already setting their own targets and are becoming leading innovators in their respective niches. This trend can be strengthened through a continuous dialogue between government and private sector and by establishing stable policy and legal frameworks.

Public and private financial actors will continue to play a major role in making financial flows consistent with the goals of the Paris Agreement. Many examples were highlighted from developing countries on positive returns from investments in renewable energy. Participants also noted that resources for adaptation and resilience is lagging behind and that much work should be done in understanding ways to increase investment.

Many countries are demonstrating their commitment to sustainable development by adopting integrated disaster management and sustainable development programs. These are focused on mitigation and adaptation to climate change aa well as the prevention of risks. They are also linked to international agendas such as the SDGs, with national, regional, and multilateral co-funding.

Forests, land use and biomass will continue to play a key role in addressing climate change. Forests are both an important carbon sink and the key natural resource for many countries. Many participants referred to nature-based solutions to vulnerability: forests, for example, act both as carbon sinks and means to reduce vulnerability to storm surges.

The findings of the IPCC Special Report on warming of 1.5º underscore the urgent need for action. Many speakers noted that the difference between 1.5 and 2 degrees is more than a number: for some countries it is a matter of survival.

Many countries are highly vulnerable and will be disproportionally affected. The impacts of droughts, floods, cyclones, typhoons, and storms are inflicting hardship and endangering their livelihoods. The impacts are creating a competition for resources in many countries, potentially leading to forced migration and conflict. In some countries these impacts only add to the development and social challenges they are already facing.

For many countries, science provides for a robust response to climate change at all levels and by all actors. Support by and partnership with academia and the research community strengthens the foundations for our vision of low emissions and climate resilient development. In this context, the work of the IPCC was regarded by some speakers as a fundamental work to guide the actions of the UNFCCC, governments and non-Party stakeholders across the world.

Ensuring a just transition will be key to achieving the goals of the Paris Agreement. Equity and fairness imply that everyone has an opportunity to develop and achieve their goals. Groups that would be affected by climate action or that are often marginalized should be heard and be given an opportunity to engage. In this context, some participants referred to gender considerations, response measures and common but differentiated responsibilities and respective capabilities. The importance to ensure a decent future for workers impacted by the transition, while striving to ensure sustainable development and community renewal was highlighted.

Future generations should not bear the consequences of our actions and inaction. Intergenerational equity is an essential guide to our decisions today. The youth should be provided with a space to be more engaged in discussions and decision-making processes as these concern their future.

Indigenous peoples must be part of the solution and their rights must be respected. Indigenous groups from across the world have long taken action by living in harmony with nature and by protecting land ecosystems. Indigenous knowledge coupled with modern technologies can

offer solutions for today. Economic development often neglects them and their wisdom. There needs to be a common recognition that natural resources should be shared by everyone, including the next generation.

Financial and technical support will become increasingly important to implement and enhance climate-oriented programmes. Many stories from developing countries and non-Party stakeholders highlighted obstacles, barriers and innovative sources of finance for implementing climate action. These will be exacerbated in the light of the required transitions to reach the temperature goal. Participants emphasized the need to increase existing technical and financial cooperation, in particular through the GFC.

Unlocking finance and injecting substantial capital into economies can unleash the potential for transformative actions and the transition to a net-zero economy. Finance that is currently locked up needs to released and used to support developing economies. This will stimulate economic growth and drive the transformational changes needed.

Many of the technologies required to deliver on the Paris Agreement exist and others can be developed through cooperation and innovation programmes. Technological solutions in different sectors are becoming game changers, including electric vehicles, energy storage, CCS and CCU, smart grids, smart agriculture practices and others. Evidence suggests that subsidy reform and other incentive programmes can be used to motivate and enable the private sector to use latest technologies and develop those of the future. Clean energy, with lower GHG emissions, offers the more efficient and economical option.

Some speakers called for keeping up the political momentum towards enhanced NDCs in 2020. Some Parties highlighted their plans for increasing ambition in their NDCs in 2020 and encouraged others to do the same as this would be consistent with 1.5 degree Celsius pathways. Some called for convening a Talanoa dialogue every year on the road to 2020 and beyond, as well as including a Talanoa dialogue in the 2019 Secretary-General's Climate Summit.