Building Back Better with Forests and Farming
Roundtable #5 Transcript:
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DIANA FOX CARNEY: Thank you for joining us either for the first time or again. Today in our series about Building Back Better we'll be focusing on forests and farms. As many of you will know between them agriculture and forestry account for around - there's some debate on this - but up to around 25 percent of global greenhouse gas emissions. Forests obviously also draw down carbon so this is a very complex calculation which different people come out from different angles but it is an important area for carbon. It's also an important area for Canada and certainly when I first came to Canada - I come from an agricultural background - when I first came to Canada as a new Canadian I was surprised that Canada didn't see itself as an agricultural nation - forest yes - but agricultural powerhouse seem to be not in the national psyche in the way that I thought it might be. I think now is the time perhaps to change that. We'll hear from many of our fantastic panelists today about what can be done and how these two parts of the economy can be part of Building Back Better. So let me pass you over now to Toby to give a word of welcome and then we'll get on with the discussion.

TOBY HEAPS: Thanks Diana and welcome everybody. This is our fifth week in the seven week series. Just one observation that's interesting - there's a lot of gathering momentum each week. We see more and more momentum for this economic recovery to be a green recovery or resilient recovery and it was nice to see a big study come out by Oxford University led by Joseph Stiglitz showing the perceptions of different actors in society about the job multipliers of various stimulus and recovery options as well as the academic literature and the empirical evidence in terms of where the jobs are from the different recovery investment options from the standard ones to some of the greener ones. What they found was some of the highest job multipliers that exist are in things like building upgrades for energy efficiency and various other upgrades to clean energy infrastructure. But when you [talk to] the finance ministers offices who are probably the most important stakeholder making this decision, there's a general lack of familiarity and awareness with these multiple and they tend to rank them on the lower end.

So there's some education to do to ensure that we're making good evidence-based policy. In many cases the green recovery option is at least as job-intensive as a gray or brown recovery option and so if we look at it that way when we let climate be the tiebreaker we'll be well on our way to a resilient and in recovery. In terms of what we're going to talk about this week, we're looking at farms and forests and we have some complimentary suggestions but the two core proposals that we're looking at are to up the ambition of Canada's tree planting program from 2 billion trees over a decade to 10 billion trees planted and to also help to transform 10 million acres of marginal farmland to be productive carbon reservoirs and biologically diverse and rich ecozones. So those things will both require money in the order of about two billion dollars per year - to put that in context that's about 0.1 percent of our GDP - it would lead to an estimated 20,000 annual full-time jobs per year and in the the average carbon emissions reductions

annualized between 2020 and 2050 would be about 50 million tons of reduced carbon emissions per year. That's what we're going to be looking at today. We are the only G7 country not to have an environmental goods and services policy embedded in our agricultural policy so this is a good time for us to to get on with it and with that I'll pass it back to Diana.

DIANA FOX CARNEY: Thank you so much. Let me encourage you during this next hour to add your questions and comments in the Q&A panel because we're quite busy with speakers we may not answer the questions online but we will be downloading them, getting to them and thinking about them as Toby and his team develop these ideas further. So please do that. I get a pass over now to David Martin who is chair of WWF Canada to give us an introduction around nature.

DAVID MARTIN (WWF): Well thank you very much Diana and I know we're going to be drilling down into forests and farms but I appreciate having this dialogue today because what you and Toby are really doing is you're incorporating nature and biodiversity in Canada's recovery into your thought process and this is an essential component that needs to happen. It isn't getting much attention and it's probably because conservation doesn't necessarily produce the immediate impacts everyone is looking for right now but they are fundamentally wrong to ignore it. Investing in nature and conservation is very much about protecting the economy and jobs and preventing disasters. Just look at where we are right now. COVID-19 is generally framed as a public health crisis and an economic crisis but this is fundamentally missing the boat. It hasn't just been health officials warning us about pandemics, climate scientists have been doing this as well. We are on the fourth major zoonotic infectious disease since 2000. Think about that. That's only 20 years. The key driver of these pandemics has been our unhealthy relationship with nature. We are the ones destroying habitats, trading in live, high-risk wildlife creating ideal conditions for potential pandemic outbreaks and our impact on climate is allowing the range of disease carrying and insects and other vectors to grow exponentially. So I just wanted to start and make this point because you know we can keep throwing significant sums of money to mitigate health and economic challenges we face now or in the future or we can consciously invest part of this money now into the very thing that can prevent these same challenges - nature.

So nature-based solutions are essentially what we're talking about - if nature-based solutions are not part of any green recovery plan whatever policies are put in place simply won't be as effective. Why? Well nature and biodiversity account for approximately 125 trillion dollars of economic value. Now that's a global number so you can extrapolate that to represent Canada but however you do that, a couple things will be abundantly clear. It is significant, it is largely free and unfortunately it's declining to our detriment. We need to see our enormous carbon sinks in Canada as a competitor advantage. Our coastlines with large eelgrass and kelp forests, our wetlands, our peat bogs, our grasslands, old-growth forests - all of these, protecting them and investing in them stops the detonation of a carbon bomb that we'll have to deal with later. Let me just finish on one final point. I've been following the general conversation around recovery plans and I'm happy that the language is moving away from being sort of shovel ready

to be shovel worthy. Capital spending on nature is easy. Worker training requirements are low, many projects have minimal planning and procurement requirements, many aspects of work meet social distancing norms. It unlocks the value that civil society can bring. It does all this, all the while maintaining fundamental economic multipliers that we're going to be hearing about that come from such investment - jobs, lower health care costs, strengthening relationships with Indigenous communities, just to name a few. So on that, I look forward to hearing the rest of the presentations as we drill down more into farms and forests and looking forward to the conversation that ensues. Thank you very much.

DIANA FOX CARNEY: Thank you so much David, that was a great introduction and a great segue into Ralph who will tell us a little bit more about those proposals that Toby mentioned.

RALPH TORRIE: Thank you Diana and thank you David for an excellent context-setting introduction which covered some of the things I was intending to say which will give more time to our panelists which it's a good thing. When we set about over the last little while to develop our ideas for where is the overlap between economic recovery and things that we need to be doing to restore the sustainability and the health of our forests and agricultural ecosystems, we often ran up against the conflict in the sense that these systems take a long time to change - they don't turn on a dime. It takes a certain amount of patience to get those changes in place and at a time when we're looking for quick fixes and quick job creation schemes, it was a little more challenging to see where the overlap was here than in some of the other topics that we've been covering but it certainly wasn't difficult to see. Essentially the points that David was making about the importance of our natural ecosystems to our public health, to our economic health and really to what it is to be Canadian. Our agricultural and forest ecosystems in particular have been supporting Canadians long before European contact, long before the disruption of the fossil fuel era. When the pandemic hit, they were both in trouble I think it's fair to say the forest industry has been in decline in this country for 15 years or more now due to a number of structural changes in its market. The agricultural industry, if we want to call it that, is clearly operating on an unsustainable model that is very highly dependent on fossil fuel intensive inputs that are problematic both environmentally and economically for the farmer. It's not a sustainable model.

So the ‘pandemic pause’, as I've started calling it, gives us a chance to think about when we come out of this and when we rebuild our economy, where are the opportunities to get these two big important aspects of Canadian life - our agricultural and our forestry systems - moving in a more sustainable direction. We came up with two specific ideas and the panel will help explain the broader context and the the richer nature of these suggestions, but in the area of forestry we're proposing that the commitment that's already been made for increasing the afforestation efforts in Canada - and this is by the way in addition to what industry already does in terms of replacement planning - to increase the commitment the government has already made to 200 million trees up to 800 million trees more. This is a 1.6 billion dollar proposal. It will create 15,000 jobs a year using pretty modest multipliers in reference to the point Toby made earlier and when the trees get going - and it takes time - we see at least a 30 million ton per year

carbon sequestration benefit. Of course when it comes to these natural carbon cycles, the sequestration is not permanent but the strategic issue here is that we will get those tonnes - if we start now, we will get those tonnes when the trees are in their prime during that 2030 to 2050 period when they're growing fast and we are going to be looking for every help we can get in dealing with the imbalance in the carbon cycle. So I think that's what in terms of flattening the curve of the GHG emission crisis that we're facing, this is where sequestration options have a particularly important role to play on the agricultural side. There are a number of people who can speak in much more detail about this than I can - I've been more of a witness to the formulation of this proposal over the last week, but it's to invest in farmers' ability to convert marginal land to basically forestation.

There's a secondary proposal that involves helping farmers reduce their dependence on nitrogen, fossil fuel based nitrogen, fertilizers. With respect to the restoration of marginal lands or the increased productivity at marginal lands, the proposal is for a 400 million dollar program over ten years - as most of our proposals - to take 10 million acres of marginal farmland and develop that into effective carbon sinks to the point where we would be getting a 22 million tonne per year carbon benefit by the by the end of the 2020s. Again, very job intensive, 5,600 jobs here, 15,000 jobs in the forestry proposal I mentioned earlier.

So these are the two specific ideas that we've zeroed in on for forestry and agriculture that we think overlap very neatly with the economic recovery agenda and which at the same time allow us to give a boost towards moving these two big systems in the direction of sustainability. So I'll stop there and turn it over to the experts.

DIANA FOX CARNEY: Ralph, you're the expert - the general expert. Thank you for that, thank you for those proposals. We'll try and get a bit more detail on those proposals now and I think the way we're gonna do that is we're gonna start with the forests and then move onto farms even though there are obviously links between them. So who better to start with then Daimen Hardie, who's Executive Director of Forests International.

DAIMEN HARDIE (FORESTS INTERNATIONAL): Thanks Diana.That was a great intro by David and Ralph and I'll just pick up on forests. I mean one thing to set the context here - Canada is basically one of the largest forests on earth really. In terms of forest area by nation we're right up there with Brazil's Amazonian rainforest. This vast forest that surrounds us and that we all enjoy and it provides so much for us, it's big enough to really make the difference this decade to reverse climate breakdown, but unfortunately the reality is right now our forest actually emits more carbon than its sequesters because of our intensive cutting and increasingly frequent disturbances like fire because of course as a tree grows it pulls carbon or the atmosphere and brings it back home on earth where it belongs and puts it into living systems . But when you cut down that tree or or if it burns the emissions are released back into the atmosphere.

Canada is also home to some of the best foresters in the world, some of the best forest institutions and it's well within their abilities to reoptimize our forestry sector for carbon drawdown and climate security, but really nobody's really asking them to do that. So if we started asking our forestry sector to make Canada a leader in climate smart forestry and we did that through our policy signals and our market incentives and our R&D investment and just in how we think and talk about our relationship to forests now in this time of biodiversity and climate crisis, I know that they would rise to the occasion. If we do that, we're gonna see a like a huge surge in employment in the sector as well because as was mentioned in the intro it's been in decline for a lot of years. Careful climate smart management for climate security requires a lot of really specialized work at all levels.

I was reading a story in The New York Times yesterday about the conservation corps - how President Roosevelt in the Depression era created this solution to tackling massive youth unemployment and a backlog of restoration and conservation work in the US. He launched in the early 30s and over ten years it employed over three million people. They did a lot of good work; they planted more than three billion trees. So if we look at expanding Canada's two billion tree program, make it much more ambitious to the 10 billion tree mark over the next decade and combine that with natural infrastructure investments - there's a lot of shovel worthy natural infrastructure projects ready to grow across Canada. Also, smart investments in green professions because we want investments that create jobs right now but our jobs that are good for today and the future. It's the conservation economy and the low carbon that is the future. So I see a lot of promise there. Where I work here on the East Coast in the Acadian forest region we've got around eighty thousand family forest operators who are ready to get to work protecting and restoring their forests for climate security. They just need an enabling environment and because the conditions are so marginal right now under business as usual, it really wouldn't take much investment to shift the mode. The United Nations is warning us that we have 126 months left now to turn the ship and they've offered us four pathways out of this climate crisis and forests are key in all of them. They're just so important you know, they're really a deal breaker.

There are three things that are giving me a lot of hope right now in terms of what we can do and what Canada's role can be. One of course is the crisis responsibilities that we're all proving right now. I'm not the first to say it but we just changed everything in our lives and in our economy very quickly. That shows that we can act fast. The second is when you work with forests or farms or any natural system you realize what a huge capacity for renewal they have and I don't think there's really any limit to the possibilities when people work with forests in a more regenerative way. The third, which is the biggest, is just this return of Indigenous leadership to the land and the return of the original caregivers to the land that we're seeing in Canada. Some of the most exciting innovations in forests and climate security over the last number of years have been Indigenous-led and some of the most exciting proposals around forests on the table right now are Indigenous-led. I was reading about one from Sayisi Dene, a twenty five million acre protected area in the boreal forest that could store upwards of thirty five years worth of Canada's annual greenhouse gas emissions. That's the type of thing that we need to be

supporting. We've learned in the environmental movement and in the climate movement that we can't really make good durable progress on environmental issues unless we also create social change and make progress on justice as well.

So I think a green recovery with forests - it won't be effective unless it's also a just recovery and so that means putting people who are most directly connected to the forest in the industry and on the land really at the center of our solutions. So in addition to modernizing our forest industry to meet these climate imperatives and stay competitive, I think the biggest opportunity is [transfer] more forest lands to Indigenous care and the science is really clear on that. Indigenous and other collective communities, they do a better job of keeping forests and their critical carbon stores intact over the long term and that's exactly what we need right now. So let's listen to these experts and step out of the way because the forests and the climate and the economy need saving right now. We need that to happen right now and these are the people and experts who can help us do that.

DIANA FOX CARNEY: Thank you so much. A couple of questions have appeared in the chat window and it's all about how we do better with our existing forests and reduce emissions from those and there are examples of countries that are doing that much better than us. You mentioned the Indigenous role in forest management so I think I'm going to turn over right now to Valérie Courtois who's director of the Indigenous Leadership Initiative and get her opinion on this.

VALERIE COURTOIS: Thank You Diana and thank you all for hosting this panel. It's a real honor to join you and Daimen, thank you for setting me up so well for my contribution. Indigenous peoples in Canada really are at the forefront of the conservation movement. I've been in this career for about 20 years now and I'd say over 90% of all new protected areas proposals in Canada have either been led or co-led by Indigenous peoples. In fact if Canada is to achieve its goal of 25 to 30 percent conservation, which it will pledge to do internationally, it needs to work with Indigenous peoples and we're poised to do that. You're right, the Sayisi Dene is a great example. The community, which is the only community on the Great Bear Lake which is one of the largest lakes in Canada, would conserve about 34 years of Canada's emission. In fact, the boreal forests itself holds about 11% of the globe's emissions and so this the conservation movement is essential and we can talk about restoration and planting new trees but first and foremost we have to keep what's in the land there. When Indigenous peoples are at the lead of that land-use planning and deciding on how lands are to be used, on average that protection ranges from 60 to 80 percent of those landscapes.

The other side of the coin to protect areas and to good management of lands is Guardians. So these are what I like to call our moccasins and mukluks on the ground or our boots on the ground who are actively managing these forests and these landscapes for the benefit of all. You could check out landneedsguardians.ca for more information on what Guardians do. Investment in such Guardian programs in fact has an important social return on investment which was also

mentioned by Daimen, so for every dollar invested right now we've measured approximately three dollars in return on social and economic benefits. Those includes things like reduced rates of violence against women or reduced rates of incarceration, increased language retention - all of the things that we've been talking about through the Truth and Reconciliation Commission, the missing and murdered indigenous women and girls work. That is important for resetting the relationship between Canada and Indigenous peoples in Canada. Currently there are about 60 existing programs Guardian programs across the country and this has been an exponential growth in the last couple years thanks to investments both by the federal government but also by Indigenous nations themselves in these programs. I've had the benefit of managing and working with Guardians for the last 20 years and what I see is when Guardians are present, the deepening and a more meaningful relationship can be created with proponents, with land use, with other Canadians and to me that's really reconciliation and act and it provides an opportunity in a landscape that we all recognize and identify with to have deep conversations about the future of those landscapes and what our role and responsibility to those landscapes are. So maybe I'll leave it at that Diana and I'm looking forward to great questions from the participant.

DIANA FOX CARNEY: Fantastic, thank you very much. It's great to know what's going on and I'm gonna now turn to Rob Keen who's CEO for Forests Ontario and Rob perhaps you can talk to us a little bit about what's required, what kind of capital, what kind of jobs could be created in a sector through the measures that Ralph's talked about.

ROB KEEN (FORESTS ONTARIO): Absolutely thanks. It's a real pleasure to be here this morning, in particular to get a bit of a glimpse of everybody's home working environment -looks very comfortable for all, so that's great. Perhaps a bit in context with where we are with our tree planting activities in Canada, specifically with a reforestation tree planting which is essentially the creation of new forests. But first just to realise that the forest industry of Canada currently plants between 500 million to 600 million trees per year - now, they are legally required to do this. It's reforestation and it's for the privilege of being able to harvest off of public lands, crown lands. So that gives you some notion - okay, that's obviously some pretty big numbers, but again legally required reforestation. In fact it's recognised by third party certification that here in Canada, we actually have some of the best managed forests in the world because of the forest industry, because of the abundance of public lands that are being harvested, and the regulations that go with that. We start talking about tree-planting on lands that haven't traditionally had trees for number years as generally referred to as aforestation. Predominantly the talk of what the two billion targeted that's been identified or the ten billion target certainly for this session - that's the type of tree planting that's being described, it's the creation of new forests across the landscape. Forest Ontario has been doing this for a number of years, certainly here in Ontario with the 50 million tree program and across Canada with Forest Recovery Canada, so we do have some history with that tree planting activity.

To give you an idea of the amount of aforestation going on, we're probably looking around 10 million trees per year across Canada to be planted. When we talked about the two billion commitment over ten years, that's 200 million trees per year - of course then you go to the 10

billion tree commitment that's a billion trees per year so that's quite a required increase in overall capacity to achieve those types of numbers. Not that it can't be done, it's great, it needs to happen. The nature based solutions that Daimen was referring to, are actually essential here to create that amount of new forests, but it's just it's in perspective of okay how much capacity do we actually have to increase to achieve those types of targets. I think it's also really important for folks to recognize that tree planting is more than just planting a tree in the ground. There's a whole ream of activities associated to ensuring that once you plant the trees, you will eventually achieve a healthy forest and it starts right from the seed collection and you're looking for knowing where the seed is coming, from called seed sourcing, you're talking about stock development, getting the nurseries to start growing more, you're training people to do tree planting properly, you're following up with monitoring, and then you're even following up with adaptation practices, recognizing that climate change will have an impact on our forests as much as increase in the forest cover can help mitigate climate change. So all these things that play into ensuring that we move forward and create healthy force for the future. The point is we've got the right tree in the right place for the right reason. I think that really says a lot for what we're trying to do right across Canada.

I have had discussions with a number of folks involved in all of the various facets of a successful tree planting program and certainly the comments shared to me have been that -everybody's very interested in participating in this - but what is absolutely essential is the long term, guaranteed sustainable funding that needs to be in place to support the capacity growth that we're certainly - all you know with all the different facets that I mentioned - to support that capacity growth. I've talked to nurseries in Western Canada and BC and they say that's great that the people we want to have this ambitious target but in order for them to truly invest in their own infrastructure, they need to have at least a 10-year window of guaranteed funding to do so. That's right across all the different aspects of this, everybody saying the same thing, so it can't be just a year-by-year line item in a budget. There needs to be some sort of guarantees, some policies developed there, to make sure that if people are going to start investing in this and we do have, as Daimen said, we have an extremely skilled forestry sector in Canada but in order for everybody to invest in that, we have to make sure that funding is there.

The other aspects of this - and it was actually Lara, give this credit to you with ALUS Canada - we got to ensure that we have people on the ground that can meet with - in our case woodlot owners or, Lara mentioned this other day, just being able to talk to farmers - and meet face-to-face on how to do restoration, how to encourage landowners and create incentives for landowners to want to contribute their lands to the societal benefit - when in case there are landowners that we need to engage with, certainly in southern Ontario that's the case. I've seen this over the number of years - a lot of the tendency these days is "well let's create a website, put some information on it everybody go to the website and figure out how to manage their their woodlot or farms or forests or whatever it might be" and the reality is people want to talk with people about what they're potentially going to be doing with their forest. So it really is important that you know that opportunity is there, the resources are contributed, to being able to make that happen and I think getting people understanding more of how important it is to sustainably

manage forests and to make sure that they're healthy, goes with that kind of communication with however the landowners are of the particular forest. So I think this is a great opportunity - currently the two billion target, but like I'd love to see it go to ten billion - we've got just a huge opportunity to create these nature-based solutions, but we just got to make sure we do it right. There's all sorts of experts here that are indicating how that can happen, but there needs to be the focus - right tree, right place, for the right reason.

DIANA FOX CARNEY: Thanks so much Rob. We have a couple of questions in comments about the point you made around whether we have the right workforce, perhaps have a skilled workforce in some areas but whether we're empowering youth enough in this area, Indigenous youth in particular, and whether the schools provide enough forestry training to support this development. I think that's something that we won't have time to go into today but we will think about offline. I'm gonna pass over now to Tzeporah Berman and many of you will know her. She is International Program Director at Stand.Earth and she has been thinking about what we do with our forest products amongst other things. So perhaps you could come and comment on your thoughts, Tzeporah.

TZEPORAH BERMAN: Thank you it's, it's great to be here with all of you. Our time is short so I'll focus really on two messages. I think it's very clear that we need to listen to science and we need to protect what we have. We all share a lived experience now of what happens when we do listen to science and when we act quickly and we know here that COVIDis not the only curve that we need to flatten. Building Back Better means bending and flattening the curve on greenhouse gas emissions. Building Back Better means prioritizing companies, industries, plans and infrastructure that protect what we have, protect biodiversity, stored carbon, ecosystem services and stopping or winding down those that do not. The focus on tree planting in these recommendations is a very Canadian approach - we don't want to rock the boat on existing industries. But I think we need to be clear when we look at the science, our forest policies mirror policies from the 60s in Europe. Our agricultural policies are maybe from the 80s in Europe and neither of them focus on maintaining ecosystems as the foundation of resiliency. In fact, Europe's now scrambling to undo those effects to rewild.

So last month the study in Nature on irrecoverable carbon, scientists detailed that vast stores of carbon are being released and can't be restored by 2050. The study calls for the next generation of protected areas network across critical ecosystems with high irrecoverable carbon stocks. Then two weeks ago a groundbreaking report commissioned by the Treasury in the UK assessed the economic value of biodiversity and concluded that current high rates of biodiversity loss pose a major risk to our economies and our way of life. Just as diversity within a portfolio, financial assets reduces risk and uncertainty. Diversity within a portfolio of natural assets, biodiversity directly and indirectly increases nature's resilience to shocks, reducing the risk to services on which we rely. We've heard a lot this morning already about how boreal forests store more carbon per hectare than any other ecosystem on earth, probably other forest ecosystems except mangroves, yet right now, every year logging companies are clear cutting 400 thousand hectares, about a million acres of boreal forest. That's about 7 NHL hockey rinks

per minute. Research in BC has shown that following a clear-cut there's a minimum of a 13 year window where the logged and replanted area no longer sequester's carbon. So this analysis suggests that clearcutting is preventing forests in BC from removing an additional 26.5 million tonnes of carbon dioxide per year from the atmosphere. So the point is that maintaining older biodiverse forests draws down carbon levels and helps buffer imperiled ecosystems against the impacts of climate change. But more than that protecting intact forests also makes nearby communities more resilient to climate impacts such as droughts and fires and wildfire.

Last month Stand.Earth released an investigative report on Canada's growing wood pellet industry and I urge you to take a look at it. Because what we're seeing is that pellets are heavily subsidised. They're touted by our governments as a climate solution but growing the wood pellet industry in Canada it doubles down on carbon emissions first by instant releasing a forest stored carbon at the smokestack and second by driving the further degradation of forests. So listen to the science. In the words of IPCC scientist professor emeritus Bill Moomaw, if we let some of our existing natural forests grow we could remove an additional 10 to 20% of what we emit every year, but instead we're paying subsidies to have people cut them down, burn them in place of coal and counting it as zero carbon.

So in sum, we need to focus on protecting high biodiversity areas, carbon-rich primary intact and old-growth forest landscapes. The idea that we're still allowing critical caribou habitat to be logged in this country to make toilet paper when our own scientists have said we need to protect those forests needs to stop now. We need to support Indigenous Guardian programs,as we've heard, employment centered on land restoration, economic diversification in these forest communities to create more jobs. It really is time to reimagine the fiber industry in much the same way we're starting to reimagine energy and oil. We can add jobs and economic vitality with a value-added job strategy. We can build furniture, we can make things and stop shipping raw logs and wood pellets while clear cutting our forests which are the planet's carbon pools. We can search out alternative fibre supplies, recycled fiber, and agricultural waste. We need to update our forest practices to reflect adaptation science, ecosystem based management that maintains or restores original forest complexity rather than the existing practices which are designed to ensure maximum extraction. Selective logging for example in coastal forests, FSC logging across the country - it will employ more people. Then finally we need to get honest about carbon accounting. We have a broken carbon accounting system when it comes to terrestrial carbon - we're not accounting for emissions from log enrolled forests or methane emissions from peat and soil disturbance. A recent paper in Waterloo showed that just from oil and gas exploration from seismic lines in Alberta alone, these undocumented emissions would boost Canada’s national reporting of methane in the category of land use in land-use and forestry by about 8 percent. Instead of tearing down nature, we need to rebuild our systems and protect the abundance that we have.

DIANA FOX CARNEY: Thank you, that was with great passion. I think we're we're with you on that and I think the idea that we should make use of this crisis but to listen to science but also to really rethink the way we're doing things rather than be very incremental in our thinking and just

throw things on top - it was a really good wake-up call. You talked about usage of the products I'm going to pass over now to Magali Depras who's from TC Transcontinental, as you know is a huge packaging and printing company.

MAGALI DEPRAS: Thank you very much Diana, pleasure to be here with all of you and thank you for having me. So my point will be how can businesses support the conservation of forests and provide you a few examples of where we think we can support your efforts. I'd share with you what TC Transcontinental has done in terms of forest conservation. As you said, we're the largest Canadian printer we purchase paper obviously and for decades we've been engaged in with the supply chain in, first of all with our procurement practices and ensuring that the paper we purchase comes from certified paper sources. We've been implementing this for a number of years and now I'm pleased to report that 100% of the paper we purchase is certified.

The second item has been to engage with NGOs such as Canopy in protecting endangered forests and engaging our paper suppliers and our supply chain to have responsible practices. So we've done a number of things - I'll provide you an example with the brought back forests in Quebec where we were able to support and protect 9,000 square kilometers of forest. So it's always been our responsible practices and incorporate social responsibility.

The last point I would like to make - today we're talking about the circular economy and how we can create jobs and new innovations and opportunities. In the past the recycled paper industry was alive, it was before we started shipping those recycled bales to Asia. But since now Asia has made us stop on the imports of those wastes, this is in my opinion a new opportunity for us to revisit how we could increase the usage of recycled paper in our productions. We have already engaged in projects with paper mills to look at ways of restarting their assets that they had not used so much and tried to produce more recycled paper for us. In the past, just to give you an example, up to 40% of recycled paper has been used in paper production. So I believe this is a great opportunity with economic benefits and environmental benefits that we should revisit and TC Transcontinental is definitely engaging and looking at it with our partners, with our supply chain. So in terms of government support that you mentioned at the beginning - I think government support is essential obviously in ensuring that we protect our ecosystems and our forests, but it's also important to have their intervention in terms of innovation, in terms of making sure that we are creating this circular economy for paper. So this is the couple of examples I wanted to share with you and happy to take questions if there's any. Thank you.

DIANA FOX CARNEY: I'm sure there are lots of questions. Thank you so much for that. We're gonna move swiftly on now to agriculture, we've already got some questions in the Q&A window about regenerative agriculture. Who better to start with on the agriculture side than Darrin Qualman, who's Director of Climate Policy & Action at the National Farmers Union. Darrin let's hear your views.

DARRIN QUALMAN (NATIONAL FARMERS UNION): Thank you very much and I hope you can hear me okay, there's a fairly intense thunderstorm where I am right now on the farm where we'll

all be happy for the rain. I'm gonna sort of lay the groundwork in terms of understanding and missions and then Jane is gonna give some specifics of where we are on Farmers for Climate Solutions. But if we only know one thing about agriculture and emissions and this path forward - key to understanding agricultural greenhouse gas emissions is that they are the result of agricultural input use. To a very large extent there's a result of agricultural input use and as farmers' use of purchased agricultural inputs increases, so do on-farm emissions. Therefore it follows inescapably that any low-emission food production system must be a low-input food production system and I just want to underline that with a bit of a historical example. Humans have practiced agriculture for ten thousand years and for 99% of that time it was low-input, low fossil fuel use, low-emission, didn't affect the atmospheric composition much, it didn't affect the climb and it didn't push us toward climate chaos. It's only in the last 1% it's massively increased the injection of petroleum-intensive inputs into our food production system that those emissions became a problem. So clearly we need to focus to a very large extent on those agricultural inputs. This need to reduce agricultural input use can be good news for farmers because as we reduce over-dependence on purchased inputs, we can increase farmers' margins and their net incomes.

So generally what is needed at this moment is an integrated suite of government policies and on-farm measures to reduce input use and greenhouse gas emissions. Especially critical is we need thousands of new independent agrologists to transfer knowledge from research organizations - universities etc - and really work with farmers to find alternatives and to help them reduce reliance on petroleum-intensive farm inputs. In the context of this discussion, this will really deliver a triple win. We can raise net farm incomes by reducing costs, we can reduce emissions as we reduce dependence on petroleum derived inputs and we can reduce emissions, boost net farm income and create employment all at the same time. The NFU lays out a detailed roadmap on this front. In the fall of 2019 we released a report called *Tackling the Farm Crisis and the Climate Crisis - a Transformative Strategy for Canadian Farms and Food Systems* with a number of other organizations [unintelligible] has worked to create the aberration the coalition Farmers for Climate Solutions and you can simultaneously increase the resilience in incomes of farmers and also decrease emissions from the Canadian food production system. Thank you.

DIANA FOX CARNEY: Thank You Darrin. I'm gonna pass lots of great points there but since we're running short of time I'm gonna pass directly onto Jane who is the Executive Director of SeedChange and has already been flagged by you, Darrin.

JANE RABINOWICZ (SEEDCHANGE): Thank you, exactly, Darrin was there to tee up the issues and I'm here to talk about solutions. I want to just start by marking the moment that we're in right now. I've been working in food systems my entire career from all different angles and I have never seen the degree of awareness of the food system that we are currently experiencing right now from all angles, from the production side of things, labor, people aware of temporary foreign workers, their contributions and the issues they face, people aware of issues and bottlenecks and concentration in food processing, people aware of how many people in Canada

actually are experiencing food insecurity, are at the threshold of food insecurity and have been catapulted into food insecurity because of the crisis. So the impact of the crisis across the food system is so clear and again I've never seen this level of awareness of the importance of the food system, the people in the food system and the vulnerabilities in the food system among Canadians. It just creates the imperative but also the opportunity to really switch the course a little bit and put us on a direction towards resilience, towards productivity, and then also towards profitability, because as was mentioned in the comments, farmers are business people and we can't be putting forward options for them that are gonna undermine their business operations. So Darrin already pointed out one of the tools that we have which is knowledge of the source of emissions in agriculture and these are well known and well documented.

Another piece of good news is that we also know about the solutions. They are already being implemented by farmers across the country, those are known. Programs that could accelerate their widespread adoption across agriculture are also present. So if we look at practices like enhanced rotations that will reduce nitrogen fertilizer use, breeding crops for low input production to again enhance performance without nitrogen fertilizers, looking at implementing on-farm renewables to reduce energy use on farms, best management practices in grazing, all of these things. SeedChange, the National Farmers Union and about a dozen other agricultural organizations this year launched Farmers for Climate Solutions. Contrary to popular belief maybe, farmers really want to be part of the climate solutions and actually need to be leading the process and so this is an unprecedented collaboration of farmer-led and farmer-supporting organizations representing all regions, all scales, all types of production to advance policies that will promote resilience in agriculture.

Pre-pandemic, our focus was on the Canadian agricultural partnership which is a five-year, three billion dollar framework which is the primary funding vehicle for agriculture in Canada. So that already represents such an incredible opportunity. What would it look like to integrate agri and environmental programs and incentives across the cap? With the pandemic we still in agriculture have to take a long-term view but we can look at with resources implementing a lot of these solutions much faster - training young farmers to support renewal and to get people going in sustainable farm operations, the tree planting initiative, integrating edible trees into the tree planting program, providing agrologic support to farmers for the planting and for the maintenance and then again this kind of the agronomic, agrological support that farmers are in dire need of to integrate and maintain and continue climate-resilient farming. So again, the issues are known, the solutions are known and already being practiced by farmers across the country and there are existing programs that also really accelerate their widespread adoption.

DIANA FOX CARNEY: Fantastic, well that's optimistic and I think the perfect person to turn to now is Lara Ellis who's Senior Vice President of Policy & Partnerships at ALUS Canada and Lara, in the chat window there's a few questions about whether this can really work whether regenerative agriculture is just a nice name and a nice idea but cannot really be part of a working farmer's life. You, I think can share your wisdom on that.

LARA ELLIS (ALUS CANADA): Thanks for the invitation to be here today. The ALUS program is all about additionality, putting nature back on farms. Our success today shows that farmers are ready, farmers and ranchers, are ready, willing, and able to step up to the plate to provide environmental and climate solutions. The ask - 400 million, 10 million acres of marginal land converted back to nature - that's a completely doable, realistic goal. All other G7 nations, as Toby mentioned, have ecological goods and services programs at national scale. ALUS is endorsed by all of our major farm groups, the Canadian Federation of Agriculture and a few others as well as ecological farmers and Christian farmers. An infusion of cash to marginal land projects for nature will create jobs, sequester carbon, have all sorts of natural infrastructure benefits that save communities real dollars that can be reallocated for other uses. Rather than thinking about pulling land away from farming, we are really increasing the sustainability of agriculture and food production. So putting grasslands, wetlands, planting trees,and partnership with groups like Rob's group Forests Ontario, protecting soil and water, provides pollination services for a pollinator-dependent crops and gives farmers and ranchers an additional revenue stream. So it's a great idea, it's ready to scale in Canada, we're ready to be a part of that and it's go-time here.

DIANA FOX CARNEY: It's nearly end time - I've got a couple more things to say, I just want to bring in Celine, because I know you had work to say on agriculture.

CELINE BAK: We're taking a page from the great work that's been done on reducing inputs to propose a quickstart program that would enable and assist farmers over that hump, the period of 18 months from the move to reducing high GHG-intensive inputs as Darrin and Jane have described to moving towards nature's fertilizers, the nitrogen fixing crops, legumes, that provide a natural fertilizer through crop rotation. There's a worry that there would be a short-term reduction in productivity and so by providing stimulus over 18 months, 200 million dollars, it would enable farmers to get off that nitrogen treadmill, move towards those sustainable practices, provide the agronomist and expert advice in the very short term, which Darin and Jane have described. Of course that is completely complimentary and supportive of the proposal to return 10 million acres to nature by providing the ecological goods and services for sequestration of carbon and protecting our communities from sudden and very expensive climate events.

DIANA FOX CARNEY: Thank you sleep being brief and concise, to the point. Last word goes to Terri Lynn, we heard about the Indigenous community in forest custodianship. What about in the agricultural area, thoughts on that?

TERRI LYNN MORRISON: Just going back on some of the comments that we heard earlier, talking about giving the ownership back to the Indigenous communities and having them part of the planning and the land-use planning on their traditional territories, I think it's really important. I've seen this in communities where you know co-management is actually more efficient than just merely consulting with the Indigenous communities and I believe that if we start moving forward in that way that we'll see a lot of good progress.

DIANA FOX CARNEY: Fantastic, thank you. I'm gonna pop up now - we usually do a couple of polls but we're going to just do one now - Melanie if you could pull up the agriculture poll please, the second one, which you can get to what I'm saying my final words. This has been a really rich chat today and actually I think we've had a little bit more say disagreement is too strong but you know there's lots of nuance in this area. I think people are coming at it from different sides and that's really important and we thank you so much for your questions, many of which we haven't answered and some we have and your comments which we will get to absolutely. We really appreciate your contribution. The discussion I think has been really broad today. We've talked about systems, we're talking about agriculture and forest systems, we have to think broadly in these areas and that's what we've heard is - we can't it's not a reductionist policy of let's just plant a few more trees and get few more planters out there working piece rates and getting the seedlings into the ground that's not what we're talking about. We're talking about trying to nurture natural capital, we're talking about trying to create competitive industries in Canada and we're talking about trying to sequester carbon in ways that will last beyond a small incentive payment that lasts for one or two years. We're talking about changing the way we go about thinking about agriculture and forestry and having a more healthy and productive relationship - science-based yes - but broader and more systems-oriented as we go forward. So with that quick summary I hope, thank you again for joining us thanks to all our great panelists today. We do hope that you'll join us. We've got two more of these sector-based events left and then I believe Toby we have a wrap-up session at the end, I think. So we really appreciate your participation thanks to everyone and have a good day.