# Regional Community Reforestation Exchange

**Organized in Partnership with Taking Root, Nicaragua**
**October 16 – 22, 2017**

## Attacking ecological degradation and rural poverty through reforestation

Farmers living in the poorest parts of the world are the most vulnerable to the impacts of climate change. This is because they earn most of their income from farming, which is very dependent on the weather. Because climate change disrupts weather patterns and increases the frequency of extreme climatic events such as droughts, floods and storms, entire crops can be lost. When this happens in communities already struggling with rural poverty, many families are left unable to feed themselves – let alone rebuild.

Taking Root's work helps farmers adapt their livelihoods to climate change. Trees are much more resilient to extreme weather and are designed to provide an income for farmers. So when a drought, storm or flood destroys an agricultural crop, the trees are still there to provide a reliable source of income. Taking Root has been operating this community-led, native species reforestation project for over 10 years. The project empowers people, regenerates land, and implements reforestation using a methodology that calculates soil carbon levels, enabling them to accurately assess the environmental impact of their work. This October, some 25 coffee producers from across Latin America, CoopCoffees roasters and staff and representatives from allied organizations came together to learn and share knowledge about the multiple benefits of reforestation.

### Arrivals in Somoto

Despite several complications with the flights and connections – we were finally all reunited, picking up the last few participants to arrive at the Augusto Sandino airport on our way out of Managua. And a lively four hours later (Team Sardine) we were rolling in to Somoto!

After our first-of-many-plates-to-come of *Gallo Pinto y Carne*, we were introduced to Taking Root and their field work with producers in and around the town of Somoto. First stop - we visited the Bayardo Antonio Soriano plot, in a recent planting area of trees, and of corn and beans.

"We've been taking from the land for the last 15 years, without giving anything back," Bayardo said. "But now she needs support to get back to her same level of fertility and productivity from times past. That's what we are trying to do with the reforestation project."
Bayardo explained the how and why of interspacing with a variety of trees – each with its particular growth and carbon capture attributes, local uses, and potential post-harvest market value. As the trees grow and expand their shade cover, the corn and beans will be replaced with alternative crops and/or potentially be opened up as grazing lands for their cattle.

**Overview and History of the Project**

After 10 years of trials and adjustments in order to find the best native species - Taking Root offers several reforestation, agroforestry-design options, adjusted to the local context and producer feedback. They look for species that can grow fast or that have a particular ecological or economic value – while being well adapted to the region. Preference is given in particular to the local species: Mandagual, Caoba (Mahogany), Madero Negro, Pachote and Genizero. On the one hand, they want to plant tree species in function of their capacity to re-establish an ecological balance on the land and for the micro-climate, and species with high value in the local market as timber, while being highly functional for effective carbon sequestration.

The project is a good, example of working successfully with local communities, while also staying linked to a broader, international movement aimed at combating climate change. Due to Taking Root's effective tools and mechanisms for design, monitoring and follow-up with precise calculations of carbon sequestered in the biomass of the trees and root systems, the participating farmers can qualify for carbon offset income from the "voluntary" carbon markets verified under the Plan Vivo system.

"Our planting has to take into account the ecological criteria, but also the economic needs of the producer," says Taking Root Director Kahlil Baker. "We need market incentives to facilitate reforestation, so this approach of managed forestry has to produce some kind of market-ready product on a regular basis. If we followed the model of traditional reforestation - it could take between 30 to 50 years before the producer receives any financial benefit. In order to make this economically viable for small-scale farmers, we've secured carbon credits to cover some costs in the initial stages. And as the forest matures, it begins to generate income on its own (by harvesting some of the mature trees). It's the combination of the two that maximizes local reforestation."

Each member of the technical team has the responsibility of tracking between 20 and 50 individual farmers. In total Taking Root has supported: the planting of 2.2 million trees; the creation of more than 1,200 jobs in the region annually; and distributed some US$1.9 million in environmental service fees paid to small-scale farmers and their communities.

The reforestation design seeks to improve biodiversity, increase soil quality and improve the retention of the water in the soil and micro-basins. The Taking Root team will evaluate progress against a baseline assessment that has identified the type of soil, the level of forest cover and the socio-economic levels of the producer at the onset of the work. Re-establishing the water table is another key benefit of reforestation. Here we can see the advantage, not only for the local population, but also for livestock... as well as for the native flora and fauna.

"Reforestation is considered a solution to an environmental issue," Kahlil adds. "But in truth, we should be looking at this as a social problem. The root cause of deforestation is people in the pursuit of improving their standard of living."

In it's simplest form, **the program has seven basic steps:**

1) Identify the land and producers interested and capable of participating in the program.

2) Map the land holding.

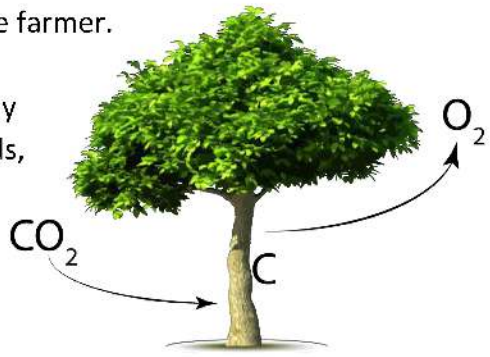
3) Spot check the starting condition of the land, using a random sampling methodology.

4) Generate a baseline report (this will later serve as a guideline to see if the farmer hit the growth goals – and thereby if he or she qualifies for the carbon capture payments).

5) When the growth goals are met, cash payments are distributed to the farmer.

6) Annual verification and advice / recommendations given to the farmer.

7) When the trees are mature, they will be "harvested" selectively and used for finished market products (currently cutting boards, bowls, salad serving spoons, etc)



**Accomplishments and Challenges and Lessons Learned**

"It was hard at first, because in Limay there was a recurring problem with draught…" recalls Luis Manuel Suarez – son of one of the earliest participants in the program. "And without the rains, nothing will sprout or germinate. We were fortunate to have a water source that we could go to if the rains weren't coming in time."

But today things look quite different in Limay. The reforestation has created a micro-climate that has transformed the drylands to lush forest. To date, there are more than 700 ha under managed reforestation and the visible and the economic results have really changed the attitude of the local population.

"We used to act like the forest was our enemy -- burning and abusing the land," Luis Manuel said. "But now people take much more care. Slash and burn practices have stopped altogether and instead of cutting down a tree for firewood, people are strategically trimming back branches."

**Monitoring is KEY to the Success of the Project**

A platform specifically designed for this project generates: randomly selected control points across each land parcel; GPS mapping capacity; and, carbon capture calculations based on species and growth rates. Because of this, the local monitoring team has seen their field control work simplified ten-fold. With mobile technology they can now load their physical, tree measurement data directly to the platform cloud. The system does the averaging, generates comparative growth results and the carbon capture calculations… and the results of those numbers determine whether or not the producer has met growth and carbon capture targets (hence, whether or not there is an environmental service to be collected!).

Now instead of note-taking from measurements in the field, returning to the office, entering the data into their computer and getting the results, results are generated in real time – side-by-side with the producer, if need be. Representatives of the local Taking Root team demonstrate the sampling process that allows for easy and statistically accurate measurements of tree growth and thereby of carbon capture from the reforestation plots. Based upon 6 specific tree locations/ha randomly selected by the software system, the team measures all trees within a 7-meter radius of the locator tree.

Ten years into the first reforestation plots, it's time for the first thinning of forest trees. Here we can see the kaleidoscope of native varietals -- from which the local Taking Root team will produce finished wood products for sale in the local and eventually international markets.

Now, Taking Root is initiating reforestation projects in new regions. We had the pleasure of visiting new one-year plantations in the San Juan Rio Coco area.

Pictured here – handing-off coffee seedlings for planting in this newly established coffee and native forest species....

## Guest Presentations:

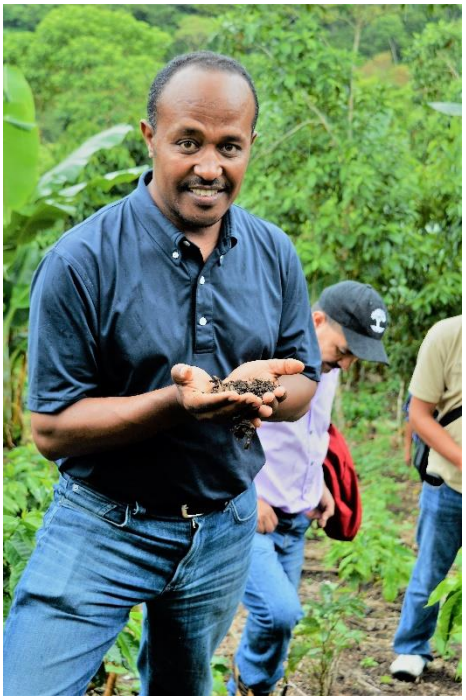
### Mike Mays, Heine Brothers' Coffee

Heine Brothers' is a 100% fair trade & organic coffee roaster and founding member of Cooperative Coffees. HB opened their first shop in 1994 in the Highlands neighborhood of Louisville, KY, and now have 13 shops and a mobile Airstream espresso bar, all across Louisville. From the beginning, Heine Brothers' has been committed to operating responsibly and sustainably – donating to numerous community groups, recycling, and direct engagement with their coffee producer partners around the world.

Heine Brothers' Coffee, has a long-standing commitment with environmental projects, currently working with the Forecastle Foundation, the Kentucky Natural Lands Trust, and The Nature Conservancy. What began as a supporting role during an annual, local fund-raiser has grown to include a year-round commitment to projects protecting bio-diversity in Kentucky and around the world. Mike leaves the Nicaragua workshop with a renewed commitment to share what they have learned about coffee farmer reforestation initiatives with their 200+ staff and their vast coffee consuming network and to strengthening the CoopCoffees commitment to soil regeneration and supporting efforts such as the reforestation work we witnessed in the field.

**Hussen Ahmed, Soil & More Ethiopia**

Hussen presented a brief summary of his social enterprise in Ziway, Ethiopia and his work with farmer groups in Ethiopia to support learning about soil, improved practices for compost production, and the need for soil recovery in Ethiopia.



Hussen was able to secure a line of credit to secure a 70-year lease on an 18.5-hectare land holding (a former landfill) after a long process of searching for an appropriate site. He began the process of restoration with composting and reforestation 4 years ago. The first step was to create a "living fence" with a variety of trees species that serve as: a fence, firewood, fodder, and fruits (4Fs) in keeping with the principles of permaculture. The plan is to get tree diversity up to 50 different species.

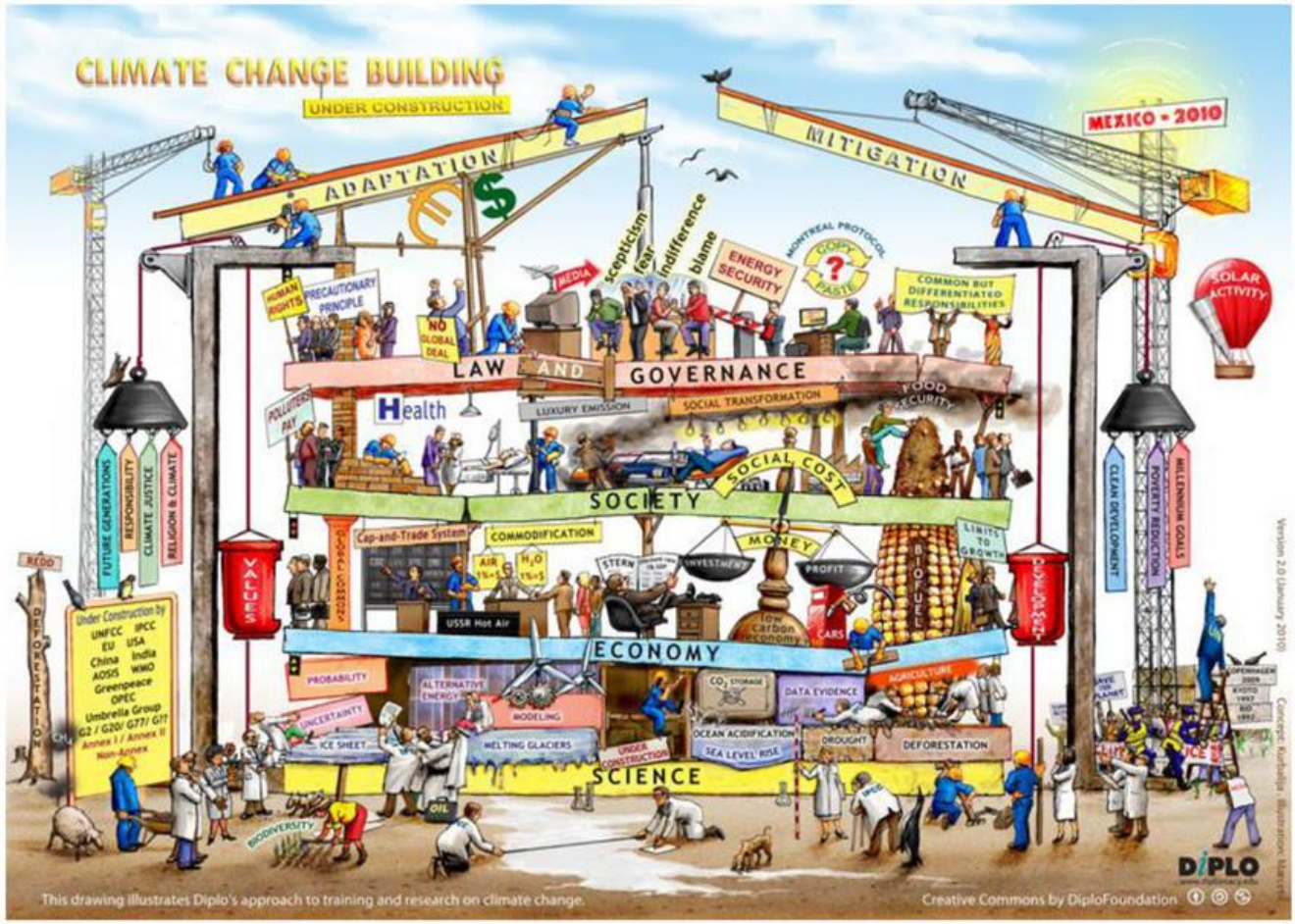
"When we first started one of our biggest problems was the total lack of water on the property," Hussen recalled. "At first we were purchasing water by the barrelful…. But then we bought a donkey who would make the water runs to the lake and back… thanks to him, we had access to water to establish the early plantings.

The primary intentions for this production and learning center are:

1) Demonstration farm and location for practical research in productivity and carbon sequestration; location for farmer training with practical / hands-on activities;
2) Office areas and cafeteria, farmer training center and store (for organic inputs and tools);
3) Production site for large quantities of windrow compost.

Hussen described in some detail about how climate change can impact soil health, as well as what Soil & More is doing through their enterprise to promote healthier soil and thereby healthier production.

**Benoit St. Jean -- Regulated and Voluntary Carbon Markets**




Benoit gave us a comprehensive overview of the formal carbon credit markets – both Regulated and Voluntary. He described the strengths and challenges of each and concludes with suggestions about how some of these "sustainable development" standards, as stated by UN goals, could effectively contribute to improve the likelihood for regulated and voluntary carbon markets to support activities that realize the double objective of "mitigation and genuine sustainable developments" (as stated in the international climate regime agreements).

**Working Groups**

We wrapped up the exchange in small groups, sharing their perspectives on project work already underway – what's working? what needs improvement? – and highlight some of the most important lessons learned. Our ultimate objective is to inspire project work in each respective region based on the successes of Taking Root.

**Conclusions, Lessons Learned and Commitments for the Future**

| IMAGE | Testimonial |
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|  | **José Fernando Reyes, NORANDINO, Peru**<br><br>This was a great opportunity to see the positive impact of reforestation in action. The technology being used here is incredible. The simplicity and the utility of these tools is impressive and we need to be thinking about how we can work together to create a collective platform and extend these services.<br><br>But understanding something only half-way can also cause problems… so I am committing to work with the decision-makers in my organization to create some institutional policies and mechanisms to help us counter the damaging impacts of climate change. To begin with -- we need to strengthen our commitment to reforestation and to improving the health of the soil with Norandino members. |
|  | **José Hilario Guerrero, NORANDINO, Peru**<br><br>It was great to learn about the history behind the project from the very beginning - including the challenges and how the team went about encouraging and convincing people to change the way they were managing their land -- to plant tress but also to think more globally.<br><br>I commit to share what I have seen and learned with others in my organization. |
|  | **Tomas Iván Aranda, Cenfrocafe, Peru**<br><br>I am really happy to have learned something very new here. I have studied forestry -- but I was not very clear about this whole process of carbon capture. I now see much more clearly about the multiple benefits that reforestation can bring -- both in the short, and long term and that includes a potentially diversified and more stable income.<br><br>I commit to share what I have seen and learned with others in my organization and to apply these practices in my own fields. I plan to reforest a piece of land that is not suited for coffee… in order to demonstrate to others the many benefits. |

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|  | **Edin Agustín Pongo, Cenfrocafe, Peru**<br><br>I learned about what we mean by the term "Carbon Credits" and so much more about how carbon impacts the entire system. We were able to see in "real time" how Taking Root and the farmers here are tackling this.<br><br>My commitment is to try to encourage more people and organization to get involved. We all want to breathe fresh air and to drink clean water. In order for us to achieve clear and sustainable agriculture -- we need EVERYONE to get involved. |
|  | **Solina Yarupoma Huaringa, Pangoa, Peru**<br><br>A good monitoring system can make a huge impact. I also learned about the different kinds of carbon markets -- Regulatory and Voluntary -- and now we need to understand what is most appropriate for us to attempt to engage in.<br><br>My commitment is to: bring what I have learned to the other members of my organization, through a summary workshop and to encourage us to create some local proposals for agroforestry design that meet our own local needs. . . |
|  | **Marcelo Ramos Perez, Pangoa, Peru**<br><br>We plant many trees, but we didn't understand how trees can capture carbon. I also got much more clarity around the complexities of the carbon markets.<br><br>My commitment is to: bring what I have learned to the other members of my organization, |
|  | **Manuel Elera, Sol y Café, Peru**<br><br>What we learned here has helped me to reflect on our own approach and to imagine better practices. What we saw is something that we thought was impossible to achieve. But now we see that with this level of organization -- you can actually access those famous "carbon credits"! And maybe we would not achieve the same -- but now we also see very clearly the many other benefits that reforestation can bring us. I was particularly struck with the emphasis on native species and I will give this more importance in my own work back home.<br>I commit to applying what I have learned in my own field and to share this information with the producers and other members of our team at Sol y Café. |

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|  | **Jose Alarcon, Sol y Café, Peru**<br>I acknowledge that it is difficult for people to change their habits from one day to another. But I am taking a very clear message home about the importance on taking care of the trees on our lands. I also learned a lot about the potential of new technology and agree about the importance of creating a broader platform. And i can safely say that if we were able to do this --Sol y Cafe would be one of the first to jump in.<br>I commit to applying what I have learned in my own field and to share this information with the producers and other members of our team at Sol y Café. |
|  | **Lorenzo Gómez Guzman, Maya Vinic, Chiapas**<br><br>I didn't really know anything about climate change and reforestation before this event. In my community in Chiapas there's a huge lack of information and understanding around the many positive impacts of reforestation.<br><br>My commitment is to bring what I have learned here and share it with my organization, to work with them to develop plans that we can apply in our own region. |
|  | **Pablo Picazzo, Maya Vinic, Chiapas**<br><br>Very impressive! The simplicity that has been build into the system, while providing such deep and powerful capacity behind the scene is truly remarkable! This has really helped us to imagine what is possible. It was also great to see the friendly relationships amongst the team and between the tecnicos and producers.<br><br>My commitment is to bring what I have learned, talk about it with Maya Vinic members and to bring these practices to a demonstration plot so we can show the many benefits of reforestation. |
|  | **Angélica de la Paz López, Maya Vinic, Chiapas**<br><br>I learned about everything that lies behind the term "carbon capture" -- from the farmer's field to the final product. We can't miss the boat on this; coffee is an agroforestry crop, and we need to learn to discuss this in a more detailed way. We need to talk about the added value of producing this way -- and I don't mean only in economic terms but in better understanding all the benefits that come with good agroforestry design.<br><br>My commitment is to: update myself on some of the information that is already available about these issues, and to support my organization in becoming more informed and active. |

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|  | **Luis Mazariesgos, Manos Campesinas, Guatemala**<br><br>I am leaving with my ideas much more organized in regards to what we need to be doing back in my community and my organization. We are planting trees, but not necessarily with any particular system in mind. Now I fully understand that trees do so much more than just offer us shade! They can actually take carbon from the air and bring it down to our soil....<br><br>My commitment is to share what I've learned with others in my organization. And even though it is clearly complicated to participate in carbon markets, some lucky people have been able to do so successfully. |
|  | **Sebastian Alonzo, Manos Campesinas, Guatemala**<br><br>I have learned about the importance of planting trees for the well being of the environment. I see that trees are much more useful than just for firewood and shade! I also learned about the importance and have new found appreciation for our native tree species.<br><br>My commitment is to share what I've learned with others in my organization and to encourage others about the importance of planting trees for ourselves and for future generations. |
|  | **Luisa Irías, Las Diosas, Nicaragua**<br><br>This is also something very new for me… we have been doing work in our field that supports carbon capture, but we didn't even know it! We thought that carbon capture was something very complicated...This has really helped me to better understand the importance of keeping trees on our land and that this means diversification of practices and potentially, even our income!<br><br>My commitment is to: bring what I have learned to the other members of my organization and support their learning as well. |
|  | **Rosibel Ramos, Las Diosas, Nicaragua**<br><br>This is the first time that I hear the term "carbon capture" and about the positive affects it can have in our soil and production. When we hear about carbon -- we tend to think of something completely different. That is something we use to cook with!<br><br>My commitment is to: bring what I have learned to the other members of my organization. |

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|  | **Roberto Adán Nolasco, COMSA, Honduras**<br><br>It was a fantastic opportunity to learn about this experience in reforestation and to see that these farmers have been able to get some economic recognition for their efforts. It was also very important to see technology that actually allows us to better position ourselves in the market and potentially facilitate this kind of complementary income.<br><br>COMSA has been looking at carbon capture and this gives us some interesting paths to explore. On a personal level, I intend to experiment with some native species and plant the seeds that I now have in my hands. |
|  | **Franklin Edgardo Castillo, COMSA, Honduras**<br><br>This has been a very interesting experience for me. I've seen that including certain kinds of trees in my coffee fields has actually been able to change the cup profile. Now I have also learned that it can capture carbon and bring it down to the soil.<br><br>I commit to apply what I have learned in my fields and to encourage others in my organization to do the same. |
|  | **Hussen Ahmed, Soil & More Ethiopia**<br><br>I learned Spanish! :-D It was a real pleasure to be here with everyone and am very grateful for this opportunity. The tool being developed here is very important and should be scaled up. It will help small-scale farmers get access to financial incentives and to help to combat climate change.<br><br>I commit to work in any way useful to support the incorporation of soil quality tracking in the next version of the tool. This addition will further empower producers to make the right changes in their practices to improve soil fertility and to be better positioned to resist climate change. |
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A special thanks to Grow Ahead, who has partnered with Cooperative Coffees to sponsor this initial Farmer-to-Farmer training, and to support the broader application of this program. With Grow Ahead "match funding" Cooperative Coffees was able to invite 17 producer partners from six countries to join in this Nicaragua based training with Taking Root and their local team at APRODEIN.