Plan Vivo Annual Report

2010

Limay Community Carbon Project
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1. Key Events, Developments and Challenges

1.1 Key events

1.1.1 Weather events
For the first planting season, there were no extreme weather events. However, there was an above average amount of precipitation. This affected four of the project participants, as it was logistically impossible to transport the seedlings to their property. Yet, despite the tropical storm Matthew that hit Nicaragua this September, the trees planted this year are growing well.

1.1.2 Media event – Shedding Light on the Carbon Market
In order to increase awareness of the project, Taking Root held a local media event, Shedding Light on the Carbon Market, in February in Montreal. During the two-hour event, we explained the need for carbon mitigation and Taking Root’s role in the process. It brought around 70 participants from the environmental community in Montreal and the surrounding area. We hope that the function also brought further awareness to Taking Root and its role as an environmental and social development organization.

1.1.3 Educational partnership
Taking Root and a local college created an education partnership, called the Caoba Project, where eight students will study Taking Root and its project area through a social science, development and historical lens. Their studies will culminate in a research trip to Nicaragua to perform individual field studies on the Limay Community Carbon Project’s environmental and economic development potential. Taking Root hopes that this cross-cultural collaboration will further strengthen ties between Quebec and Nicaragua.

1.2 Key developments:

1.2.1 The pilot project
Much of this year was focused on completing the first year pilot project and preparing future year plantings at much larger scales. The pilot project included performing a biomass survey, forecasting tree growth, performing risk analyses, recruiting producers, setting up nurseries and planting. It was an extensive task, so we are happy to report that we have successfully completed the pilot.

1.2.2 New human resources
In order to better prepare the organization for growth, Taking Root was able to hire extra staff members this year. In Montreal, we brought in David Baumann, a full time technical and policy analyst to aid in data and spatial analysis, web design, and perform technical report writing. He will help to streamline and strengthen the internal and external operations for the upcoming years. In Nicaragua, we hired Elsa Gonzales, trained in informatics and agroforestry. Complementing David, she will aid in the logistics and data collection in Nicaragua.
1.2.3 Plan Vivo Standard acceptance
A major development this year was the acceptance into the Plan Vivo Standard. After completing the various steps in the process, we were granted acceptance in March of 2011. We are excited to work with Plan Vivo in the upcoming years.

1.2.4 New partnerships
This year, our sales team created new partnerships in Montreal and abroad. Two companies that we are especially pleased to work with are C-LEVEL and U&W, both international carbon offset retailers. Both deals will bring exposure and a reliable source of funding to our organization in the coming years.

1.3 Key challenges:

1.3.1 Number of producers
This year we had a goal of obtaining 20 producers for the pilot project. We were able to recruit 22. With the producers, we were able to cultivate trees on 41.70 hectares, 1.70 hectares over our goal for the year.

1.3.2 Methodological challenges

1.3.2.1 Technical integration
One of the biggest challenges that we experienced this year was coordinating the transfer of information between Nicaragua and Canada. Between digital photos, GPS coordinates, scanned contracts, and other documents, Taking Root has found it challenging to streamline the process to make it efficient and consistent. We have, however, made huge steps in this regard, as we have been working to identify weaker points in the information chain, while coming up with technological solutions to automate the process. With the help of database and GIS programmes, we have been able to keep most of our information digital, allowing consistency, accessibility and durability to our data.

1.3.2.2 Interpersonal communication between Nicaragua and Canada
Information from the producers regarding the designs for the technical specifications is currently passed on to an office team and a series of external experts that create the documentation and methodologies. The final designs are then passed back to the producers for the implementation of the technical specifications. Given the differences in communication approaches between the various parties and cultures, creativity is required for effective communication.

To help ensure that our 22 different families planted 22 different plots of land with the same planting design and species, we had to create a visual diagram explaining the planting methodology. Furthermore, we developed a system of colour-coded ropes and tags indicating the required spacing and the order in which each tree species needed to be planted. Without these tools, the families would have had much difficulty matching the planting design. Although this represents just one example of a communication challenge that was successfully overcome, hurdles of this nature are likely to continue to arise, requiring continuous flexibility, patience and creativity.
1.3.2.3 **Loan system**
For this year’s project, cash and fencing material advances were provided to participating producers for preparing the land in time for the planting season and for fixing damaged fences. Although this cash advance system is likely to continue into the future, methodologies will need to be refined such as establishing an advance limit relative to the area of the land placed under Plan Vivos.

1.3.2.4 **Identification of suitable land**
Through the pilot cycle, a couple of producers that were originally recruited into project were later withdrawn because their land was not eligible due to excessive forest cover. Furthermore, a few other people were withdrawn, as they did not meet the minimum land requirement. There were also delays created from certain one-time setup steps required to obtain the registered Plan Vivo status. For example, conducting the biomass survey delayed the recruiting of farmers and the proper analysis of their lands.

Having completed these one-time projects, we will start recruiting and surveying land much earlier in the season for the upcoming year. This should result in having more appropriate project participants and land parcel sizes.

1.3.2.5 **Relationship to the community / politics.**
Taking Root’s relationship with the community is very positive, both with the municipality and with its community members. One misunderstanding took place at the very beginning of the pilot programme where a producer dropped out of the project because he believed that the project would take possession of his land since we required land title proof. To prevent this misunderstanding from reoccurring, at every other community consultation it was explained why land title was verified and that the project in no way jeopardises producers’ land ownership.

1.3.2.6 **Timelines**
This initial year was a valuable learning experience as we gained a better understanding of the time required for the various steps within the annual cycle. Having completing the cycle, we have a much clearer vision of the tasks required for each month, year, and quarter. A concrete step that we will take place this coming year is:

**Developing annual projects in parallel** – Along with a scale increase, we will start much earlier with the incoming producers, which will be enabled through experience-based organizational efficiencies and technological improvements. We will start developing the 2012 project before the end of 2011.

In general, the challenges were caused because it was the first year, the team was small, there were many fixed one-time tasks for the certification, and we had to concentrate on other aspects of our business, including guaranteeing sales, developing our communications through the website and other media, and applying for the Plan Vivo Standard. This year, we will concentrate more on refining the operations to avoid a reoccurrence of aforementioned challenges, and to prepare our team as we scale up the project size.
2. Activities, total project size and participation

2.1 Detail of technical specification
The technical specification used for this pilot project year, Mixed Species Forest Plantation, reflects the planting and intensive management of mixed species, multi-purpose forest plantations. All of the selected species are or were commonly found within the municipality of San Juan de Limay and are native to the region. The plantations consist of alternating rows of fast growing firewood species and longer-lived hardwood species. The firewood species are nitrogen fixing and will be coppiced at an early age, providing an early harvest of firewood and high-protein fodder while fertilizing the soil. Due to the spacing between rows, there is enough room for the firewood shoots to grow back for a second harvest before being crowded out by the hardwood species. The hardwood species are of variable growth rates and shapes allowing for various thinnings before the entire stand reaches maturity. As a pilot project year, this technical specification was the only option available.

2.2 Caveats to technical specification
During the implementation of the project, and through the creation of the technical specification, it was determined that a modification was necessary to the tree species composition. Originally, the plan called for the use of seven different species. The planting methodology for these species called for alternating rows of hardwood species. In the implementation of this methodology, it was increasingly difficult to communicate the layout to the planters due to its complicated nature. Therefore, it was decided that we would drop one of the species. This reduction provides the same economic and environmental benefits as the group of seven species originally chosen yet greatly reduced the complexity of the planting methodology.

2.3 Summary of participation and project in 2010
- The total number of producers or producer groups with registered sale agreements: 22
- The total area covered by the project in hectares: 41.70. All of the hectares in this year were classified under one type of technical specification, the Mixed Species Forest Plantation.

2.4 New technical specification in development
A new technical specification is currently under development for living fences and we expect to submit it to the Plan Vivo Foundation for review in early summer 2011.
3. Sales of Plan Vivo Certificates

3.1 Carbon sales of the project to date

Below the tables show the 2010 sales and how they have been distributed among the organization and its partners.

<table>
<thead>
<tr>
<th>Year</th>
<th>Name of buyer/reseller</th>
<th>Amount purchased (tCO2)</th>
<th>Price per certificate (USD/tCO2)*</th>
<th>Total amount received (USD)*</th>
<th>Project (Farmer) Share (%)</th>
<th>Taking Root Share (%)</th>
<th>Certificate Issuance Fee ($0.30 per Certificate)</th>
<th>Registry Fee ($0.05 per Certificate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>PrimaKlima - weltweit- e.V.</td>
<td>11,009</td>
<td>50</td>
<td>$3302.70</td>
<td>50</td>
<td>50</td>
<td>$3302.70</td>
<td>$550.45</td>
</tr>
<tr>
<td>2010</td>
<td>Carbon Advice Group</td>
<td>95</td>
<td>50</td>
<td>$28.50</td>
<td>50</td>
<td>50</td>
<td>$28.50</td>
<td>$4.75</td>
</tr>
<tr>
<td>2010</td>
<td>CLEVEL</td>
<td>650</td>
<td>50</td>
<td>$195.00</td>
<td>50</td>
<td>50</td>
<td>$195.00</td>
<td>$32.50</td>
</tr>
<tr>
<td>2010</td>
<td>Carbon Finance Intel</td>
<td>50</td>
<td>50</td>
<td>$15</td>
<td>50</td>
<td>50</td>
<td>$15</td>
<td>$2.50</td>
</tr>
<tr>
<td>2010</td>
<td>Taking Root</td>
<td>538</td>
<td>50</td>
<td>$161.40</td>
<td>50</td>
<td>50</td>
<td>$161.40</td>
<td>$26.90</td>
</tr>
<tr>
<td>2010</td>
<td>Total</td>
<td>12342</td>
<td>50</td>
<td>$3702.60</td>
<td>50</td>
<td>50</td>
<td>$3702.60</td>
<td>$617.10</td>
</tr>
</tbody>
</table>

*Pricing information removed by the Plan Vivo Foundation for client confidentiality

Through the pilot cycle and the implementation of the project, a number of one time costs were incurred. Additionally, through the learning process of working through Taking Root’s first annual cycle, a few tasks were completed differently than they should normally occur, notably nursery establishment. Due to the additional time required to conduct the biomass surveys for the technical specifications, nursery establishment costs that should normally be incurred by the producers were incurred by Taking Root. These costs amounted to $ 862.65. Additionally, $ 750 will be deposited into the Community Fund for the construction of fuel-efficient fireplaces, expected to be built in the spring of 2011. Payment to producers, nursery costs and fuel-efficient fireplace costs amount to USD $ 35,5546.81 representing 50%. Although this doesn’t quite represent the 60% stated in the Project Document Design, it is a unique occurrence and the 2011 season sales have already been taking place at the 60% ratio target.
### Submission for Plan Vivo Certificate Issuance

<table>
<thead>
<tr>
<th>Buyer</th>
<th>Sale (tCO2)</th>
<th>Buyer Price ($/ton)</th>
<th>Location (LCCP = Limay Community Carbon Project)</th>
<th>Producers &amp; PV numbers</th>
<th>Description</th>
<th>System</th>
<th>Area (ha)</th>
<th>Price to producer ($)</th>
<th>Monitored? (Y/N)</th>
<th>Payment due</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010 weighted sales</td>
<td>505.7</td>
<td>2781.35</td>
<td>LCCP – Las Brisas</td>
<td>Pablo Cruz</td>
<td>Mixed Species Forest Plantation</td>
<td>1.71</td>
<td>1390.67</td>
<td>Y</td>
<td>Y</td>
<td></td>
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<tr>
<td>2010 weighted sales</td>
<td>451.5</td>
<td>2482.98</td>
<td>LCCP – Parsila</td>
<td>Jose Heraldo Torres</td>
<td>Mixed Species Forest Plantation</td>
<td>1.53</td>
<td>1241.49</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2010 weighted sales</td>
<td>496.5</td>
<td>2730.76</td>
<td>LCCP – Las Brisas</td>
<td>Felix de Jesus Hernandez Rodriguez</td>
<td>Mixed Species Forest Plantation</td>
<td>1.68</td>
<td>1365.38</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2010 weighted sales</td>
<td>611.0</td>
<td>3360.24</td>
<td>LCCP – Parsila</td>
<td>Osman Antonio Cruz Reyes</td>
<td>Mixed Species Forest Plantation</td>
<td>2.06</td>
<td>1680.12</td>
<td>N</td>
<td>N</td>
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<tr>
<td>2010 weighted sales</td>
<td>444.9</td>
<td>2447.08</td>
<td>LCCP - Parsila</td>
<td>Josefa Calderon Ordoñez</td>
<td>Mixed Species Forest Plantation</td>
<td>1.50</td>
<td>1223.54</td>
<td>Y</td>
<td>Y</td>
<td></td>
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<tr>
<td>2010 weighted sales</td>
<td>1340.6</td>
<td>7373.47</td>
<td>LCCP - Parsila</td>
<td>Juan Martinez Cruz</td>
<td>Mixed Species Forest Plantation</td>
<td>4.53</td>
<td>3686.74</td>
<td>Y</td>
<td>Y</td>
<td></td>
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<tr>
<td>2010 weighted sales</td>
<td>929.9</td>
<td>5114.59</td>
<td>LCCP – Parsila</td>
<td>Horacio Suarez Cruz</td>
<td>Mixed Species Forest Plantation</td>
<td>3.14</td>
<td>2557.30</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2010 weighted sales</td>
<td>1006.0</td>
<td>5532.83</td>
<td>LCCP – Las Brisas</td>
<td>Joaquin Benavidez Martinez</td>
<td>Mixed Species Forest Plantation</td>
<td>3.40</td>
<td>2766.42</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2010 weighted sales</td>
<td>414.8</td>
<td>2281.18</td>
<td>LCCP - Plantanares</td>
<td>Juan Calderon Montalvan</td>
<td>Mixed Species Forest Plantation</td>
<td>1.40</td>
<td>1140.59</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2010 weighted sales</td>
<td>846.2</td>
<td>4654.09</td>
<td>LCCP - Plantanares</td>
<td>Oscar Marcial Bellorin Vanegas</td>
<td>Mixed Species Forest Plantation</td>
<td>2.86</td>
<td>2327.05</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2010 weighted sales</td>
<td>481.4</td>
<td>2647.81</td>
<td>LCCP – Las Brisas</td>
<td>Juan Antonio Garmendia Hernandez</td>
<td>Mixed Species Forest Plantation</td>
<td>1.63</td>
<td>1323.91</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2010 weighted sales</td>
<td>880.7</td>
<td>4843.94</td>
<td>LCCP - Santana</td>
<td>Virgilio Sanchez Martinez</td>
<td>Mixed Species Forest Plantation</td>
<td>2.98</td>
<td>2421.97</td>
<td>Y</td>
<td>Y</td>
<td></td>
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<tr>
<td>2010 weighted sales</td>
<td>612.7</td>
<td>3370.01</td>
<td>LCCP - Plantanares</td>
<td>Marcial Rodriguez Gonzalez</td>
<td>Mixed Species Forest Plantation</td>
<td>2.07</td>
<td>1685.00</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2010 weighted sales</td>
<td>264.2</td>
<td>1453.25</td>
<td>LCCP – Las Beredas</td>
<td>Zayda Elizabeth Blandon Mendoza</td>
<td>Mixed Species Forest Plantation</td>
<td>0.89</td>
<td>726.63</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2010 weighted sales</td>
<td>285.6</td>
<td>1570.72</td>
<td>LCCP – Plantanares</td>
<td>Carlos Perez Blandon</td>
<td>Mixed Species Forest Plantation</td>
<td>0.96</td>
<td>785.36</td>
<td>Y</td>
<td>Y</td>
<td></td>
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<tr>
<td>2010 weighted sales</td>
<td>788.8</td>
<td>4338.43</td>
<td>LCCP – Parsila</td>
<td>Angela Martinez Perez</td>
<td>Mixed Species Forest Plantation</td>
<td>2.66</td>
<td>2169.22</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2010 weighted sales</td>
<td>288.3</td>
<td>1585.61</td>
<td>LCCP - Parsila</td>
<td>Alexi Remberto Lanuza Jarquin</td>
<td>Mixed Species Forest Plantation</td>
<td>0.97</td>
<td>792.81</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2010 weighted sales</td>
<td>468.6</td>
<td>2577.40</td>
<td>LCCP – La Grecia</td>
<td>Noel Jose Lopez Montenegro</td>
<td>Mixed Species Forest Plantation</td>
<td>1.58</td>
<td>1288.70</td>
<td>Y</td>
<td>Y</td>
<td></td>
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<tr>
<td>2010 weighted sales</td>
<td>281.5</td>
<td>1548.33</td>
<td>LCCP - Plantanares</td>
<td>Pedro Angel Lanusa Montalvan</td>
<td>Mixed Species Forest Plantation</td>
<td>0.95</td>
<td>774.17</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>2010 weighted sales</td>
<td>387.2</td>
<td>2129.37</td>
<td>LCCP - Platanares</td>
<td>Santos Efrain Garmendia Espinoza</td>
<td>Mixed Species Forest Plantation</td>
<td>1.31</td>
<td>1064.69</td>
<td>N</td>
<td>N</td>
<td></td>
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<tr>
<td>---------------------</td>
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</tr>
<tr>
<td>2010 weighted sales</td>
<td>337.0</td>
<td>1853.75</td>
<td>LCCP - Parsila</td>
<td>Luis Enrique Lanuza Montalvan</td>
<td>Mixed Species Forest Plantation</td>
<td>1.14</td>
<td>926.87</td>
<td>N</td>
<td>N</td>
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<tr>
<td>2010 weighted sales</td>
<td>219.2</td>
<td>1205.79</td>
<td>LCCP - Parsila</td>
<td>Julian Adolfo Lanuza Gomez</td>
<td>Mixed Species Forest Plantation</td>
<td>0.74</td>
<td>602.90</td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
5. Allocation of sales to producers

5.1 Summary of sales to producers
The project allocates credits to buyers on a first come first serve basis. The land of the 22 farmers has been allocated to a buyer. This represents a total hectarage of 41.70. From this hectarage, we were able to sell a total of 12342 tons.

5.2 Selection of producers
We originally chose the project location for a number of factors. First, a technician at our partner organization, APROEDIN, recommended that we work within the community of Limay. He is from the community and recognized that there would be a demand for our services. The specific producers were picked due to proximity to the town centre, the elevation of their plots, and the general quality of the plot soil. While we did not perform formal testing of the soils this year, we used the local knowledge of our technician and the participating producers to maximize the quality of the plots that we would grow on.

5.3 Community choice
In retrospect, our choice of community was an excellent one on a macro level. During the year, we received full and positive support from the town hall, members of the community and the inhabitants of the area at large.

5.4 Disputes
There have been no disputes in regards to the project or payments. As of writing, the contracts have just been given out to the farmers.
6. Summary of monitoring results

6.1 Monitoring overview
The monitoring process this year involved taking a random sampling of 10% of each producers’ parcel through a series of 6m radius plots. We counted the number of trees encountered from the plot centre. The area of each plot is 113 m², therefore there should be at least 15 trees per plot.

This year’s payments were based on plantings. If the producer planted at least 50% of his stated land, he receives full payment. If he planted 40-50% of the trees, he gets half. Below that, no payment is made until the planting is completed the following year.

6.2 Unsuccessful monitoring of producers
There were four producers in our project who were unable to plant this year: Osman Cruz, Santos Garmendia, Luis Lanuza, and Julian Lanuza. This was due to weather, late entry and inaccessibility to these parcels during the planting season. This year we withheld their first payment. We will work closely with them next year to ensure that they are up to target during the next growing season. Next year, when the planting is verified, we will hand over payment for that year.

6.3 Improvements to the monitoring process
There were significant improvements to the monitoring process since its inception. We now are able to automate the random sampling of the plots. The transfer of the plot information now moves digitally from ArcGIS to the monitoring sheets that the technicians use in the field. Also, our technical system enables us to do analysis by producer, parcel, and species. This will bolster our planning in the future. Additionally, we had time to do adequate testing of the system and training of the technicians in the methodology. This system was designed for the anticipated volume increase of future years.

6.4 Future monitoring
Next year, when the trees have had time to grow, we will take diameter at breast height (DBH) and height measurements of the trees to monitor for adequate growth. We will also be able to estimate the survival rate of the trees through this method.

Due to increasing volume, we plan to implement an entirely electronic system of monitoring. This will remove the need for the producer to write and transcribe the data in the project. A purely digital system will add to efficiency and accuracy of the data collected. Due to the capital costs of the equipment and the need to program the software and train the technicians, this project probably will not come online until the planting season of 2012 or 2013.

6.5 Problems in monitoring
This being the first year, we came across no systemic problems in the monitoring process.
7. Payments to producers

7.1 Payments to producers
As of writing, we have made around half of the payment for 2010 to the producers. Delay for the full payment is due to setbacks in certificate issuance, which allows Taking Root to receive its full payment for the offsets. Also, because of a delay in the approval of the technical specifications, until recently we were unable to determine the total carbon benefit per hectare, which determined payment amount. Last autumn, Taking Root decided to front about half of the estimated payment to the producers. This payment was important for ensuring trust in the project. The rest of the payment will be made as soon as we receive the carbon payments for the year of 2010.

The following is a table of the total producer payments for this first year. These payments include the gross payment minus the payment for the loans to the producers.

<table>
<thead>
<tr>
<th>Plan Vivo Number</th>
<th>Full Name</th>
<th>1/2 Payment Year 1</th>
<th>Full Payment Year 1</th>
<th>Remaining Payment Year 1</th>
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<tbody>
<tr>
<td>110001</td>
<td>Carlos Perez Blandon</td>
<td>$56.22</td>
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<td>110002</td>
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<td>110003</td>
<td>Joaquin Benavidez Martinez</td>
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<td>110004</td>
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<tr>
<td>110007</td>
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<tr>
<td>110009</td>
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<tr>
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<tr>
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<td>110013</td>
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<tr>
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<tr>
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<td>Jose Heraldo Torres</td>
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</tbody>
</table>

7.2 Future improvements

7.2.1 Spreading out the payments
There has been feedback from the community that the producers want the payments in two parts in the earlier years. Spreading out the payments during the year will create a more constant cash flow for the producers. As mentioned, we have paid one of two instalments for the year of 2010, which is consistent with this request.
7.2.2 Changes in loan policy

Originally, we were only going to give the producers loans for fencing. However, early into the planting, we realized that many of them had not fully cleared their lands due to the timing of the project. We therefore gave them loans to do land clearing alongside the loans for fencing. Next year, as the earlier timing of the project will give the producers more time to clear the land in the winter months, we will not give them loans for clearing the land. Instead, we will offer the producers loans to hire help during planting, since the window of opportunity in the planting season is short.
8. Community participation in project governance

8.1 Community participation
The community participation has been highly encouraging this year. Through multiple town hall meetings, our partnership with APRODEIN, and open communication between Taking Root and the producers, we have had little obstacles in communicating the project to potential producers and in moving forward the project for our current producers.

8.2 Dialogue with community leaders
We continue to hold roundtables and dialogues with community leaders in Limay. The roundtables have gone extremely well and have only reinforced our strong relationship with the community. All of the meetings’ attendants and notes have been documented.

8.3 Relationship with Nicaraguan sister organization
The most critical aspect of operations is our relationship with our sister organization APRODEIN. Their three staff members have provided a crucial service to our organization by managing and leading the operations in Nicaragua. Our community technician, Ronal Ignacio Martinez Centeno, lives in Las Brisas, which creating beneficial social ties between the community and Taking Root. Elvin Castellon continues to excel in leading the organization and is a critical link managing operations on the ground. As mentioned before, the newest member of our team, Elsa Gonzales, has provided an excellent addition. She is college educated and has proved to be proficient in fieldwork and informatics.

We expect to hire two new members to the Nicaraguan team in 2011, as our volume will grow significantly. We have also hired people from the community part time for various projects, including making stock video footage, managing the nursery, and general planting and clearing.

8.4 Information transparency
Lastly, through multiple communications, we have ensured that all financial and other information created through the development of the Limay Community Carbon Project is available to any of the project producers. Additionally, statements of all expenditures for the project within Nicaragua are provided to the mayor’s office in Limay.
9. Social and environmental benefits

Taking Root continues to move forward with its sustainable development goals. This is done on three fronts: economic development, local environment and global environment.

9.1 Economic development
We are promoting income diversification in the community within which we work, San Juan de Limay. This year, we enrolled twenty-two farmers into the project, adding a total of USD $33,937.86 to the community over the life of the project. The average payment to each farmer over the ten-year period is $1542.63. This is a large sum that will improve the standard of living for the producers and their families.

9.2 Local environmental development
We have been planting in one specific watershed in northern Nicaragua. This watershed is vital to Nicaragua’s ecological viability as it drains into one of the regions most critical estuaries, El Estero Real. Considering we are planting in a highly seasonal climate, the project’s trees should help mitigate water runoff during the rainy season, and provide water storage benefits during the dry season.

9.3 Global climate change mitigation
Through planting trees, we provide a natural pump to sequester carbon dioxide from the atmosphere. We calculate that the 41.7 hectares planted this year will sequester 12342.4 tons from the atmosphere over the project’s 50-year lifespan.

9.4 Indoor environmental health
Lastly, we are implementing a community stove program that will bring clean burning stoves to the project participants. These stoves will reduce the demand for firewood in the surrounding landscape, reduce the need for gathering wood, and release fewer pollutants into the homes of the participants. This last benefit should provide a significant improvement to the health of the families.
10. **Breakdown of operational costs**

<table>
<thead>
<tr>
<th>CANADA</th>
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<tbody>
<tr>
<td>Human resources</td>
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<tr>
<td>Sales expenses</td>
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<tr>
<td>Production expenses</td>
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<td>Administration expenses</td>
<td>$ 1,699.19</td>
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<td>Financial expenses</td>
<td>$ 3,421.00</td>
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</table>

<table>
<thead>
<tr>
<th>NICARAGUA</th>
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<tbody>
<tr>
<td>Salaries</td>
<td>$ 8,039.55</td>
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<tr>
<td>Production expenses</td>
<td>$ 4,615.08</td>
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<tr>
<td>Validation</td>
<td>$ 5549.40</td>
</tr>
<tr>
<td>Nurseries</td>
<td>$ 862.65</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$ 100,217.12</strong></td>
</tr>
</tbody>
</table>

Received in grants $ 35,738.07
11. Improvements and future development

11.1 Improvements
Through increased institutional experience, improved technology, and a larger staff, Taking Root is excited to broaden the scale of its project in the coming years. There are multiple improvements that we have made to our organizational capacity over the past year. This centers around two focal points, technology and human capacity.

11.1.1 Technological improvements
From a technological role, we have made improvements to every step of the ground operations. When we finish recruiting producers, we will be able to process their land areas and locations in a matter of days, which will allow us to plan for sales and nursery placement. Such an automated system allows for quick changes to the input data without sacrificing a lot of staff time. Later on, when monitoring is required, using a combination of software technologies, we will be able to automate plot selection and data input in many fewer steps that it took us for this year’s monitoring. We are very confident that these new technologies will enable us to increase scale without adding much extra staff time in data processing.

11.1.2 Human capacity improvements
We have also added some excellent additions to the team that will help Taking Root grow and evolve. David Baumann is our technical analyst who has provided his expertise in the automation of our systems. He also has a policy background to help bring insight to modern day carbon and climate change policy issues. Elsa Gonzales, a new member of the team in Nicaragua has provided an essential component to the APRODEIN team. She has excellent computer and field skills that compliment those skills of already existing team members. If we grow at the expected rate, we will consider hiring another staff member in Montreal over the coming year.

11.2 Future developments

11.2.1 Living fences – A new technical specification
Taking Root will introduce a new technical specification for next year’s project, called Living Fences. It will conform to the basic layout of this year’s technical specification, with the addition of fast growing trees along the parcel perimeter that will serve as fence posts. This will not only add to the carbon storage density of the technical specification, but will lower costs to the farmers from reduced materials expenditures.

11.2.2 Caoba College project
We are also eager to see how the college project (mentioned in Section 1.1.3 of the report) creates lasting ties between our communities and helps educate the students on global environmental and social issues. Taking Root has always had an educational component in its mission; therefore we are quite thrilled to continue shaping and expanding this program into the future.
11.2.3 Scaling up
We are pleased to announce that we hope to more than double our current hectarage from 40 to 90 hectares for next year’s planting season. We will make this increase after observing the increasing demand from producers and buyers alike, and because we are confident that our organization is ready for such a change in scale.
Thank you for your support and help in our first year of the Limay Community Carbon Project. We at Taking Root are very thrilled to continue working with Plan Vivo in the coming years.

Sincerely,

The Taking Root Team

Kahlil Baker – Co-Executive Director
Samuel Gervais - Co-Executive Director
David Baumann - Technical and Policy Analyst