



INSIGHTS FROM THE FIELD: Forests for Climate and Timber

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SUMMARY

- The Carbon Canopy is a novel partnership among companies, landowners, and nongovernmental organizations (NGOs) that seeks to leverage markets for ecosystem services to increase the area of southern U.S. forests certified as sustainably managed. The partnership aspires to sustain southern forests for their economic, climate, water, and other benefits.
- The Carbon Canopy's first focus has been on linking forest carbon offset generation and certified forest management, wherein carbon offset revenue is designed to compensate woodland owners for the cost of certification and provide an attractive new revenue stream.
- The Carbon Canopy's experience to date provides a number of insights for other organizations seeking to build and expand markets for forest carbon offsets linked with forest certification. These insights were gleaned from the authors' observations as well as interviews with several members of the Carbon Canopy partnership, including landowners, buyers, and NGOs. These insights apply to building demand, ensuring supply, and creating the transactional infrastructure for forest carbon offsets and certified saw timber or wood fiber.
- To build robust demand, companies, NGOs, and other organizations seeking to replicate the approach of combining forest carbon offsets and certification should—
 - Actively recruit buyers; and
 - Secure an anchor buyer early on.
- To ensure sufficient supply of offsets and certified timber, these organizations should—
 - Invest in woodland owner education;
 - Make the business case to woodland owners;
 - Find upfront financing; and
 - Be sure to engage all parties with claims on the land.
- To create an efficient transactional infrastructure, these organizations should—
 - Select forest management and carbon offset certification standards early on;
 - Select standards that are high quality and that facilitate market participation; and
 - Leverage existing resources and landowner networks.

This brief is designed to inform companies, NGOs, and other organizations interested in developing or participating in similar programs that link forest certification with carbon offsets and thereby help increase the effectiveness and efficiency of their efforts.

CLIMATE AND TIMBER, TOO

In *Southern Forests for the Future* (Hanson, Yonavjak, Clarke, Minnemeyer, Boisrobert, Leach, and Schleeweis, 2010), the World Resources Institute (WRI) profiled how the forests of the southern United States yield climate benefits. When managed well or left in their natural state, forests sequester and store large amounts of carbon. In 2009, U.S. forests absorbed an estimated 863 million metric tons of carbon dioxide, an

amount equal to approximately 13 percent of the country's gross greenhouse gas emissions (U.S. Environmental Protection Agency, 2011).¹ Carbon sequestered by managed forests in the South² specifically account for about a third of the carbon storage capacity of continental U.S. forests (Jose, 2007). Forest conservation and appropriate management practices could increase the role of these forests in sequestering carbon dioxide.

At the same time, southern U.S. forests are the nation's "wood basket." Although they comprise just 2 percent of the planet's total forest cover, southern U.S. forests are disproportionately productive. They generate 18 percent of the world's pulpwood for paper and paper-related products and 7 percent of its industrial roundwood (Hanson et al., 2010). In 2007, the value of saw timber, veneer logs, poles, and pulpwood harvested from southern forests was nearly \$12 billion (Hanson et al., 2010).

However, only a small share of the 214 million acres of southern U.S. forests is certified as meeting sustainable forest management standards. As of mid-2009, approximately 20 million acres (10 percent of southern forests) were certified by the Sustainable Forestry Initiative (SFI), 13 million acres (6.5 percent of southern forests) by the American Tree Farm System, and 3 million acres (1.5 percent of southern forests) by the Forest Stewardship Council (FSC).³ This low penetration may be due in part to many forest owners lacking information about certification, being uncertain of its financial benefits, or finding the cost of becoming certified—the assessment and monitoring fees, cost of preparing management plans, changes in annual yield per acre,⁴ and other expenses—economically prohibitive.

Innovative pilot projects, which are profiled in this issue brief, are being developed by the Carbon Canopy, a partnership among companies, landowners, and NGOs that seeks to increase certified acreage in the South by linking forest management certification with carbon markets. Under the Carbon Canopy, landowners who increase the amount of carbon stored on their lands through adopting specific forest management practices—such as extending the period of time between harvests or avoiding forest stock depletion—earn revenue from generating and selling voluntary carbon offsets. The revenue, in turn, is designed to finance the cost of becoming certified and become an income stream in its own right.

This brief summarizes insights gleaned to date from the Carbon Canopy's pilot projects. It is designed to inform companies, NGOs, and other organizations interested in developing or participating in similar programs that link forest certification and carbon offsets and thereby help increase the effectiveness and efficiency of their efforts. These insights were gleaned from the authors' observations as well as interviews with several members of the Carbon Canopy partnership, including landowners, buyers, and NGOs.

This brief is part of a series about innovative financial mechanisms designed to help private landowners in the southern United States sustain their forests (Box 1). Readers interested

in more detailed information about forest carbon offsets and about forest certification can refer to *Forests for Carbon* (Yonajak, Swedeen, and Talberth, 2011) and the *Sustainable Procurement of Wood and Paper-based Products: Version 2* (Nogueron, Laestadius, and Lawson, 2011), respectively.

THE CARBON CANOPY AND ITS PILOT PROJECTS

Launched in 2009, the Carbon Canopy is an initiative that seeks to leverage markets for ecosystem services to increase the amount of southern U.S. forests certified as sustainably managed as well as conserved for climate, water, erosion control, and other benefits. The initiative began by focusing on markets for carbon sequestration, piloting forest carbon projects in which woodland owners improve their forest management practices to generate carbon offsets that meet Climate Action Reserve (CAR) and Californian Air Resources Board (ARB) standards⁵ and, at the same time, to yield forest products that, in this case, meet FSC-certification criteria.⁶ The carbon offset revenue is designed to compensate woodland owners for the cost of certification and provide a substantial new revenue stream.

Carbon Canopy chose to pursue certification according to the FSC standard and the CAR and ARB standards. The general approach of linking carbon offset payments with financing

Box 1

About the Southern Forests for the Future Incentives Series

This series follows and builds upon *Southern Forests for the Future*, a publication that profiles the forests of the southern United States, providing data, maps, and other information about their distribution and makeup, condition, and trends. It explores such things as the following questions: Why are southern forests important? What is their history? What factors are likely to have an impact on the quantity and quality of these forests going forward?

The publication also outlines a wide variety of measures for conserving and sustainably managing these forests so that they can continue to provide a wide variety of benefits—or "ecosystem services" such as water filtration and outdoor recreation opportunities—to people, communities, and businesses. The *Southern Forests for the Future Incentives Series* (www.seesouthernforests.org/issue-brief) delves deeper into some of these measures.

For additional information about southern U.S. forests, visit www.SeeSouthernForests.org. Developed by WRI, this interactive site provides a wide range of information about southern forests, including current and historic satellite images that allow users to zoom in on areas of interest, overlay maps showing selected forest features and drivers of change, historic forest photos, and case studies of innovative approaches for sustaining forests in the region.

forest product certification, however, could be applicable to other standards.

The Carbon Canopy brings together companies, private woodland owners, and NGOs to achieve this vision. Participants include Staples, the Coca-Cola Company, Columbia Forest Products, Conservation Forestry LLC, Domtar Corporation, The Forestland Group, The Home Depot, Interface Inc., Dogwood Alliance, Pacific Forest Trust, Environmental Defense Fund, Green Press Initiative, Keystone Center, Rainforest Alliance, and the World Resources Institute. Participants meet regularly to agree on goals, learn the specifics about timber certification and carbon project development, work through carbon project development processes, meet prospective buyers and suppliers, and more. For additional information, visit www.carboncanopy.com.

Three pilot projects, each covering several thousand acres, are under way in the Appalachian regions of North Carolina, Tennessee, and Virginia and are scheduled for completion in 2012. One pilot is occurring on land owned by a timber investment management company. Two pilots are occurring on lands owned by nonindustrial private forest landowners that are being aggregated for FSC certification by forest product companies that purchase timber from those landowners.

The pilot project landowners have prepared forest management plans that allow them to become certified and to generate carbon offsets in compliance with CAR/ARB standards. A non-profit carbon project developer is working with landowners to ensure that they meet the carbon offset protocol requirements. Foresters from one company are working with small woodland owners to ensure that they meet certification standards as part of their group certificate. Larger landowners have their own FSC certification programs and work with independent third-party certifiers to maintain their certificate.

In some cases, the forest product companies have financed the up-front certification costs for the landowners with expectations that the former will recoup the expenses when products go to market. Several corporate buyers of the carbon credits have already been lined up for the first round of pilot projects. These companies are agreeing to purchase the credits in order to help meet their own voluntary greenhouse gas emission reduction targets.

INSIGHTS TO DATE

The experience of the Carbon Canopy group to date provides a number of insights for other organizations seeking to build



Source: *The Carbon Canopy*

One of the forests undergoing a combined carbon offset/FSC certification pilot is this mixed hardwood property in Virginia.

and/or participate in transactions and markets for forest carbon offsets that help finance increased certification of working forests. These insights fall into the three elements of a functioning market: demand, supply, and transactional infrastructure.

Demand

Without sufficient demand or willingness to pay for an ecosystem service that has been a free public good, supply will often not materialize, and transactional infrastructure can be superfluous. Jump-starting demand for the carbon sequestered by the pilot projects has been a critical step in giving private landowners assurance that shifting to more sustainable forest management practices will be financially rewarded. The following Carbon Canopy insights offer guidance on how to generate demand for the combination of forest carbon offsets and certified forest products:

- *Actively recruit buyers.* For novel environmental products such as carbon offsets or innovative incentives such as linking certified timber and carbon benefits together, the potential pool of buyers is often small. Therefore, organizations seeking to replicate Carbon Canopy pilot projects should proactively identify and approach entities with a potential business case for purchasing either forest carbon offsets, certified forest products, or both.

One set of prospective buyers is companies that have established voluntary targets for reducing their greenhouse gas emissions or for buying certified forest products. Another set is universities that have done the same. A business case may also exist for entities operating in regions that



Source: Columbia Forest Products

Another forest participating in the Carbon Canopy pilots is this 3,100-acre tract in North Carolina.

have mandatory greenhouse gas emission reduction targets for which forest carbon offsets are an eligible form of compliance, such as utilities in the California greenhouse gas emission reduction program now being put in place. Yonavjak, Swedeen, and Talberth (2011) profile other types of prospective buyers and their business cases.

A factor to consider when recruiting buyers is geographic preferences. Some companies and universities have strong ties to a particular geographic region and may have a preference for supporting carbon offsets or certified forest products linked to that region. For instance, most of the companies participating in the Carbon Canopy—the Coca-Cola Company, Columbia Forest Products, Domtar, The Home Depot, Interface, Staples—have strong operational ties to the southern United States.

- *Secure an anchor buyer early on.* Lining up a high-profile initial or anchor buyer of the carbon offsets, the certified forest products, or both can help in several ways. First, it can attract other prospective buyers to follow suit; there is safety in numbers. Second, it can give prospective suppliers confidence that there will be demand for their products; their efforts to generate offsets and/or become certified will be financially rewarded in the end. For example, early on in the formation of the Carbon Canopy, Staples announced that it would purchase a sizeable share of the carbon offsets generated by the first pilot. This commitment gave the Carbon Canopy a strong foundation on which to build further demand and attract woodland owners interested in supplying carbon offsets.

Supply

The following insights were gleaned from the Carbon Canopy for catalyzing a sufficient supply of forestland providing carbon offsets, combined with certified timber/wood fiber production:

- *Invest in woodland owner education.* Investing a significant amount of time in educating candidate woodland owners about sustainable forest management certification and forest carbon offsets can result in greater participation in approaches like that pursued by the Carbon Canopy. Important topics to address include the process for becoming a certified producer of timber (or fiber) and developing a verifiable carbon project, the type of technical assistance available, costs, woodland management implications, agreement terms and conditions, and information about who else is participating. One effective practice when interacting with woodland owners is to leverage woodland owner networks (see “Transactional Infrastructure” section below), because approximately 60 percent of southern forests are owned by more than 4 million nonindustrial private landowners (Hanson et al., 2010). These networks can facilitate person-to-person interaction, an important feature of educating woodland owners (Yonavjak and Gartner, 2011).
- *Make the business case to woodland owners.* Just as buyers need a business case for purchasing certified timber and carbon offsets, woodland owners need a convincing business case to supply certified forest products and carbon offsets. The Carbon Canopy experience suggests that there are at least three aspects to the business case for suppliers.

First, woodland owners need to see that there will be demand for their products. Regarding forest carbon offsets, up-front commitments of offset purchases by a subset of Carbon Canopy participants strengthened the business case. Therefore, in the Carbon Canopy experience, prospective offset suppliers knew that there would be buyers. Using the standard accepted by the compliance market in California also gave landowners extra assurance that there is demand beyond the initial Carbon Canopy buyers and that prices could be bolstered by a larger set of market participants. Regarding the business case for supplying certified forest products, a subset of Carbon Canopy buyer participants expressed interest in increasing their purchase of certified paper because they were having a difficult time finding sufficient supply from the southern United States.

Second, woodland owners need to become comfortable with any encumbrances that limit options on future land use. In the case of the Carbon Canopy, the most salient

encumbrances arise from carbon offset generation. For instance, in order for verified carbon offsets to be generated, the CAR standard requires the woodland to be placed in a permanent working forest conservation easement or under a 100-year contractual commitment period (see Yonavjak, Swedeen, and Talberth, 2011, for details).

Third, woodland owners need to see that the financial return is attractive. As profiled in *Forests for Carbon* (Yonavjak, Swedeen, and Talberth, 2011), as carbon offset prices exceed \$20–\$25 per metric ton of carbon dioxide, the value starts to look like an attractive part of an investment portfolio that includes sustainable timber harvesting in addition to carbon sequestration. Prices exceeding \$30 per metric ton start to compete with current timber values in some locales in the South for mixed hardwood lumber. For nonindustrial landowners who do not need or desire to maximize timber revenue, even \$10 per metric ton can provide income that would otherwise go uncaptured and could help pay for the costs of retaining the land and conducting sustainable forestry.

One feature to note is that collaborating with NGOs and other like-minded landowners can help improve the net financial benefits by lowering costs. For instance, participants in the Carbon Canopy benefited from free management plans and technical assistance for carbon project development. In some instances, up-front financing (see below) for forest certification also was made available.

- *Find upfront financing.* In some cases, nonindustrial private woodland owners may not be able to afford the up-front costs of certifying the timber, fiber, and/or carbon that their forests generate. One way to address this issue is to have a larger entity—such as an industrial forest products company, investor, or other financial institution—finance these up-front costs on behalf of woodland owners. The larger entity then later recoups its investment once the certified timber, fiber, and/or verified carbon offsets are sold. For example, in one of the Carbon Canopy pilots, a forest products company financed the transactional costs of securing FSC certification of the forests of some of their independent suppliers.
- *Engage with all legal claims on the land.* For example, some tracts of forest in the South have underlying mineral rights that are the dominant estate and therefore must be considered if the forest is to be certified to generate carbon offsets. In these cases, the mineral estate owners need to be brought into the conversation early on because their

perspectives and plans will affect the ability of the forest manager to satisfy the 100+ year management agreement required by the CAR standard.

Transactional infrastructure

In addition to demand and supply, a market needs efficient transactional infrastructure if it is to be robust—that is, one that has a large number of transactions leading to an increased number of sustainably managed private forest acres. The following insights were gained from the Carbon Canopy experience on this aspect of market development:

- *Select certification standards early on.* The Carbon Canopy approach relies on a forest's timber or fiber being certified as meeting sustainability performance standards and on its carbon offsets using the highest quality protocol available. A number of certification standards exist for forest products. For example, sustainable forest management certification systems applicable to southern U.S. forests include FSC, SFI,⁷ and the American Tree Farm System,⁸ among others (see Nogueron, Laestadius, and Lawson, 2011, for details about various certification systems).

Voluntary forest carbon offset standards include the CAR, the Voluntary Carbon Standard (VCS), the American Carbon Registry (ACR), and The Gold Standard. In addition, California's regulatory protocol is also available and applicable to forests in the continental United States (Yonavjak, Swedeen, and Talberth, 2011). Selecting which standard(s) to use early in the process helps focus subsequent activity—saving time—as these standards determine a whole range of issues including forest management practices,⁹ length of commitments, verification and monitoring protocols, and other features that affect eligibility and economics.

- *Select “high quality” standards.* Selecting standards for both forest product certification and forest carbon offsets that have high performance thresholds—and thus are generally recognized as being of “high quality”—offers several advantages.

First, it can meet specific buyer requests. Many prospective buyers of timber, paper, and/or forest carbon offsets want products that meet high sustainability criteria or are certified to a specific certification standard. For instance, several Carbon Canopy participants wanted FSC certified timber and/or paper.

Second, forest carbon offsets that meet high-threshold standards are more likely to become eligible in compliance markets. For instance, the Carbon Canopy chose to have the

forest carbon offsets developed and verified according to CAR standards because landowner participants wanted the option of selling into the upcoming California compliance greenhouse gas emissions market. The CAR protocol is accepted for early action credits in the California compliance market. Landowners can also now directly use California's regulatory protocol (which is very similar to the CAR).¹⁰

Third, buying or supplying forest products and forest carbon offsets recognized as having met stringent performance thresholds reduces the risk of public criticism from external stakeholders.

- *Engage expert assistance.* Engaging experts can help both prospective buyers and suppliers move up the proverbial “learning curve” for novel types of market transactions. For instance, the Carbon Canopy is providing technical expertise on both FSC certification and forest carbon project development.
- *Leverage landowner networks.* Because forest ownership in the U.S. South is highly fragmented (Hanson et al., 2010), the time and cost associated with engaging woodland owners one by one about participating in a Carbon Canopy-style approach can be high. One pragmatic approach to reducing this transaction cost is to leverage existing networks for reaching private woodland owners. For instance, Carbon Canopy members Domtar and Columbia Forest Products have been able to engage numerous woodland owners who were already suppliers of timber and fiber to their manufacturing facilities. Transactional infrastructure in the form of pre-established networks for information sharing, training, and aggregation provided by associations, such as the National Woodland Owners Association,¹¹ are another viable avenue for connecting with a wide number of woodland owners in an efficient manner.

CONCLUDING THOUGHTS

The Carbon Canopy is advancing an innovative approach to bringing financial reward to private woodland owners who sustainably manage their working forests to yield both certified forest products and verified forest carbon offsets. As such, the Carbon Canopy model can offer a “multi-win” opportunity for woodland owners, forest product or carbon offset buyers,

and the environment. Woodland owners can earn a new revenue stream. The availability of certified forest products can grow for forest product buyers while the availability of forest carbon offsets can increase for interested buyers. And people and the environment can enjoy the co-benefits arising from sustainably managed forests such as clean water, recreation, and wildlife habitat.

In short, by working through the necessary supply, demand, and transactional infrastructure components of several pilot projects, the Carbon Canopy is pioneering an approach that can contribute to sustaining southern forests for the future.

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ENDNOTES

1. This figure includes the net million metric tons carbon dioxide equivalent (CO₂e) absorbed by forests (EPA 2011).
2. The series follows the U.S. Forest Service convention of defining "the South" as the states of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.
3. Some of these acres are certified by more than one standard.
4. Which may or may not be lower.
5. Visit <http://www.climateactionreserve.org/how/protocols/forest/> for more information about CAR standards.
6. Visit www.fsc-us.com for more information on the Forest Stewardship Council and FSC standards for certification.
7. For more information, visit www.sfi.org
8. For more information, visit www.treefarmssystem.org
9. While the CAR standard incorporates the management principles inherent in FSC, one added benefit is that it makes landowners manage specifically for carbon sequestration, which is not currently the focus of FSC certification.
10. This rationale was the case when the pilot projects were being developed. As public policies develop, other standards may become eligible for other markets. But ARB is unlikely to accept other standards at this point, given that its own protocol is now available for use, and it will only use one protocol per project type.
11. For more information, visit www.woodlandowners.org

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