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# The Elements of a Credible Forest Carbon Markets Program

A Policy Statement approved by  
Resolution by the National Association  
of State Foresters



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## **Background**

As organizations look for nature-based solutions to address climate change there has been an increasing interest in the ability for trees to remove carbon dioxide (CO<sub>2</sub>) from the air, store the carbon in their woody tissue and release oxygen back into the atmosphere. Recognizing that increasing amounts of atmospheric CO<sub>2</sub> are a major contributor to global warming, a market has evolved wherein forest landowners have the opportunity to monetize the value their properties possess for reducing this pollutant.

Common methods for reducing CO<sub>2</sub> include employing forest practices that avoid or reduce carbon emissions and practices that increase the amount of carbon stored in trees. In addition, there is a recognized value for the carbon stored in wood products that is encouraging greater use of wood over other commonly used materials such as plastics, concrete and steel. There is also an understanding that substantial portions of the carbon stored in a forest are stored in the soil. Increasing soil carbon or reducing soil carbon loss need to be considered as well.

The market opportunity for landowners originates from entities that are looking for ways to offset their carbon emissions, or carbon footprint, by paying others to increase carbon storage or reduce carbon emissions. In some cases these transactions are driven by regulatory provisions that require emitters to either reduce their emissions or seek these offset opportunities, though decisions on the part of a landowner to participate are still voluntary. In an increasing number of cases however, both the decision to pursue offsets and a landowner's decision to participate are voluntary.

Quoting a Morgan Stanley Research posting: "The voluntary carbon offset market is expected to grow from \$2 billion in 2020 to around \$250 billion by 2050."<sup>1</sup> With this expected rapid increase has emerged a diversity of programs to bring carbon offset purchasers together with carbon offset sellers. These programs vary widely in their approach and perceived rigor, causing criticism in some corners as to the validity of carbon markets in general, and particularly forest carbon markets, to actually have a positive influence on global warming.

Forest landowners are key constituents for the members of the National Association of State Foresters. Our members are not arbiters for recommending specific programs. Our role is to inform and assist landowners in making their own decisions and meeting their own goals for their properties. An area where we feel it is important to provide information to landowners and other interested stakeholders is: ***What are the elements of a carbon offset program that represent the most credible, i.e., defensible, approach to showing that a forest carbon project contributes the benefits ascribed***

## **Why Providing This Information is Important**

The United Nation's Intergovernmental Panel on Climate Change has fully documented both the devastating effects of continued global warming and the positive role that forests can play in combatting this problem.<sup>2</sup> For forests to play this important role their positive impacts must be tangible, scientifically

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<sup>1</sup> Morgan Stanley Research Posting at <https://www.morganstanley.com>, April 11, 2023.

<sup>2</sup> IPCC. 2018. Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.

documented, transparently achieved, and also backed by a long-term commitment. Identifying the elements of a credible program are integral to supporting landowner decision-making that achieves these attributes.

Importantly, the carbon offset market represents a potentially valuable revenue stream for landowners – a revenue stream that can encourage landowners to retain their forests rather than convert them to other land uses. Our members support the maintenance and proper management of the nation’s forest resources so that they can provide a multitude of benefits to society including not only climate benefits, but improved air quality, improved water quality and quantity, viable habitat for all forms of wildlife, recreational opportunities and protection of threatened plants, animals and historic resources. Plus, they supply raw materials for the wood-based products we depend on every day, and which are themselves options for greater carbon storage for decades or even centuries.

A revenue stream that encourages landowners to retain and actively manage their forests needs to be sustainable over the long-term. Making carbon offset claims that are later refuted, or cannot be proven, jeopardizes the ability for even highly credible claims to establish a strong market presence; as offset purchasers will not want to be associated with practices that can be labelled “green-washing.” Therefore we feel it is important for landowners to know what elements of an offset program offer the greatest credibility.

### **The Elements of a Credible Program**

Besides landowners who sell offsets and the purchasers who buy them, there are other role players in this market. “Carbon Market Project Developers” work with a landowner to identify what offset opportunities they might benefit from. ***One key element for credibility is that these developers follow protocols that have been accepted by a third-party, independent “Carbon Offset Registry.”*** Project developers may either charge a fee for this service or retain a portion of the offset value for their fee. Brokers may also enter this process to connect sellers and buyers, or if a landowner has the resources, they could conduct the project development themselves.

***In order to offer the greatest credibility, protocols that are developed and approved should:***

- ***Provide a statistically valid measurement of the baseline carbon offset that would be expected on a property in the absence of the carbon project .***
- ***Use available scientific data to estimate the amount of additional offset carbon that the project will sequester compared to the baseline.***
- ***Have a transparent method to account for leakage.***
- ***Clearly identify the length of time offsets project will exist.***
- ***Adjust offset credit amounts through an assessment of the risks associated with occurrences that could lead to reversals (ie – wildfire, insect and disease, hurricanes,***

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Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.). World Meteorological Organization, Geneva, Switzerland. 32 pp. Available online at <https://www.ipcc.ch/sr15/>

*etc); or provide some other method to protect the purchaser from these risks, such as providing a bank of unused credits that can be drawn on in the event of loss.*

- ***Offer a method that acknowledges any co-benefits the project may create.***
- ***Be subject to ongoing monitoring, reporting and verification.***

***Each of these are described in greater detail below.***

The concept of additionality with respect to forest carbon projects means that in order to generate marketable GHG emissions reductions, a project must sequester carbon that is in addition to what would have occurred in the absence of the project as measured against a baseline. Various inventory procedures can provide this baseline estimate. Credible procedures should describe their statistical validity. There is also the question of dynamic baselines. That is, a “base-year” baseline inventory assumes that the measured amounts would stay the same overtime. A dynamic baseline uses techniques to reveal the likelihood of periodic changes to a baseline due to circumstances that can’t be easily predicted. One method is to monitor comparable properties that are not part of a carbon project to see how their baseline changes over time. ***Dynamic baselines offer an additional layer of credibility.***

Additionality can be achieved through various management practices on the property. These include:

- Afforestation (planting a tract not currently in a forest land use)
  - Given the dynamics of climate change it is important that these be sites capable of supporting suitable trees species now and into the future.
- Accelerated reforestation (intensifying the pace and success of reforestation after harvest or stand replacing damages)
  - This might include controlling competing vegetation, planting instead of relying on natural regeneration, etc.
- Avoided deforestation (proving that a tract is highly prone to deforestation in the absence of a carbon offset agreement)
  - For example, a carbon agreement might provide enough income to cause a landowner to not convert to another use.
- Improved forest management (conducting activities that increase growth rates and survival)
  - For example, by identifying target optimal densities or reducing emission risks from disturbances such as wildfire or insects and disease that will impact future carbon storage.

***To be credible the additional benefits any of these may generate should be backed by the best scientific evidence available.***

Any of the management practices mentioned above will also generate co-benefits such as clean water, improved habitat and increased production of wood for harvest.

***Harvested wood products have their own value in terms of increased carbon storage and credible systems will factor in the net gains produced through sustainable harvests, using an understanding of the utilization of harvested wood and a life-cycle analysis of the subsequent products.***

***Other co-benefits may not have an easily accessed monetary value but can be validated through engagement with other interests and stakeholders.***

A program should try to account for leakage, which is when a carbon sequestration project causes unintended increases in GHG emissions elsewhere offset. The only way to fully account for leakage is at a global scale, given that countries vary widely in their commitment to and promotion of reduced greenhouse gas emissions. ***Programs may try to address leakage to an extent by ensuring that leakage, at least, doesn't occur at the ownership level.***

There is no commonly accepted standard for the length of time projects must commit to. ***Obviously, the longer a project is under obligation to perform, the more favorably it will be viewed by a potential purchaser, but the practicality of just how long has to be balanced against a landowner's willingness to commit.***

Projects lose their viability for a number of reasons that are usually associated with fire, insects and disease or other disasters such as hurricanes and floods. ***Those risks should be acknowledged, and their likelihood accounted for in some fashion. Two common methods are to reduce the offset credit value by some defensible amount or have the project developer share in the risk by creating a bank of unused credits that can be drawn upon in the event of an unavoidable disturbance.***

***The "Carbon Offset Registry" itself doesn't just develop and approve protocols that must be followed in order for a carbon credit to be registered. They maintain records of credits as they are bought, sold, made available or retired to ensure that they remain valid and that they are allotted to only one purchaser. Increased credibility is gained through independent audits to see that protocols are followed, and that predicted additionality is actually achieved. These functions are typically identified as monitoring, reporting and verification.***

***Additionally, a registry should be committed to adapting their protocols as new, impactful scientific information is brought forward.***

***At present, Carbon Offset Registries themselves are not accredited under any standardized system and participants should look closely at their differences.***

### **Conclusion**

The role that forests can play in combatting climate change is widely recognized. This role can be enhanced by supporting forest landowners in maximizing carbon offset benefits that a given property can produce. These benefits have a dollar value to organizations looking to offset their carbon emissions, or their carbon footprint. The National Association of State Foresters strongly supports this market opportunity for landowners, but we view the credibility of given programs to be key to a sustainable market. As programs continue to evolve and new ones introduced, there are elements that will provide greater credibility and thus ensure sustainability.