



iisd International Institute for Sustainable Development
Institut international du développement durable
<http://www.iisd.org>

First Nations Carbon Collaborative— Indigenous Carbon Leadership: Voices from the field

Project Team:
Shaunna Morgan
Angelique Slade Shantz

February 16, 2011
Final Report



Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada



First Nations Carbon Collaborative—Indigenous—Carbon Leadership: Voices from the field

Project Team:
Shaunna Morgan
Angelique Slade Shantz

February 16, 2011
Final Report

Indigenous carbon market case studies providing lessons learned and best practices from ten communities leading the way in Indigenous participation in carbon markets

© 2011 International Institute for Sustainable Development (IISD)

Published by the International Institute for Sustainable Development

IISD contributes to sustainable development by advancing policy recommendations on international trade and investment, economic policy, climate change and energy, measurement and assessment, and natural resources management, and the enabling role of communication technologies in these areas. We report on international negotiations and disseminate knowledge gained through collaborative projects, resulting in more rigorous research, capacity building in developing countries, better networks spanning the North and the South, and better global connections among researchers, practitioners, citizens and policy-makers.

IISD's vision is better living for all—sustainably; its mission is to champion innovation, enabling societies to live sustainably. IISD is registered as a charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Government of Canada, provided through the Canadian International Development Agency (CIDA), the International Development Research Centre (IDRC) and Environment Canada, and from the Province of Manitoba. The Institute receives project funding from numerous governments inside and outside Canada, United Nations agencies, foundations and the private sector.

International Institute for Sustainable Development
161 Portage Avenue East, 6th Floor
Winnipeg, Manitoba
Canada R3B 0Y4
Tel: +1 (204) 958-7700
Fax: +1 (204) 958-7710
Email: info@iisd.ca
Website: www.iisd.org

Acknowledgements

The First Nations Carbon Collaborative is comprised of the International Institute for Sustainable Development, Centre for Indigenous Environmental Resources, Carrier Sekani Tribal Council, Poplar River First Nation and Tâichô Nation. The collaborative is working together to build capacity within First Nations to access existing and emerging carbon markets. All members of the collaborative must be acknowledged for their participation in moving this work forward.

The Centre for Indigenous Environmental Resources, with the support of the International Institute for Sustainable Development, completed this report. We would like to acknowledge the time that each community and organization took to be interviewed and review their case studies. We must also acknowledge the Carrier Sekani Tribal Council, for commissioning this research, the New Relationship Trust and Indian Northern Affairs BC Capacity Initiative for financially supporting the First Nations Carbon Collaborative.



Photo by CIER

Table of Contents

Acknowledgements.....	ii
Introduction.....	1
2.0 Case Studies.....	3
2.1 Nez Perce Case Study.....	3
2.2 West Arnhem Plateau Aboriginal Land and Fire Management Case Study.....	7
2.3 Northern Savannah Indigenous Landowners Case Study.....	10
2.4 Maori Landowners Case Study.....	13
2.5 Scolel Té Landowners Case Study.....	16
2.6 Lummi Nation Case Study.....	19
2.7 Munsee Delaware Nation Case Study.....	21
2.8 Haida Nation Case Study.....	23
2.9 Poplar River First Nation Case Study.....	25
3.0 Lessons Learned.....	27
Sources Cited.....	31

Introduction

Indigenous peoples are crucial to maintaining humanity's rich cultural fabric. Their knowledge and ways of life are being lost and are threatened by a changing environment over which they often have little control. The issues related to ownership and management of natural resources on Aboriginal lands are a frequent source of controversy and conflict that often require trade-offs between economic development and the protection of the environment (Smith & Madras, 2009).

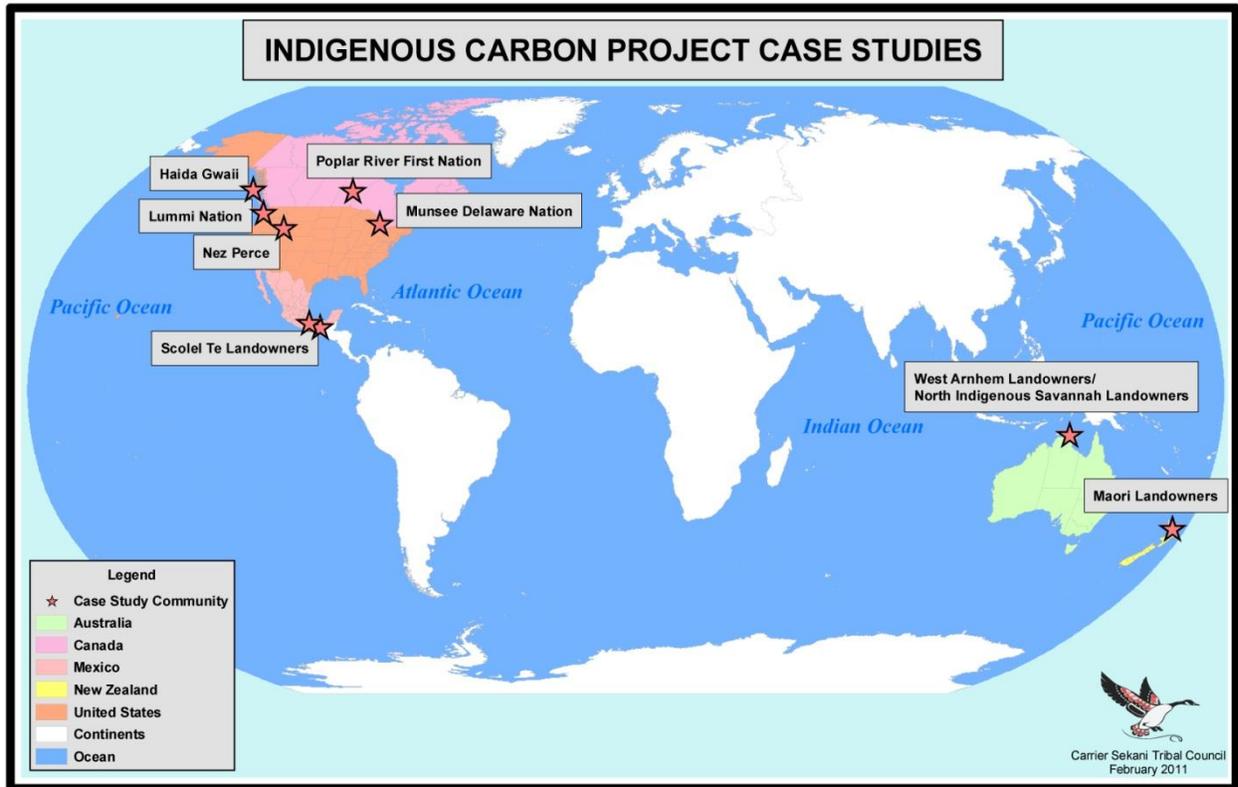
In contrast, harnessing carbon markets can provide indigenous peoples with the financial resources they require to maintain their natural landscapes and traditional lifestyles. In doing so, indigenous peoples can play a role in contributing to solutions to address climate change, including in the reduction of greenhouse gas (GHG) emissions and preserving biological and cultural diversity, which are rapidly being lost.¹

The First Nations Carbon Collaborative is a three-phase community-driven² project that aspires to build capacity within First Nations so they can participate in and benefit from existing and emerging carbon markets. As part of the first phase, international best practices for indigenous peoples and carbon rights regimes were identified. The research focused on examining existing methodologies and approaches devised for indigenous communities to access carbon markets.

To convey the international best practices identified, the Centre for Indigenous Environmental Resources (CIER) developed a series of indigenous carbon market case studies, providing lessons learned and best practices from 10 indigenous communities. The 10 case studies focus on indigenous communities at the forefront of piloting new, innovative and varying approaches to indigenous carbon market participation within differing geographic locations.

¹ The degradation of ecosystems that are essential for human well-being has led to considerable losses of biological and cultural diversity, particularly for those whose lives and livelihoods are more closely tied to the land, as is the case with many indigenous peoples. The *Millennium Ecosystem Assessment* (2005) reports that approximately 60 per cent of the ecosystem services they assessed are degraded or used unsustainably.

² First Nations communities involved in the FNCC include: Carrier Sekani Tribal Council, Poplar River First Nation, and the Tâichô Government.



We hope the lessons learned generated from these case studies will provide First Nations in Canada with inspiration, so that they can better understand the potential of carbon markets to contribute towards their environmental, cultural and development aspirations. We also hope that they will provide insights into the many different types of projects currently being undertaken by communities, and concrete solutions to some of the challenges that may arise throughout the course of their development.

The lessons learned by the communities throughout the development of their projects are summarized in a “Lessons Learned” section of this report. We anticipate that the “Lessons Learned” generated from the case studies will provide both policy guidance and practical advice for First Nations who share similar challenges.

2.0 Case Studies

2.1 Nez Perce Case Study

In the mid-1990s the Nez Perce tribe began to experience funding cuts to their ambitious forestry program. At around the same time, Brian Kummer, the tribe's reforestation forester, began hearing about carbon sequestration and the carbon market. Kummer began to investigate the potential for this emerging market to supplement the tribe's dwindling forestry budget, and saw real possibilities. With the aid of others, the forestry program learned how to complete a basic carbon inventory, and once it was determined that the community did have carbon to sell, the program began to learn about the verification, certification and sales aspects of the carbon sequestration field. "Now growth models/simulators are making this process much easier," says Kummer. "The time and effort involved in a carbon inventory is a fraction of what it used to be. We spent a lot of time and effort over the years, learning the process because, at the time, there was not near the information or data that there is now. A tribe coming on board now would not spend as much development time and a project would conceivably be much more profitable."

Today, Nez Perce's existing carbon projects include 33 different projects falling into two categories, or portfolios, including afforestation (or agricultural conversion) and reforestation/fire restoration. The reforestation credits were traded on the Chicago Climate Exchange (CCX), with National Carbon Offset Coalition (NCO) as the project aggregator. The projects span 3,375 acres, including 2,205 acres of reforestation, and 1,170 acres of afforestation. The resulting offsets have been sold to various buyers, at prices ranging from \$1.07–\$4.30 per tCO₂.

General Information

Country: United States of America

Project Location: 750,000 acre reservation in Northern Idaho

Interviewee: Brian Kummer

Ph: (208) 621-4619

Email: briank@nezperce.org

Name of indigenous community: Nez Perce Tribe (Forestry Division)

Partners: National Carbon Offset Coalition (NCO), Chicago Climate Exchange (CCX), U.S. Department of Energy (DOE), U.S. Bureau of Indian Affairs (BIA), State of Idaho, Environmental Defense.

Tons of carbon sequestered: 21,200 tCO₂

Project development cost: Unknown (carbon project is part of larger forestry program)

Price per ton of CO₂: Between \$1.07 and \$4.30 per tCO₂

Revenues: \$27,300.00 (total)

Project type: Afforestation (35%) and Reforestation/Fire Management (65%)

Case study sources:

- Interview with Brian Kummer
- http://www4.nau.edu/tribalclimatechange/tribes/northwest_nezperce.asp
- <http://tribalclimate.org/PDFsBillings/Press-Kummer.pdf>
- <http://www.nytimes.com/2007/05/08/science/earth/08carb.html>

Economic Viability

According to Kummet, the project has taken a lot of time and effort over the years, with minimal up-front economic benefits. However, the project revenues help to supplement the forestry department's budget and the outcomes of developing forest carbon projects are highly compatible with Nez Perce's overall vision and strategy for both its forestry and its economic development. Further, as one of the first tribal players in the carbon markets, Nez Perce has been consulted to help several other organizations flesh out issues related to tribal carbon, and forest carbon in general. Some of the revenues generated through these contracts have helped Nez Perce realize another important benefit—assisting other tribes to develop their own carbon projects.

Carbon Prospecting

According to Kummet, carbon aggregators looking to capitalize on tribal carbon assets can be a concern for tribes with less knowledge about the process. “For a while I’d get one to two calls every day, and even now I still get a couple of calls a week from people,” Kummet says. “I think a lot of people are waking up to the fact that tribes have huge ownerships and there’s big opportunity there. Now, we have tribes from all over the country inquiring about carbon projects because they’re getting the same calls.” Kummet tells tribes that call him that it’s important to educate themselves on the basics of carbon, and the terminology and concepts that they’ll need to know to ensure they do not get taken advantage of. The Nez Perce has also worked with the Intertribal Timber Council (ITC) and recently held a carbon workshop at ITC’s annual national symposium. Earlier the Nez Perce had also worked in alliance with the Department of Energy (DOE) and NCOC to help put on workshops to educate tribes about carbon.

Overcoming Challenges

The tribe's aggregator has used several different third-party verifiers over the years with varying degrees of success. "Verification has been a big headache for us," says Kummet. "Verifiers need to understand how tribes work. Not too many people understand tribal land ownership issues and governance, and that's been a huge

"Verifiers need to understand how tribes work. Not too many people understand tribal land ownership issues and governance, and that's been a huge issue."

Brian Kummet

issue." Tribal lands are held in trust by the federal government for the tribe, and the tribe's long-term land management ethic fits nicely with many of the carbon registries or protocols. However, these unique land management issues are foreign to many aggregators and verifiers, and the time needed to educate them has been frustrating. Specific individuals with the Bureau of Indian Affairs (BIA) in Washington D.C. were very helpful in aiding the Nez Perce with documentation to satisfy a few of the CCX requirements, but a lack of federal policy has also been frustrating.

A lack of federal legislation has also made long-term planning difficult, since until recently a federal cap-and-trade program was widely anticipated. This environment of uncertainty throughout North America and the lack of federal direction on climate change has reduced the current value of carbon and the willingness of the tribe and others to make future investments in carbon offset projects. Partially as a result of this uncertainty, the CCX is now closing down. In the absence of the CCX, the tribe may investigate the possibility of developing projects that will qualify for other registries such as the Voluntary Carbon Standard (VCS), the American Carbon Standard (ACS) or the California Action Registry (CAR). "Some of our projects may not meet these qualifications, because of varying degrees of additionality, in part due to our early entry into the carbon game," says Kummet. "Early action credits have always been a point of contention." Additionality is the requirement that carbon offsets traded on the carbon market must be additional to any carbon reduction that would have happened in the absence of the carbon market.

Learning and understanding the terminology and process required to engage in carbon projects was also a major challenge, especially as one of the early players in the market, because initially the concept was so new that even the terminology was not standardized, making communication difficult. The industry has matured since the Nez Perce tribe's initial entrance into it, and the terminology has become more standardized, making the process easier for future communities to engage in. However, there is still a wide discrepancy between different standards, and, for many communities, initially acquiring a sufficient level of proficiency with the workings of a technically complex and continually evolving industry remains a challenge.

This concern has caused several tribes to balk at carbon trading, taking the position that carbon trading is a way to let industry continue to pollute without repercussions. This view is exacerbated by

a lack of trust by tribes in outside firms who are increasingly interested in developing and certifying plans for tribal forest lands, verifying existing tribal forest inventories and brokering carbon offsets. Many tribes are against third-party certification on principle. By federal law, tribes have to manage their land sustainably, and their land management plans have to be approved by the BIA. To many tribes, third party certification seems like a duplication of work that they are already required to complete for the BIA.

In an ideal world, Kummet would have an external tribal entity established to form a tribal verification and certification council that could provide common oversight to tribes across the U.S. A committee has been formed by the ITC to develop a Tribal Certification and Branding committee, but according to Kummet, this is a long-term project that will not likely help tribes in their current challenges with carbon certification.

2.2 West Arnhem Plateau Aboriginal Land and Fire Management Case Study

The West Arnhem plateau is an area of the Arnhem Land Aboriginal Land Trust in the north of the Northern Territory, adjacent to the World Heritage-listed Kakadu National Park. It is known both for its rich Aboriginal history, with many culturally significant rock wall paintings, as well as for its stark natural beauty. It is less well-known as the location of an innovative carbon project operated by indigenous land and fire managers utilizing traditional knowledge and techniques alongside Western science as a way to generate GHG emissions abatement revenues.

Project History

The West Arnhem Land Fire Abatement Project (WALFA) was the first project of its kind, and secured revenues through a fee-for-service arrangement with a subsidiary of the liquefied natural gas (LNG) producer CONOCO Phillips. The project was initiated by a group of Elders whose traditional country had been depopulated decades ago, leaving their land vulnerable to devastation from huge unmanaged fires that damaged Aboriginal rock art, monsoon forests and wildlife. The area had no infrastructure to support a community, but the Elders nonetheless felt compelled to move back to manage the land and fire in the region.

The concept of generating GHG emission offsets through fire management was a spin-off from a long-term collaboration with scientists researching fire ecology in the plateau. It was an opportunity to assist the Elders to finance their move back to care for their home country. There was no established methodology to measure carbon equivalent (nitrous oxide and methane) emissions abatement from fire management at that time, so a methodology began to be developed contiguous with a payment for environmental service contract with

General Information

Country: Australia

Location: West Arnhem Land, Northern Territory

Interviewee: Glenn James

Ph: 08 8 946 6377

Email: Glenn.James@cdu.edu.au

Name of indigenous community: Aboriginal Traditional Owners and Ranger Groups of the West Arnhem Plateau

Partners: Northern Land Council, Adjumarllarl, Mimal, Jawoyan and Djelk Rangers, Warddeken Land Management Ltd Northern Territory Government, NAILSMA

Tons of carbon-equivalent gasses abated: ~150,000 tCO₂e per year over 28,000 square km

Price per ton of CO₂: Payment for Ecosystem Services (PES) arrangement that includes 100,000 tons of abatement

Revenues: \$1 million per year

Project type: Biodiversity and wildfire emissions management

Case Study sources:

- Interview with Glenn James
- http://www.savanna.org.au/savanna_web/information/arnhem_fire_project.html
- http://savanna.cdu.edu.au/publications/savanna_links_issue33.html?tid=250363
- Altman, J. *People on country, healthy landscapes and sustainable Indigenous economic futures: The Arnhem Land Case.*
- Sheehan, J. *Indigenous Carbon Property Rights.*

CONOCO Phillips, which included biodiversity management and abatement of 100,000 tons per year of GHG emissions from wild fires. This arrangement was not arrived at through an established market. Rather, it was negotiated through the Northern Territory Government, when CONOCO Phillips sought to construct a gas processing facility in Darwin Harbour (300 km to the west of the plateau). The government stipulated that the corporation offset damage to the environment at the gas plant construction site and some of their emissions from processing. Several key partners recognized the opportunity and so the West Arnhem Fire Management Agreement (WAFMA) was developed, which paved the way for WALFA.

The WAFMA returns about \$10.00 per ton of non-CO₂ gas abatement, providing a revenue stream that has allowed the Elders to begin to rebuild their community. The revenues substantially cover operational expenses and basic living wage for those involved in the fire management. However, given the fact that there was no infrastructure to provide support for them and their families, including such basic necessities as roads and schools, other income or government support is required to cover these basic infrastructure costs over and above wages.

“GHG emissions offset generation through fire management provides opportunities for Aboriginal people to maintain or re-establish a livelihood on their clan estates. Traditional fire management knowledge and techniques that have largely disappeared from much of the remote northern landscape can be re-introduced and combined with modern technologies to produce income from environmental services and tradable abated GHG emission offsets.”

Glenn James

Traditional Aboriginal landowners and rangers involved in WALFA have not formalized a governance structure, but cooperate through customary structures, relations to kin and country and through their ranger organizations. This fee-for-service arrangement relies on strong institutional partnerships and agreements to interface with the market. It is not structured like a typical market-based carbon offset project. This will likely change over time as other business and investment opportunities occur. Importantly, the current contract is for 17 years, with a review each five years, allowing for time and flexibility for the Aboriginal landowners and managers to develop their governance arrangements to suit their cultural and economic interests and to concurrently seek contracts with other entities, such as government departments, for parallel services like feral animal and invasive species control to increase their revenues.

Lessons Learned

Many lessons were learned throughout this groundbreaking project’s development and implementation phases. Two important lessons include:

- **The importance of local ownership:** Local ownership of the project is a key consideration in the governance of these projects, with local ownership providing far better results than mere job creation.
- **The establishment of realistic timeframes:** Less obvious issues around governance—the transmission of local and traditional knowledge, operational training, youth development and succession planning, for example—take far longer and require many more resources than often is expected, and budgets should be developed accordingly.

2.3 Northern Savannah Indigenous Landowners Case Study

The WALFA project referred to in Case Study 2.2 was an import precedent for work currently being done by the North Australian Indigenous Land and Sea Management Alliance (NAILSMA).³ Working with its allied land councils⁴ and remote Aboriginal communities in the tropical savannahs of Northern Australia, NAILSMA is developing four additional landscape-scale fire management projects, which will generate GHG offset revenues for the indigenous landowners and rangers who manage the land and abate wild fires.

An Australian Aboriginal Context

According to Glenn James, Social Program Coordinator for NAILSMA’s carbon work, in the Australian Aboriginal context, traditional landowners are first and foremost interested in managing the country for which they have a customary responsibility. Many Aboriginal communities have been displaced, and are trying to find ways to get back to their clan estates to care for the land in the traditional manner that was taught to them by their ancestors. This care relied heavily on fire management strategies to achieve multifarious ends including: the protection of cultural and forest assets, clearing of camp grounds and walking trails for hunting, to encourage growth of bush foods, to find water soaks, etc.

The application of traditional fire management can also generate GHG emissions offsets that can greatly

General Information

Country: Australia

Location: Australia’s tropical savannahs

Interviewee: Glenn James

Ph: 08 8 946 6377

Email: Glenn.James@cdu.edu.au

Name of indigenous community: Aboriginal Traditional Owners and Ranger Groups

Partners: Kimberley Land Council, Northern Land Council, Carpentaria Land Council Aboriginal Corporation, Balkanu Cape York Development Corporation, Australian Government’s Caring for our Country program, *Commonwealth Scientific and Industrial Research Organisation*, Bushfires Northern Territory and Tropical Savannas Co-operative Research Centre

Tons of non-carbon gases abated: 0 to date; project is still in planning stages

Price per ton of CO₂e gas: Project is still in planning stages

Revenues: Project is still in planning stages

Project type: Fire Management

Case Study sources:

- Interview with Glenn James
- <http://www.nailsma.org.au>
- Altman, J. *Sustainable development options on Aboriginal land*.
- Cooke, P, Russell-Smith, J, Whitehead. P. *Culture, Economy and Ecology of Fire Management in North Australian Savannas: Rekindling the Wurrk Tradition*.

³ NAILSMA is an alliance of indigenous land councils and organizations whose range stretches across Northern Australia.

⁴ These land councils have land management responsibilities over three distinct land ownership accords, including: 1) management of indigenous land held in fee simple or communal title; 2) management of privately owned land; and 3) management of native title land (an article of legislation that enables Aboriginal people who have claims to crown [freehold] land to claim a certain suite of legally sanctioned rights).

assist Aboriginal peoples in the tropical savannahs to support or improve their livelihoods on or around their clan estates.

Traditional fire management regimes ceased in most remote parts of the savannah a few generations ago with the dramatic demographic drift to missions, mining camps and other settlements, but the knowledge and connection to country remains strong in the diasporas grown up over the last 50 years or more. Now, in combination with modern technologies, traditional land and fire management practices are being reinvigorated and can produce tradable abatement of emissions and therefore important income to support “caring for country.” In addition to the biophysical benefits, there are health, familial and spiritual benefits, says James: “Indigenous land management is much broader than fire management. In addition to that, they provide other valuable environmental services, such as feral animal and weed control. Importantly, when people go back to their country, they’re reconnecting with their ancestry, with their family. They are also passing on traditional ecological knowledge, reinvigorating ceremonies, reviving local languages and fulfilling deep-rooted obligations.”

Local Ownership

James feels that local ownership is a key element to these projects. He makes the distinction between job creation and project ownership, suggesting that ownership is an extension of the responsibility towards the care of the land that Aboriginal peoples feel—which is very distinct from employment. This distinction, as well as the recognition that customary governance institutions do already exist (although they are sometimes stressed and fragmented), should be taken into account in the creation of carbon-trading regimes. The challenge, James says, is to find and work with governance models that can interface within market parameters and policy arenas in ways that do not compromise local culture and values.

“The concept of Indigenous management is much broader than fire management. In addition to that, they provide other valuable environmental services, such as feral animal and weed control. So when people go back to country, they’re really reconnecting with their ancestry, with their family. They are also passing on traditional ecological knowledge, reinvigorating ceremonies, reviving local languages and fulfilling deep rooted obligations.”

Glenn James

In order to achieve this, NAILSMA has been considering the development of an external institution that is able to liaise between practitioners and the marketplace in a way that bolsters project ownership by Aboriginal landowners and managers. This may take the form of a federation of regional Aboriginal fire management groups around a carbon trading desk, for example.

Dramatic changes in Australian federal government policy on emissions trading have seen a

consequent shift in focus by NAILSMA in project accreditation and marketing. The original plan to register the abatement projects with the (international) Voluntary Carbon Standard (VCS) and Climate, Community and Biodiversity Alliance (CCBA) is less certain with the development of the national Carbon Farming Initiative (CFI), which specifically includes savannah burning as an accountable offset activity. The CFI offers support in developing accounting methodologies and access to a regulated internal market. However, given the pace at which things change in and around the carbon economy, NAILSMA seeks to ensure that direct trade in regulated international markets, in voluntary markets and for payment for ecosystem services (PES) remain options for improving livelihoods in “caring for country.”

Lessons Learned

According to James, a key lesson learned through the project’s development has been the importance of a strong communications process with quality information provided to all stakeholders. NAILSMA utilizes a multifaceted approach that includes: participatory workshops and field exercises incorporating “action research and hands-on learning (for example, about the science of emissions abatement measurement), information sessions, digital and other communications products, regional ‘road shows.’” Importantly, local project leaders and advocates coordinate much of the field-based communications. They become key regional information sources for other remotely situated project participants and stakeholders.

2.4 Maori Landowners Case Study

This research endeavour began as a joint initiative between a group of Maori landowners, Stanford PhD Student Jason Funk, Motu Economic and Public Policy Research and Landcare Research. The project was initiated prior to the establishment of the New Zealand Emissions Trading Scheme (ETS), and attempted to anticipate New Zealand’s regulatory framework, and then mimic the way Maori landowners would behave in light of this framework. This insight could then provide policy-makers with proactive feedback on how to shape the framework in a way that would allow for maximum Maori participation. Funding was provided by a New Zealand foundation to provide the participating landowners with a price per ton of CO₂ that was in the realm of what was anticipated for the country’s trading regime, so that real insights could be gained. Template contracts that were fair and transparent from both sides were generated, and are still available for use to negotiate carbon developments.

Although the carbon for this project is sequestered by the reforestation of the native species Manuka, or tea tree, a distinguishing feature of this project is that the carbon sequestration revenues are providing landowners with the ability to leverage the funding to allow various other economically viable land-use strategies to coexist in one geographic location. This includes sheep and cattle grazing, timber harvesting, bee hives for harvesting Manuka honey, an ecotourism camp, subsidization of erosion control activities, and biodiversity reserves. On their own, any one of these activities may be marginally profitable; however, revenues from the carbon sequestration allows farmers to re-evaluate their lands in a more holistic way, and develop a multi-faceted land management plan that looks at all options and assigns value from a more comprehensive perspective.

A Historical Perspective

General Information

Country: New Zealand

Location: Gisborne/East Cape (GEC) region of New Zealand’s North Island

Interviewee: Suzi Kerr

Ph: (64) 4 939 4250

Email: suzi.kerr@motu.org.nz

Name of indigenous community: Maori landowners in New Zealand

Partners: Motu Economic and Public Policy Research, Landcare Research

Tons of carbon sequestered: 4,000 tCO₂ by the time fully mature reforestation over 50 ha is complete (3 tCO₂ per ha per year)

Project development cost: Unknown

Price per ton of CO₂: \$15.00

Revenues:\$48,000.00 (total)

Project type: Reforestation of native species Manuka (tea tree)

Case Study sources:

- Interview with Suzi Kerr
- Funk, J, and Kerr, S. Restoring forests through carbon farming on Maori land in New Zealand/Aotearoa. Motu Emissions Trading Game http://www.motu.org.nz/building-capacity/environmental_trading_game

Prior to 1984, much of the land in the area where the project is located was cleared for pastoral farming, due in part to agricultural subsidies. By the early 1990s, agricultural subsidies had decreased significantly, and were partially replaced by the government with reforestation subsidies in an effort to slow major soil erosion. These reforestation subsidies were reinforced by talk of a national emissions trading scheme. In 2005 Motu approached a group of landowners to develop an innovative pilot project for Maori carbon project development.

Although the manager of the station where the project was located had heard of carbon credits prior to being approached, according to the Maori Land Act, or Te Ture Whenua, land is governed by a board of trustees, which had to reach a consensus about their interest in participating in a carbon scheme. The concept of carbon offsets was new for many of the trustees of the land, and a participatory approach was used to fully inform all trustees of the land of the pros and cons of carbon market participation. Together, using Geographic Information System (GIS) data sets, they identified areas where they felt that the land could be used for sequestration, and where they felt the overall benefits would be most likely to override the costs of reforestation due to the marginality of the land. A carbon calculator developed by Landcare Research was used to provide a preliminary estimate of the carbon sequestration properties in Manuka over the span of 70 years.

Important Outcomes

Several important issues arose as a result of this pilot initiative. The landholders found that although at \$15.00 per tCO₂, carbon trading is not economically viable on its own in this area, it can be valuable. In order to be viable, it must be used as one part of a holistic management plan that accounts for economic, environmental and cultural benefits to tip the scales to make a more sustainable land-use plan become financially feasible.

“If you can become a part of the conversation early on, it’s a huge opportunity. The Maori became an important part of the negotiations around the New Zealand ETS system.”

Suzi Kerr

Maori land ownership and management customs also created certain stumbling blocks, which surfaced through this pilot initiative. Protection from alienation from land parcels prevents owners from the use of land as collateral to access capital. Further, the land is managed by a group of democratically elected trustees, requiring consensus from the whole group to agree to a carbon project, which can increase timelines and the need for a participatory process dramatically.

Another issue that arose through the process was that permanent designation of the land to a specific land-use purpose such as carbon trading, which would ensure the carbon sequestration’s permanence, was in violation of the Maori value that puts self-determination of future generations

on equal footing with that of present generations. In order to overcome this, the contracts established included flexibility mechanisms that provided exit strategies for future generations. Further, two types of contracts were established. One was a traditional permanent sale contract, and the second was an annual rental contract, with no forward-going commitment. This provided the renter of the credits with the right to claim the offsets for one year, with no expectation that the credits would become permanent at any time.

Lessons Learned

This innovative model provided many lessons to the stakeholders involved that other indigenous communities and their partners can learn from. According to Suzi Kerr from Motu, carbon projects should be:

- **Cost-effective:** There are many existing carbon modelling tools that can be used for preliminary decision-making, and significantly mitigate the risk of using up-front capital for more in-depth analysis.
- **Participatory:** This is particularly important when a lack of consensus can be time consuming and costly, and potentially even prohibitive. Motu found that creating specific materials for the Maori forestry context, which took into account both profit motivations and cultural factors, was critical for capacity building. Further, when these materials were developed and delivered by an unbiased and credible source, they were more widely accepted. Motu also found that developing a website trading game helped participants of their workshop to comprehend carbon markets more fully. Strong and transparent governance structures are also critical for the development of these complex projects.
- **Integrative:** Using carbon revenues as just one piece of a larger sustainable land-use plan can increase the potential for success.
- **Geographically strategic:** Carbon sequestration projects can often be carried out on marginally productive areas of land, so geographic location is an important factor in the decision-making process.

Kerr summarizes: “These systems were originally met with a lot of scepticism, but if you can become a part of the conversation early on, it’s a huge opportunity. The Maori became an important part of the negotiations around the New Zealand ETS system.”

2.5 Scolel Té Landowners Case Study

Scolel Té means “the tree that grows.” The project includes 669 participants, spans 7,500 hectares across Chiapas and Oaxaca, and utilizes various methodologies, including afforestation, reforestation, agroforestry, forest restoration and avoided deforestation. Scolel Té is a project of Plan Vivo, a carbon standard specifically designed for the development of community-based projects. Scolel Té began in 1994 as a test for the Plan Vivo system, a research project to study the quantification, aggregation, and monetization of carbon benefits from communities or multiple participants. It is Plan Vivo’s longest-standing project and led to Plan Vivo’s incorporation as a non-profit foundation in 2000.

A History of Community Development

Although the foundation does provide some project support, it is the project coordinators (organizations in the country where the project is located) who are the initial project drivers. In the case of Scolel Té, the project coordinator is an organization called AMBIO. AMBIO facilitated carbon credit sales, the technical aspects of carbon measurements, and the administrative work early on, although the goal was to build capacity in the community in these areas, so that community members could play increasingly significant roles as the project progressed.

Solid Planning Process Provides Strong Foundations

One important aspect of the Plan Vivo system is an initial visioning process that determines what land-use systems fit within a community’s vision and lifestyle, to ensure that project activities do not compromise community goals. This strong emphasis on planning, coupled with Plan Vivo’s certification of various land-use methodologies, allows communities to pick and

General Information

Country: Mexico

Location: 7,500 hectares across Central and Northern Chiapas and northeast Oaxaca

Project contact: Sandie Fournier

Email: sandiefournier@ambio.org.mx

Name of indigenous community: The project area includes several indigenous communities, including Tojolobal and Tzotzil (highlands) and Tzeltal and Lacandon (lowlands).

Partners: Plan Vivo (standards body and certifier), AMBIO (project coordinator)

Tons of carbon sequestered: 436,235 tCO₂

Project development cost: Development costs are ongoing. Plan Vivo projects expects about 40% of project revenues to cover development and administrative costs.

Price per ton of CO₂: Credits are sold in bundles as individual private sales of varying sizes and at different prices. Larger sales decrease the price per ton, with an average price of \$6.00–\$12.00 per ton. In 2009, the average price per ton was about \$9.00.

Revenues: Total revenues through 2009 are \$1.8 million. Producers net up to 66% of total revenues after operating and administrative expenses.

Project Type: Afforestation, reforestation, agroforestry, forest restoration and avoided deforestation

Case Study Sources:

- Interview with Alexa Morrison
- Plan Vivo documentation (annual report and project summary)

choose the suite of land-use systems that best fits their vision, and complement the terrain, culture and lifestyle of the individual community. The planning also reinforces the long-term economic sustainability of the project through the diversification of revenue streams. Carbon is not the only source of revenue, but rather is an important supplement to high-value native timber and agroforestry activities. In this project alone, a number of technical specifications have been developed for the project, including:

- *Tropical and sub-tropical improved fallow*: Enrichment planting and liberation thinning of pine, oak and cypress vegetation for the production of timber, fuel wood and other products.
- *Tropical and sub-tropical live fence*: Planting of pine, cypress, and cedar on the perimeter of arable fields and pastures for the production of timber and other products without adversely affecting crop yields.
- *Sub-tropical forest restoration*: Restoration of open pine and oak forests degraded through harvesting, fire and grazing for enhancing stocks of commercial species through enrichment planting or fencing to prevent grazing and allows natural regeneration.
- *Tropical taungya system*: Establishment of cedar and mahogany plantations with initial annual crops distribution, making maintenance of saplings more economical and providing additional income during the early years before crops are out-shaded.
- *Tropical coffee with timber trees*: Enrichment planting of high-value native timber trees like cedar into coffee plantations, diversifying coffee revenues with timber revenues and providing shade to improve coffee yields.
- *Forest management*: Conservation of existing forests through the establishment of formal governance and protection measures, fire management and restoration of degraded areas.

Third party verification for this project was conducted by the Rainforest Alliance.

Lessons Learned

- Initial planning:** As mentioned earlier, an initial planning phase ensures that a project does not negatively impact a community’s overall vision and lifestyle.
- Feasible goals:** According to Alexa Morrison of Plan Vivo, starting small is a huge factor in the success of their projects. When a community submits an application with a project including 500 farmers, they are often advised to scale back initially. “Things like payment system, choice of species, all of these things need to be evaluated. So I’d say being too overzealous is probably where you can go the most wrong. If you start with 1–2 community groups or 30–40 farmers, at least you’re starting at a manageable level,” says Morrison.
- Solid communication:** Projects like Scolel Té rely on a strong, upfront understanding among all project stakeholders of what the project entails. This needs to be constantly reinforced by ongoing fluid communication between the many different smallholder landowners, which can often be challenging. This allows people to understand the possibilities, and manage their expectations at the same time. A strong local presence, such as a project coordinator, is critical to facilitate both upfront and ongoing communication efforts.
- Stability in land tenure:** Land tenure is an ongoing issue for eligibility in the carbon markets. Stable land tenure through a long-term agreement is essential, although a title is not necessary. The issue is most complex when a conservation or co-management agreement exists, as this brings into question the validity of the project’s additionality.

“Things like payment system, choice of species, all of these things need to be evaluated. So I’d say being too overzealous is probably where you can go the most wrong. If you start with 1–2 community groups or 30–40 farmers, at least you’re starting at a manageable level.”

Alexa Morrison

2.6 Lummi Nation Case Study

In 2002 the Lummi Nation acquired a parcel of 1,654 acres of historical tribal forest land near Mount Vernon, Washington, in the Arlecho Creek watershed. The land had been under logging company ownership, and was threatened by imminent commercial logging interests. The funds for the acquisition were provided by the Climate Trust, in exchange for the Lummi’s agreement to a 100-year conservation easement that would sequester over 260,000 tons of CO₂ during its tenure. This stipulation suited the Lummi’s overall vision for the area as well, since it allowed for traditional land-use purposes such as hunting, trapping, gathering, and ceremonial use, but prevented commercial uses such as logging.

A “Win-Win” Situation

This highly endangered old-growth forest ecosystem, known as Ts’eq to the Lummi, was particularly significant to the tribe for several reasons. Culturally, the area contains many archaeological and historical sites, and is one of the few locations still used by the Lummi for ceremonies related to the Spirit Dancing Society, or Seyown. With its combination of forested wetlands, old-growth, second-growth and newly-regenerating stands, this area of extreme biological significance is also important for the preservation of salmon and other endangered species’ habitats.

The project site is also being used as an educational laboratory by the Northwest Indian College (NIC), to build capacity in the area of carbon sequestration in trees, soil and other vegetation. The original carbon inventory for this project was completed by NIC students.

“In a similar situation with an opportunity to buy more culturally significant old-growth forest, the tribe would

General Information

Country: United States of America

Location: 1,654 acres of historical tribal forest land near Mount Vernon, Washington, in the Arlecho Creek watershed

Interviewee: Gregg S. Dunphy

Ph: 360-384-2318

Email: greggd@lummi-nsn.gov

Name of indigenous community: Lummi Nation

Partners: The Climate Trust, Northwest Indian College

Tons of carbon sequestered: Over the 100-year life of the project the forest will capture at least 263,159 tCO₂

Project development cost: Unknown, part of overall forestry management plan

Price per ton of CO₂: The contract negotiated a flat fee rather than a price per ton.

Revenues: \$147,000.00 (total)

Project type: Avoided deforestation

Case Study Sources:

- Interview with Gregg Dunphy
- Arlecho Creek Natural Resources Conservation Area Management Plan
- http://www.climatetrust.org/native_northwest.html

do it again. It's a win-win," says Gregg Dunphy, habitat protection program manager and biologist for the Lummi Natural Resources department.

Project History

In 2000 the Climate Trust put out their first Request for Proposals, which Jim Hanson, the tribe's habitat restoration program coordinator at the time, responded to. Hanson had heard about carbon offsetting, and brought the opportunity to the Natural Resources Department and tribal council for approval. He then partnered with the NIC for assistance on the technical aspects of the proposal development, and submitted the proposal to the Climate Trust.

According to Dunphy, the project went smoothly from start to finish, and the main reason why the tribe is not actively looking for other similar projects is merely a funding and staff time issue, not because they aren't interested in more opportunities in the carbon

"In a similar situation with an opportunity to buy more culturally significant old-growth forest, the tribe would do it again. It's a win-win."

Gregg Dunphy

market. Finding initial funding to cover upfront project development costs can be a challenge. Because of the easement, the BIA was not involved, and the only other stumbling block that they have encountered along the way is that the roads into the area, which the tribe does not own, are not well maintained, making it difficult to get out to the area for monitoring and verification purposes.

The Climate Trust's projects are funded by Oregon power plants, which are mandated by Oregon state law to pay an offsetting fee for the Climate Trust to "retire" the offsets generated on the plants' behalf. Retiring offsets refers to removing the carbon credit from the market so that it can no longer be traded. The project is third-party verified every 20 years for quality control purposes. This innovative project brought together the traditional land and forestry management capabilities of the Lummi Nation, the technical skills of the NIC, and the purchasing power of the Climate Trust to form a unique partnership with environmental, social and economic benefits.

2.7 Munsee Delaware Nation Case Study

The Munsee Delaware Nation has launched an enterprise called the Munsee Tree Corporation to develop a biomass tree farm and carbon sequestration operation of several million fast-growing hybrid poplar trees being planted on abandoned farmland. The trees will grow to full maturity over the course of 31 years, at which point they will be harvested for biofuel production. Some trees will be harvested within three years for delivery to a wide range of customers, from pelletization plants to steam facilities, in locations as close as Ajax, Ontario and as far away as Sweden.

Project History

The Munsee Delaware Nation began researching the feasibility of this venture in January of 2010, when they were approached by Tree Canada, a not-for-profit organization that provides education, technical assistance, resources and financial support to encourage tree planting in rural and urban areas. Tree Canada first alerted the nation to the economic opportunity related to carbon, and helped them to find a suitable partner to buy the offsets. However, the Munsee's interest in trees dates back over fifteen years, when the community developed a forest management plan and planted over a million pine and deciduous trees throughout their land.

Job Creation and Economic Driver

To date, carbon trading has already proven to be profitable for the Munsee Delaware Nation. In the first phase of planting, which occurred in summer of 2010, over one million trees were planted, creating 48 short-term jobs. Another four million cuttings will be taken from the trees and planted in the spring, creating many more jobs. The carbon credits generated will be sold to TD Bank to help the corporation reach its goal of

General Information

Country: Canada

Location: 2,800 acres of land approximately 25 km southwest of London, Ontario

Interviewee: Chief Patrick Waddilove

Ph: 519-289-5396

Email: pwaddilove@munsee.on.ca

Name of Indigenous Community: Munsee Delaware Nation

Partners: TD Bank, Tree Canada

Tons of carbon sequestered: 20,000 tCO₂ annually

Project development cost: Confidential

Price per ton of CO₂: Confidential

Revenues: Confidential

Project type: Biomass Tree Farm

Case Study Sources:

- Interview with Chief Patrick Waddilove
- http://thegreenpages.ca/on/2010/07/new_carbon_forest_takes_root_i/
- <http://www.forestcarbonportal.com/pipeline/munsee-tree-corporation>

carbon neutrality for its business operations. According to Chief Patrick Waddilove, Chief of the Munsee Delaware Nation and the project champion, the main lesson they learned throughout the process has been that finding the right partner is critical to the success of a carbon offset venture. “The success of your project depends on the partner you find,” says Waddilove. “We were in contact with other players before we decided on TD Bank. They were the highest bidder, but you need a partner that comes with more than just money to the table. TD Bank was well-known and well-respected, and provides good advertising for our corporation.”

“The success of your project depends on the partner you find. We were in contact with other players before we decided on TD Bank. They were the highest bidder, but you need a partner that comes with more than just money to the table.”

Chief Patrick Waddilove

The Munsee Delaware Nation is leveraging the momentum they have built with this project to implement several other projects, including the development of an accredited forestry training program funded through the Trillium Foundation, which will give trainees the designation of registered forestry technician at the end of the program. They are also developing a two-year green energy technician program for biomass facilities, wind farms and solar installation, through a partnership with the Union of Ontario Indians. Finally, they are partnering with a biomass steam energy facility in Ajax, Ontario that wants to add an additional 10 MW of capacity on to their existing 10 MW plant. The nation will not only provide the biomass, but is also considering taking an equity position in the project. Some of the members of the nation are also considering purchasing pellet furnaces to heat their homes, and the band is evaluating the feasibility of a biomass power plant to fill the community’s energy needs.

2.8 Haida Nation Case Study

The Council of the Haida Nation have set aside one quarter, or 2,500 square km, of their forested land mass to protect for many years to come for a carbon sequestration project. The ancient conifers that the project protects are not only important from biodiversity and cultural perspectives, but are also particularly efficient at absorbing CO₂, making them an excellent generator of offsets.

A Historical Perspective

The Haida's original carbon project was a reforestation venture in Old Masset, which proposed to cut down the alder trees that were growing in previously logged areas along the riverbanks, and replace them with fast-growing conifers. The project required \$4.5 million in development costs, and raised questions about the additionality of the project. Additionality refers to a property of carbon offsets that requires that carbon credits are "additional" to a "baseline" scenario, or what would have happened in the absence of a carbon market, and is a critical component of a carbon credit's verification.

The question of the project's additionality stems from the fact that, while alder grows quickly after an initial disturbance, helping to maintain soil stability especially along riverbanks, conifers do in time reseed themselves and grow back, causing the alder to die back and conifers to take over again. Essentially, this is what the project itself proposed to achieve, albeit in a shorter time frame, making it difficult to claim additionality.

Forest Carbon Ownership

General Information

Country: Canada

Location: 10,000 square km off B.C.'s north coast

Contact: Bill Beldessi

Email: bill.beldessi@haidanation.ca

Name of indigenous community: Haida Gwaii

Partners: British Columbia Provincial Government

Tons of carbon sequestered: Unknown

Project development cost: Unknown

Price per ton of CO₂: Unknown

Revenues: Unknown

Project type: Avoided Deforestation

Case Study Sources:

- <http://www.cbc.ca/canada/british-columbia/story/2009/12/15/bc-haida-gwaii-carbon-offsets.html>
- <http://www.vancouversun.com/news/Queen+Charlotte+Islands+officially+renamed+Haida+Gwaii/2330672/story.html>
- <http://thetyee.ca/News/2007/06/08/CarbonGwaii/>
- <http://www.haidaclimate.com/content/view/37/27/>
- <http://www.nafaforestry.org/pdf/2009/NEWS4%20-%20NAFA.pdf>

As part of a landmark economic development and co-management land-use agreement between the Haida Nation and the Government of British Columbia, the two parties have now agreed to a revenue-sharing arrangement that not only quantifies the carbon contained in Haida forests that the Haida have proposed to protect, but also agrees to share the value of those credits. The agreement also included the creation of a Haida Gwaii management council to implement an agreed-upon land-use management plan, \$10 million from the province to repurchase forest licenses (plus an additional 120,000 cubic metre provincial forest licence), and a revenue-sharing agreement for future resource development projects. The agreement⁵ is the first of its kind in the country, and sets a precedent for First Nation carbon rights throughout Canada.

⁵ The Haida Reconciliation Protocol is available at:
http://www.newrelationship.gov.bc.ca/shared/downloads/haida_reconciliation_protocol.pdf

2.9 Poplar River First Nation Case Study

In 2007 Poplar River First Nation (PRFN) commissioned an inventory of the amount of carbon stored in the peatlands, soil and forest in their 8,600 square km of traditional territory. Peatlands, or “muskeg,” as they are called by First Nations, are wetlands that have accumulated significant amounts organic material, or peat, because of the slow decomposition properties found in the climatic conditions of the boreal forest.

The carbon stored has been estimated at over 440 megatons, with over 90 per cent of that found in deep peat deposits. It is estimated that over 60 per cent of Canada’s carbon inventory is found in its peatlands. According to the Canadian Boreal Initiative, Manitoba’s boreal peatlands store over 20 billion tons of carbon. If released, this amount of carbon would be the equivalent of many years of Canada’s annual fossil fuel emissions. Although much more attention is paid to the carbon stored in tropical rainforests, boreal forests store almost two times the carbon as tropical forests per acre.

Project History

This project began in 2007 with the goal of obtaining more information about PRFN’s traditional territory carbon stores, as well as to obtain information about peatland biodiversity and natural disturbances, and to train members of Poplar River First Nation in data collection and environmental monitoring methods so that they could continue the monitoring work on their own. The innovative process employed throughout the first phase included a blend of indigenous and scientific knowledge. Peat samples that the scientists and community members collected together were then taken to a lab to be analyzed using Near Infra-Red Spectroscopy (NIRS).

General Information

Country: Canada

Location: East side of Lake Winnipeg, Manitoba

Contact: Ray Rablauska

Email: rayrab2003@yahoo.com

Name of indigenous community: Poplar River First Nation

Partners: Canadian Boreal Initiative, PDK Projects, Inc. MacArthur Foundation, Manitoba Provincial Government

Tons of carbon sequestered: NA

Project development cost: NA

Price per ton of CO₂: NA

Revenues: NA

Project type: NA

Case Study sources:

- http://www.poplarriverfirstnation.ca/poplar_river_research.htm
- <http://www.borealcanada.ca/pr/12-15-2009-e.php>
- <http://www.ducks.ca/aboutduc/news/archives/prov2010/101210.html>
- <http://www.pdkprojects.com/pdf/Poplar%20River%20Peat%20Sampling%20July%202007.pdf>

Economic Opportunity

PRFN hopes that it will be able to use the information it has gathered through this research to create economic opportunities for its community through the sale of carbon credits. It is currently negotiating with the province of Manitoba to determine how the value of the carbon stored in its traditional territory will be allocated. Once this has been established, PRFN will begin to research how they will verify and sell the carbon credits.

3.0 Lessons Learned

As the field of carbon offsets is a relatively new and cutting-edge industry that is constantly changing, it is only natural that challenges would arise. The technical aspects of carbon offset projects are complex, as are the intricacies and variability of indigenous governance regimes. Some of the challenges identified in the case studies were specific to the geographic location, individual community or project methodology. However, throughout the course of the interviews, several common themes emerged from discussions that may have relevance to First Nations in Canada, as they seek to develop carbon projects. The common challenges and corresponding community solutions are summarized below.

Challenge

Many communities do not yet have a basic understanding of the technical, market and policy issues surrounding carbon. This can lead to communities being left out of policy conversations and taken advantage of by “carbon prospectors.”

Recommendation

A strong network of communities and capacity-building resources should be developed to bridge this gap in capacity. Many of the indigenous service organizations interviewed in this study are finding innovative ways to help bridge this gap, such as road shows, games, and local steering committees and facilitators.

Challenge

Communities are often sceptical about carbon markets or unsure whether or not they are interested in participating in carbon projects.

Recommendation

A strong and participatory initial consultation and planning process can help to build confidence and consensus among communities as to whether or not they want to be involved in carbon markets. Consultation helps provide preliminary information, and planning can ensure that the project does not conflict with the vision of the community. An ongoing communication plan can ensure that the community stays on board with the project throughout.

Challenge

Third-party verifiers and other stakeholders are often not sensitive to the different needs or understanding of governance, management and ownership contexts of indigenous carbon projects.

Recommendation

Indigenous communities should take opportunities to learn from one another, creating a network of resources so that, if a project is stalled, resources are available to help find solutions. Further, as more indigenous communities conduct carbon market transactions, third-party verifiers will become well-versed in these issues. Finally, the market need exists for a third-party verifier who specializes in indigenous carbon project verification.

Challenge

Communities sometimes begin with unrealistic expectations related to the economics of the project, time frames and size. Additionally, a lack of broad policy regulating emissions in North America has led to the low cost of carbon, making it difficult for small-scale carbon projects to be viable and profitable.

Recommendation

Land-based carbon projects generally do not have high fixed costs, other than verification (which depends on the carbon regime that is chosen), so starting with one small project usually does not negatively affect project economics, and can help work out project hurdles before they become unmanageable. This can also assist with shortening the time frame for getting a project accomplished; but be realistic—these are complex projects often with multiple stakeholders, and the administration requirements can sometimes be lengthy. Bundling carbon projects with other communities can be one way to start small while offsetting the fixed cost of verification, if you choose a trading regime with high verification costs. Communities' expectation should be managed through the initial consultation process and communication plan, as well as with a strong governance structure that ensures that any carbon revenues are used in an equitable and transparent way. The economics of a project can also largely be dependent on strategic use of the land. Marginal land can be reforested and used for carbon sequestration, alongside better land that can stay in productive use as part of a larger land-management plan.

Challenge

Initial start-up funding to begin a project can be difficult to find.

Recommendation

If you are an indigenous support organization attempting to implement a pilot project, apply for funding to purchase the credits from the community in an initial pilot phase so that an inability to sell the credits does not hold up the process. This also gives the community confidence that there are real economic possibilities available to them and gives them the upfront assurance of a price per ton of carbon. Also, using freely available modelling tools to estimate the amount of carbon sequestering potential of the land is a more cost-effective way to initiate a project than investing in more detailed estimates.

Challenge

It can be difficult to maintain ownership of a project, especially if there are large upfront capital costs to development that require investment that the community is unable to make. This can be particularly difficult in traditional territories where resource ownership policies are still unclear. Ownership can also be a challenge as it relates to protection from alienation, because it makes large, capital investments in land difficult if investment is required, as land cannot be used as collateral for a loan.

Recommendation

Ensure that there is enough knowledge within the project team about the resource to be able to negotiate the rights to the project ownership in a way that is beneficial to the community. Also, use project governance models that interface with market parameters without compromising local culture and values. Begin to negotiate the rights to your resource early on in the process. Finally, select the funding partner wisely. Hold out until the right partner with the right price comes along.

Challenge

Additionality can be difficult to prove.

Recommendation

Ensure that the community either has enough technical expertise in-house, or is hiring sound technical advisors, to ensure that your project's carbon credits are additional to what would have been produced in the absence of a carbon market.

Challenge

A lack of federal legislation makes long-term planning difficult, as, until recently, a federal cap-and-trade program was widely anticipated. This environment of uncertainty throughout North America and lack of federal direction on climate change has reduced the current value of carbon and the willingness of the tribe and others to make future investments in carbon offset projects.

Recommendation

Until a larger regulated cap-and-trade market system is established, indigenous communities can take advantage of smaller voluntary markets or individual carbon sales. These voluntary markets can sometimes favour communities over larger industrial projects, as their buyers are often looking for carbon offsets that come with “co-benefits” to communities. Co-benefits are additional socioeconomic or ecological benefits that communities realize as a result of carbon offset projects.

Challenge

These projects often require strong partnerships that can be difficult and time-consuming to establish.

Recommendation

Plan for a longer time frame from inception to project implementation. Although good partnerships can take time to establish, they often can provide significant value, and in many cases, projects cannot proceed in their absence. Evaluate different potential project partners before making a final decision.

Sources Cited

Altman, J. (2001). *Sustainable development options on aboriginal land: The hybrid economy in the twenty-first century*. Discussion Paper 226. Canberra, Australia: Australian National University Centre for Aboriginal Economic Policy Research.

Altman, J. (2003). People on country, healthy landscapes and sustainable Indigenous economic futures: The Arnhem Land Case. *The Drawing Board: An Australian Review of Public Affairs*, 4(2), 65–82.

Cooke, P., Russell-Smith, J. & Whitehead, P. (2009). *Culture, economy and ecology of fire management in North Australian savannas: Rekindling the Wurrk tradition*. Clayton South, Australia: CSIRO Publishing.

Funk, J, & Kerr, S. (2007, August). Restoring forests through carbon farming on Maori land in New Zealand/Aotearoa. *Mountain Research and Development*, 27(3), 202–205.

Millennium Ecosystem Assessment. (2005). *Ecosystem and human well being: Synthesis*. Washington D.C.: Island Press: World Resources Institute.

Sheehan, J. (2010). Indigenous Carbon Property Rights. Retrieved from http://www.prrs.net/papers/Sheehan_Indigenous_Carbon_Property_Rights.pdf

Smith, S. A., & Madras, M. L. (2009). Forest offset credits: A cornerstone of sustainable development on Aboriginal lands. Canada: Climate Change @ Gowlings. Retrieved from <http://www.mondaq.com/canada/article.asp?articleid=91714>