



THE ROLE OF COOPERATIVES IN FORESTRY

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EXECUTIVE SUMMARY

The ability to pool resources, lower unit cost and increase revenues can be key to any business, but especially to the forest and agricultural sector. Cooperatives provide a business structure that facilitates the ability of farmers and foresters to generate the volume of material necessary to economically create value-added products, increase market access, lower cost to individuals for goods and services, and ultimately better manage the resource.

In 2012 agricultural cooperatives generated \$4 billion in revenues for their owner-members. Famous Cooperative brands include Sunkist, Ocean Spray, and Welch's. In total there are over 100 million people belonging to 47,000 Cooperatives across the U.S. today. The role of U.S. Forestry cooperatives surged modestly in the 1990s and early 2000s, but waned with the recent recession. Lessons learned from that experience, from the ongoing success of international forestry cooperatives, and from other cooperative ventures illustrate the potential of cooperatives in forestry. Greater use of the cooperative business structure offers opportunities to the forestry community to increase the achievement of individual goals while maximizing the benefit to the marketplace and to the forest.

INTRODUCTION

Ultimately, as a civilization, nations, or individuals, how we manage our Natural Resources may define our success and sustainability. Few of us, as individuals, feel we understand well our place in, or effects on global systems - so each of us strives, in large or small part, to address what we can. Many of us join or financially support groups that we feel can expand our influence, or improve our chance for success. Formal collaborations or cooperatives, even among seemingly competing individuals, can enhance the ability to effectively function and compete with other groups. As Darwin noted:



Photo credit: Harry Groot

“There can be no doubt that a tribe including many members who...were always ready to give aid to each other and to sacrifice themselves for the common good, would be victorious over other tribes; and this would be natural selection.” - Charles Darwin 1871

Greater cooperation between those involved in managing forests and producing forest products could have a positive impact on forests. This report discusses how collaborative forestry and forest products enterprises can apply lessons learned from successful cooperatives to enable better private forestland management, and to increase the competitiveness of forest resource-based businesses.

BACKGROUND

Natural resource management can take many forms and focus on a host of specific aspects. The focus of this report will be on land-based renewables because they are responsive to human management and have the potential for long-term sustainability. Renewable resources are narrowly defined here as things that grow (not solar, wind, or geothermal resources), come from the soil, and which fall into two broad categories: derived from agricultural or forestry practices. Historically, agricultural resources have been those crops grown or nurtured for a specific product or purpose in highly controlled, man-made environments, while forest resources have remained comparatively “wild.” That has changed somewhat over the years with the advent of intensively managed tree plantations, but in most parts of the world, forest species are highly dependent on the local/regional ecology and their stewards “take what they get.” This is not to say that humans haven’t influenced forests for millennia, but merely to point out that influence is relatively small when directly compared to farming.

Differences in the degree of management between agricultural and forested lands may explain why there are many examples of successful cooperatives in agriculture, but few in forestry. Yet, structured cooperation holds great promise for private forest landowners.

The forest products sector has historically been one in which there’s been considerable collaboration between competing individuals and firms, but very few successful cooperatives, i.e. formalized legal entities committed to a collaborative business model. Agricultural Producer’s cooperatives are a major part of the farming industry (Ocean Spray Cranberry Growers, Blue Diamond Almond Growers, Florida Natural Citrus Growers, numerous dairy and grain enterprises, for instance,) collectively generating over \$170 billion in 2012 revenues, with almost \$4 billion going back to its members as dividend payments (USDA Statistical Information Service, 2013.) Since forestry is considered to be part of the Agriculture Sector as deemed so by the United States Department of Agriculture, it seems odd forest-related cooperatives have not gained more traction. However, while forestry is classed as an agricultural activity, the long versus short rotation of the “crop” plays a huge role in the cash flow and management of an associated Cooperative venture. One objective of this report is to explore that dichotomy, and propose opportunities to increase the profitability and effectiveness of the sector’s businesses by structuring as Cooperative enterprises.

COOPERATIVES IN THEORY

Cooperatives, or “Co-ops”, can be considered to be near the pinnacle of a “hierarchy of collaboration” just short of family or kin-based relationships. Scientists David Rand and Martin Nowak (Rand and Nowak, 2013) divide the “mechanism of cooperation” into five levels: direct reciprocity, indirect reciprocity, spatial selection, multi-level selection, and kin selection (Figure 1). Another way to word this list might be:

- 1) **Direct exchange** - I’ll help you with the hope and expectation that you’ll help me when I need it,
- 2) **Indirect exchange** - I’ll help Sara since I heard that she helped Pedro, with the expectation that one of them (or their friends) is likely to help me in the future,
- 3) **Group association** – I’ll help Omar from town since people in this area tend to help each other, or I’ll help Cheryl from church since someone from church is likely to help me,
- 4) **Group cooperation** – we’ll work together to get this done for each other since competing as a group will bring more benefits than competing individually, and
- 5) **Family** – I’ll help this person because they’re family.

Competition within a group quickly demonstrates that it is better to compete in a highly cooperative group than in one that is not. In farming and forestry this can lead to the formation of a legal entity such as a Cooperative that formalizes the benefits and responsibilities of collaboration with binding contracts. These can be either short-term or long-term arrangements, on a per-project or a continuous basis.

A misconception that surfaces in introductory meetings frequently is that cooperatives are somehow “communistic.” Participants often fear they will lose control of, or perhaps even lose ownership of their forestland by joining a Cooperative. This is not possible under U.S. and state laws. Cooperatives are strictly direct or representative voluntary associations that generate returns to individual members based on their specific participation and investment; land tenure is not affected. A central tenant of communist philosophy is that all “means of production” are jointly (or collectively) owned. Thus, at least in theory, under communist systems, productive land for forest and farms is collectively owned and managed for the maximum welfare of society.

Although cooperatives are formed for collective benefits, the key difference is that the land remains privately owned and managed.

There are many anecdotal examples of successful long-term cooperative relationships between individuals; however they’re generally based on trust, which is gradually built over years, or even decades of neighborly interactions. Collaboration at the level of two or even a few individuals is relatively easy to accomplish. Moving up in complexity, it is possible for even more people to work informally together toward a common goal, with common management values and objectives. However, there can be a limit to the effectiveness of this kind of arrangement because it lacks the framework to allow participants to feel adequate control, participation, risk mitigation, and benefit to make it sustainable over the long-term. It’s also too easy for one member or another to inspire negative feelings by not contributing equally (Rand and Nowak call these members “defectors”). Game theory suggests that there are many situations when it is to the strategic benefit of an individual to act as a defector, or go against what benefits the group.¹ This is where a formal arrangement makes sense: members of the group understand the benefits and make a commitment to participate (financially, managerially, and legally.) While cooperatives have been mentioned as the “pinnacle entity,” it’s really the properties of a cooperative organization that are important. The actual entity can be a Sub S corporation, a regular corporation, an LLC, or even a B-corp² or LC3.

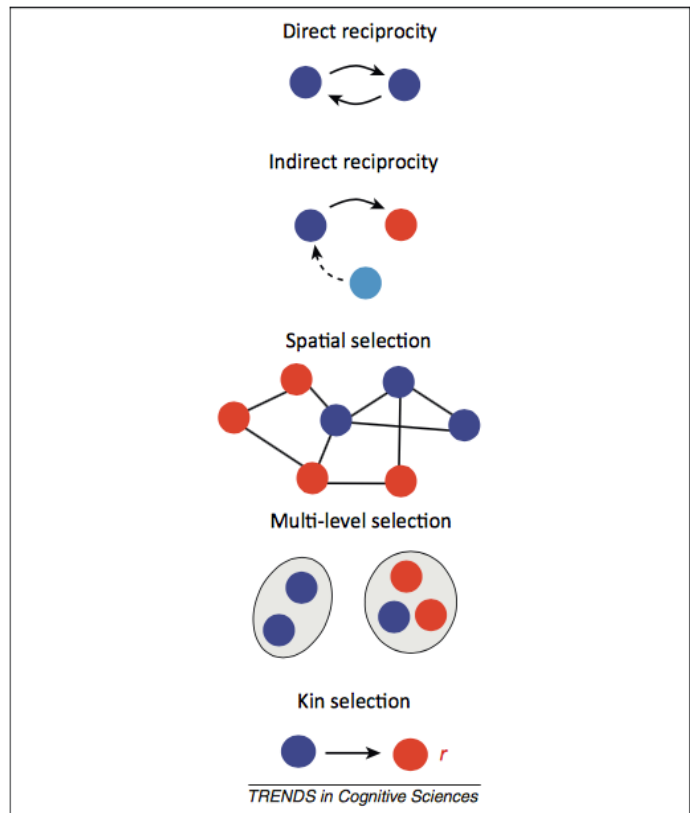
¹ According to psychologists, game theory is a mathematical formalization of social interaction and strategic behavior (Levine, 2015).

² See Dovetail report on B-corps at:

http://www.dovetailinc.org/reports/Benefit+Corporations+and+Certified+B+Corps_n663?prefix=%2Freports

Figure 1: Five Levels of Cooperative Mechanism

Source: Rand & Nowak, 2013



Seven Guiding Principles of Cooperatives

- 1. Voluntary and Open Membership** — Cooperatives are voluntary organizations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political, or religious discrimination.
- 2. Democratic Member Control** — Cooperatives are democratic organizations controlled by their members (one member, one vote), who actively participate in setting policies and making decisions. The elected representatives are accountable to the membership.
- 3. Members' Economic Participation** — Members contribute to, and democratically control, the capital of their Cooperative. Part of that capital is usually the common property of the Cooperative. Members allocate surpluses for any or all of the following purposes: developing the Cooperative, possibly by setting up reserves; benefiting members in proportion to their transactions with the Cooperative; and supporting other activities approved by the membership.
- 4. Autonomy and Independence** — Cooperatives are autonomous self-help organizations controlled by their members. If they enter into agreements with other organizations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their Cooperative autonomy.
- 5. Education, Training, and Information** — Cooperatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their Cooperatives. They inform the general public, particularly young people and opinion leaders, about the nature and benefits of cooperation.
- 6. Cooperation Among Cooperatives** — Cooperatives serve their members most effectively and strengthen the Cooperative movement by working together and with other local, national, regional, and international Cooperatives.
- 7. Concern for Community** — While focusing on member needs, cooperatives work for the sustainable development of their communities through policies accepted by their members.

One unique aspect about the Cooperative business structure is that historically they are formed to provide services primarily to *their owner-members*. This ownership structure tends to focus management decisions **internally**, especially in forest cooperatives as the forest drives many decisions and there is a self-preservationist disincentive for actions with negative consequences. In contrast, many for-profit business entities have an **external** focus because the needs of their shareholders, partners, and customers can drive a majority of their activities.

Cooperative businesses are usually guided by a set of seven principles that reflect the best interests of those members. Today, more than 100 million people are members of 47,000 U.S. Cooperatives, enabling consumers to secure a wide array of goods & services (USDA, 2013). The key points of a cooperative entity have been developed by the International Cooperative Alliance (see text box above).

There have been a couple of dozen forest-related cooperatives formed in the U.S. over the last 30 years and their experience has been analyzed by two studies performed by E.G. Nadeau (Nadeau, 2013) and H. Groot (Groot, 2010); Nadeau's study looked at the Lake States region and while Groot's scope was national. They each found that cooperatives have been primarily organized by landowners seeking to capture increased returns from their forests while maintaining control over their forest's management. One of the driving motivations of these Forest Landowner cooperatives was to achieve specific forest management objectives the landowners felt were not being achieved with traditional (industry-driven) forest management. Specifically, according to research done by the United States Forest Service (USFS), private forest landowners tend to rank income generation lower in importance than non-economic objectives, such as aesthetics, privacy, recreation, wildlife habitat, and family legacy considerations (NWOS, 2006).³

To date, Forest Landowner Cooperatives (FLCs) have yet to achieve the kind of success achieved by traditional agricultural cooperatives. In the analyses referenced above it was noted that failure to achieve widespread success is attributable to: lack of sufficient capital to achieve profitability, member expectations that are often out-of-line with what could reasonably be expected from such a business, and untenably high operating costs. The economic factors are not unique to these cooperative ventures, but are common problems of small business in general.

FOREST LANDOWNER COOPERATIVE SUCCESSES

Despite the problems noted above, there have been notable successes in the development of the Forest Cooperative model, which are embodied in the current stable of forest cooperatives:

- Landowners have collaborated successfully to reach landscape-level goals. Most of the cooperatives formed to date have managed to attract 10,000 to 20,000 acres under their management umbrellas, and many of them and their associated foresters felt they'd achieved a high-level of excellent forestry practices on those acres.
- Since aesthetics is typically the number one objective of private forest landowners, the vast majority of FLC members were not interested in heavy harvesting practices (like clearcuts, or even-aged variants like shelter tree or patchwork group selection harvests). They were able to make their preferred choices (typically, of uneven-aged management) practical by having a professional forester on staff or contract to provide advice, oversight, and consistent supervision. This occasionally meant accepting lower returns on their harvests, but that concession was in return for achieving their non-financial objectives.

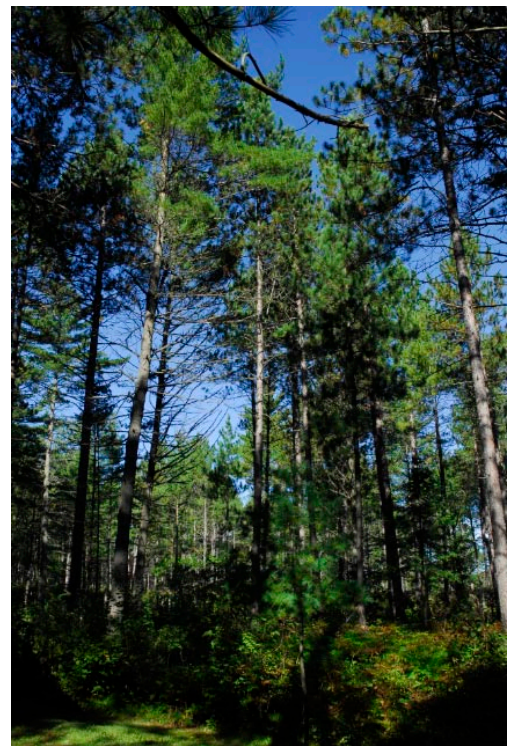


Photo credit: www.partnersinforestry.com

³ While the rank order of these six objectives varied in different regions, rarely was income generation higher than third and aesthetics was most frequently first.

- By exploiting the Cooperative model, primarily using the power-of-aggregation:
 - For services (foresters and woods workers)
 - Bundling the sale of harvests
 - Sharing equipment
 - Bulk purchase of supplies
 - Increasing access to cost-share and grant programs

In these ways, Forest Landowner Cooperatives have behaved and succeeded in much the same way that traditional agricultural cooperatives have succeeded - they met members' multiple objectives at an acceptable cost-benefit ratio.

FINANCIAL SUCCESS AT LOWER HARVEST INTENSITY

As noted above, most forest cooperatives represent a collective group of 10,000-20,000 acres. In contrast, Ag cooperatives often represent millions of acres. Thus, it is worth considering how forest cooperatives might benefit from increased acreage under management and thus a larger working land base. Increased acreage would satisfy two conditions that would contribute to financial success:

1. Generating adequate funds for a strong working infrastructure (administration, overhead costs, quality management, benefits, etc.).
2. Securing a sufficient throughput of products.

Forests, unlike annual agricultural crops, have long rotations (40 to 120 years) and more acres under management could provide an ability to keep and maintain expensive machinery and skilled crews to work more consistently. Larger scale could also provide enough throughputs to more effectively market forest outputs.

Having greater acreage in forest cooperatives would support the economics of lower intensity harvests preferred by most FLC members. Lower intensity harvesting requires a larger ratio of growing acres to harvested acres to have sufficient transactional volume to sustain the business. Having a larger land base available would also allow for the second condition to be met - that of having higher throughput. Logs and lumber are commodity products (much like corn, soybeans, or chickens) and the prices are both volatile and driven by supply and demand.

Lower intensity harvesting is a result of Forest Landowner Cooperatives historically being triple bottom line driven organizations - pursuing multiple objectives more or less equally (economic, environmental, and social.) But, in a free market, management is constrained by pressure to make "normal" business decisions primarily on the basis of what's best for the economic health of the business. This is an overriding constraint unless the members are willing to forego a certain amount of financial gain, which is often the case with forest land owners. A logical solution to this constraint is to increase the acreage available for harvesting in a given timeframe in order to allow lower intensity harvests while also generating a more or less even flow of forest outputs in a volume sufficient to attract buyers. One result would be a more consistent and sustainable cash flow. At the time that current FLC's were organized, organizational options were limited to either for-profit or not-for-profit corporations. Now, the B-Corp organizational format - a subset of for-profit business structures that allows for the accommodation of mission-driven, triple bottom line objectives (a non-profit component) - offers new forest cooperatives a solution to a long-standing problem (17 February 2015 Dovetail Report).

COOPERATIVE CASE STUDIES

Flexible Manufacturing Networks

Cooperation among competing entities is not new, nor particularly innovative, but the concept's appeal has waned and surged over time. In the 1980's and 90's a movement around Flexible Manufacturing Networks (FMN) was active in the U.S., based on success in Europe—particularly in northern Italy. FMNs were a collaborative technique where firms that were normally competitors would work together on a specific project or contract for which they'd be individually uncompetitive. A group in the U.S., the Consortium for Manufacturing Competitiveness, organized under the Southern Governor's Association's Southern Technology Council, championed FMNs in thirteen southern States with modest success. One notable example of success was when three wood product firms in Kentucky successfully won a \$3M dollar contract for a Disney World installation. At the time, none of those firms had ever achieved \$1M in annual sales on their own! After that experience they went on to collaboratively bid on other projects, even as they continued to pursue their own independent business interests.

Woody Biomass Energy Production Cooperatives of Austria

FMNs share characteristics of Just-in-time, Cluster, and Lean Manufacturing, but with a local-centric perspective.⁴ They perhaps illustrate best the benefits of cooperatives where they excel at bringing diverse resources together to produce a “good” which none of the individual participants could accomplish alone.

In the Forest Products sector, there has been significant Cooperative activity in Nordic countries for decades and will be the focus of a further Dovetail Report. Currently, one region stands out as an example of entrepreneurial Cooperative development, and that's Austria, home to a number of biomass energy cooperatives. These are almost exclusively small scale, farmer run ESCOs (Energy Supply or Service Companies.) They're run as cooperatives, partly to qualify for tax and government backed loans, but more so to spread the benefits and risk to neighbors and participants. Here's how they work:

Farmers, who almost all have forests as part of their holdings, harvest woody biomass during the off-season — usually thinnings, or cleanup of salvageable debris after a harvest. This material is prepared, either as chunk wood or as chips, and left to dry for the next heating season. When the heating season arrives, the farmer-owned boiler begins producing hot water for heating a network of homes and businesses, and the customer/members pay for that heat. The heating districts range from a handful of neighboring structures to entire villages. The farmers have a cost effective way to use their low-value forest products; home/business owner members have an inexpensive source of heat from renewable sources with minimal carbon footprint; and the money circulates locally.

The growing adoption of this model in Austria is helping the country achieve both energy independence and carbon footprint reduction on their path to a 100% renewable energy supply by 2030. As of 2009, in the State of Upper Austria alone, there were over 40,000 wood chip and pellet heating installations, along with some 300 district heating networks and 12 biomass power plants. At that time, their non-renewable portfolio stood at 33.3% of the State's energy use. The Austrian's have been very open to sharing their experience and strategies with interested North Americans and have presented at numerous conferences sponsored by the Biomass Thermal Energy Council. They have also met with individual

⁴ All these manufacturing techniques are strategies to reduce the waste, cost, and time to make an end product.

and regional groups, specifically with a trade delegation of farmer-practitioners in New England and the Lakes States in 2010.

Pinaleños Ecological Restoration Project

While widespread cooperatives like those in Austria or the Nordic countries have developed in North America, there are cooperative ventures taking place, and discussions among interested producers continue to occur. One project in particular – the Pinaleños Ecological Restoration Project (PERP) in southeast Arizona – illustrates the potential of independent entities collaborating toward a common goal. In this project there is Federal, private, Municipal, and ENGO (environmental non-governmental organization) participation. The project is a USFS funded project designed to protect endangered species by reducing the risk of catastrophic wildfire in the Coronado National Forest. PERP was designed to reduce woody biomass (i.e., fuel) through forest thinning to protect the habitat of two endangered species endemic to the area. The National Wild Turkey Federation is administering the grant with the local USFS Ranger’s staff providing technical assistance and supervision. The project’s silviculturalist saw an opportunity to adapt the success of a regional wood products firm in New Mexico (the non-profit Gila WoodNet and its for-profit arm Gila Wood Products) to a goal of generating value added products from the thinning work.

Additional consultants from other ENGOs were invited to join, and soon developed a matrix to evaluate the raw materials available and what products could be made from them. The area around PERP has little developed forest products industry since it’s predominantly desert at lower elevations whereas the national forest is at the higher elevations of the Pinaleños Mountains. The group identified a suite of products that could be made from the wood removed through thinning and which were viable based on a local market comprised of individual consumers, businesses, and entrepreneurs. Efforts continue, supported by a local mining operation, on utilizing even more of the woody biomass as land cover to prevent erosion. Most recently, a grant was awarded to develop a wood-based enhancement product to further enrich woody biomass-based mulch into a growing medium. Members of this group are currently participating in developing a national cooperative marketing and product aggregation initiative. This initiative will also involve buyers and technical resources to advance the development and use of woody biomass-derived products for their secondary carbon sequestration properties.

THE FUTURE OF FOREST COOPERATIVES

Forest cooperatives in the U.S. have admittedly had mixed results individually, but opportunities for forest-related initiatives continue to grow. Changes in the available organizational types (Limited Liability and B-Corp being the most notable) provide opportunities for setting-up a “user-friendly” legal structure and making it easier to do business successfully. Changes in the marketplace—primarily the growth in technology and opportunities in the woody biomass energy arena, as well as the focus on “local”—offer new opportunities for forest cooperatives. There are active models of success internationally in the energy supply sector, and models of collaborative initiatives that can be built upon to exploit a variety of markets, products, participants, and business types.



Photo credit: Harry Groot

Forest cooperatives have historically enjoyed strong support federally from the United States Department of Agriculture and the Natural Resources Conservation Service, both from the programmatic and grant-funding standpoints. A number of states have also provided support for forest-focused cooperatives. This support still exists and offers emerging enterprises opportunities to jump-start their organizations development.

THE BOTTOM LINE

Today there are over 10 million family forests in the U.S.⁵ as compared to about 2 million family farms.⁶ Cooperatives offer both a very successful business model and an opportunity for small forest landowners to pool their resources to better and more successfully compete. Whether organized to achieve common management objectives of a group of landowners, or created by entrepreneurs/businesses to achieve specific production, aggregation, or marketing objectives, cooperatives are a strategic association with many possible benefits. Today, agricultural cooperatives clearly illustrate the economic potential domestically, and the success of forest cooperatives, both domestically and internationally provide further support to the opportunity. Successful forest cooperatives are operating in the U.S. today, and the opportunity to use this model much more widely exists.

⁵ According to the USDA's most recent National Woodland Owner Survey, there are 10.2 million family forest ownerships in the U.S covering a total of 252 million acres (Forest Service 2008). More information available at:

<http://www.fia.fs.fed.us/nwos/>

⁶ According to the USDA's most recent census of agriculture, there are 3.2 million farmers operating 2.1 million farms on 914.5 million acres of farmland across the United States (2012 Census of Agriculture), more information available at:

http://www.agcensus.usda.gov/Newsroom/2014/05_02_2014.php

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