Emerging Markets Program Assessment: The Central American Market for U.S. Softwoods

Final Report
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Emerging Markets Program Assessment:
The Central America Market for U.S. Softwoods

Final Report – AMENDED TO ADDRESS ALL MARKETS IN THE REGION

Date: July 31, 2017
Title: Central America Market Assessment and Development Program for U.S. Softwoods
Target market: Central America
Target commodity: Softwood lumber, treated lumber
Lead authors: Bryan Smalley
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              Crystal Collier
              Jerry Hingle
Emerging market agreement: #2015-10 Central Funds
                           Activity E15MX-SW2CA

INTRODUCTION

This is one of several Emerging Market Program (EMP) projects that the U.S. forest products industry is undertaking to reach potential new emerging markets. Each project is led by a team of highly experienced researchers backed by the organizational and administrative support of forest products cooperators with decades of experience administering FAS-funded market development programs. Without support from FAS’s EMP, the U.S. forest products industry would not be able to carry out this project.

Each project is divided into two phases: Phase 1 is an assessment of whether the market and what technical or promotional assistance is needed to grow the market. Phase 2 involves carrying out the technical and/or promotional assistance recommended in the market assessment after obtaining FAS’s approval to do so.

All of the projects are commencing well, with the market assessments complete or well in process. In some markets, the assessment recommends that the industry should not invest in promotional or technical assistance as would be envisioned in Phase 2. While in other markets the assessment concludes that significant opportunities exist and industry should quickly move toward providing technical assistance in Phase 2.
Central America

Several indicators show strong potential for growth in U.S. wood product exports to Central America, including sharp growth in construction activity calling for increased wood consumption, reduced tariffs under the CAFTA-DR free trade agreement, and strong growth in U.S. exports to the market.

However, the U.S.’s share of this market remains very low and at this stage little is known about the market and what technical and/or promotional support is needed to expand consumption of U.S. lumber. This Market Assessment and Development Program will address these issues and offer solutions to increase exports of value-added U.S. softwoods to the region.

This project, led by the Southern Forest Products Association and the Southeastern Lumber Manufacturers Association, seeks to assess the market’s lumber industry, establish whether the U.S. industry is competitive in the market, and determine what action is needed to grow the market for U.S. softwood lumber exports.

The project is supported on a cost-share basis by FAS Emerging Markets Program funds. Without support from FAS the U.S. forest products industry would not be able to carry out this project.

MARKET ASSESSMENT CHECKLIST

- **Who conducted the assessment and what makes them an expert?** The assessment was conducted by individuals with decades of experience in the U.S. forest products industry and extensive backgrounds in developing new emerging markets for American softwood lumber. Project principals are described below.

- **How did you conduct the assessment?** Thorough desk research on the region’s timber industry was conducted, followed by in-country interviews in Nicaragua and Guatemala of timber trade association executives and construction design professionals. Interviews were held in Guatemala City and Managua where most of the timber importers and construction firms are located.

- **What are the opportunities in the market?** Research confirmed that significant opportunities exist for U.S. wood products in Guatemala and Costa Rica which face housing shortages, are taking steps towards developing wood-frame construction, and domestic wood producers are unable to meet demand. The research team concludes that opportunities are limited in Nicaragua, Belize, El Salvador, and Honduras.

- **What is the assessment of the food and rural business system needs of the emerging market?** A thorough description of the market’s characteristics, trade flows, price competitiveness, and considerations needed when selling to the market can be found below.
What are the recommendations or measures necessary to enhance the food and rural business system needs and develop the market for U.S. agricultural products? The project team recommends that the U.S. provide technical assistance in Guatemala and Costa Rica, by way of technical seminars and one-on-one training, in order to develop the markets to the mutual benefit of both the domestic and U.S. industries. Detailed follow-up work is outlined below.

EXECUTIVE SUMMARY

This assessment primarily addresses Nicaragua, Guatemala, Belize, and Costa Rica. While Panama shows promise for U.S. exports, the market does not qualify for EMP assistance. El Salvador is too small to purchase full container loads and Honduras is a competitor to the U.S. softwood industry.

In Nicaragua, wood consumption is low due to inadequate sawmilling and kiln drying capacity, resulting in low-quality lumber available on the market. Opportunities exist for U.S. softwood lumber in concrete forming and residential construction and tourism developments, but without a broad incentive to increase consumption and intense competition from neighboring Honduras, the research team recommends that the U.S. not pursue this market at this time. Similarly, Belize is considered a mature market with limited growth potential.

Guatemala, however, is a promising market for U.S. softwoods. The country lacks sawmilling technology, it’s facing a 1.5 million housing unit shortage, and the Guatemalan government and construction design professionals are working to encourage wood-frame construction. Moreover, U.S. softwoods have several advantages over domestic softwoods and competing softwoods imported from Chile.

FAS/Guatemala City agrees that the market is ripe for development for U.S. agriculture. Thus, the research team recommends that the U.S. industry work with allied organizations to provide the technical assistance and training needed to grow the Guatemalan market. Doing so would be mutually beneficial as the country seeks to fill a growing housing shortage.

Costa Rica also presents opportunities for U.S. softwoods given its long-term need to import softwood lumber and acceptance of U.S. lumber sizes and grades as well as wood-frame construction. The research team recommends pursuing this market as well.
DIFFICULTIES ENCOUNTERED

No difficulties have been encountered in this project.

MARKET ASSESSMENT -- NICARAGUA

1. Lumber market characteristics

Softwood lumber production in Nicaragua totals nearly 120,000 cubic meters (283 million board feet), primarily Carribeo and Acarpo. While domestic stock is dense and good for flooring and concrete forming, logging in national forests is very restricted and faces high taxes, high extraction costs, and high stumpage prices. Wood buyers interviewed report that Nicaragua has an immediate need to import softwoods, and has primarily sourced from Honduras and Chile.

Nicaragua’s wood consumption is low due to inadequate sawmilling and kiln drying capacity resulting in low-quality lumber available on the market. Illegal logging continues to be an issue in Nicaragua, and much of the fiber is traded by a “wood mafia” and/or Chinese buyers. Retailers stated that few buyers recognize the differences between...
U.S. and Chilean pines, as well as the benefits of chemically preserved lumber; therefore, the need for training would be beneficial. The market accepts U.S. sizes (1x6, 1x10, 1x12, 2x4, 2x6 in standard lengths) and CCA is the preservative chemical used.

Expatriates are importing lumber for residential construction and tourism developments. Contacts suggested a very good opportunity for wood used in concrete forming. Chile and Honduras (Radiata, Orcapa, and Caribaea) are the U.S.’s main competitors in the market. Contacts commented that Honduran pine prices were half that of U.S. imports. Nicaragua does not have a “wood building culture” but there is interest in learning more about U.S. softwood products.

End uses -- exteriors

Pressure-treated lumber is primarily used in expatriate beach homes (pergolas, decking) and can be very expensive at $1.50 per board foot. Nicaraguan treaters primarily use CCA.

End uses -- furniture and interiors

Furniture producers interviewed report frustration with inconsistency in the supply and quality of domestic softwoods and are seeking alternative sources, primarily hardwoods from the U.S. It appears that U.S. sizes and grades would easily be accepted in furniture and doors, as well as for wood used in domestic window and door production.

End uses – Concrete forming and pallet stock

Importers report a need for imported softwoods for concrete forming, noting that domestic supply is too dense for these applications. Importers also report having difficulty in sourcing IPPC certified (e.g., kiln dried) pallet stock and often fumigate with methyl bromide to meet requirements for pallets used internationally. As such, pallet kits are a niche opportunity in this market.

End uses – Construction

Like other Latin American markets, Nicaragua is not a “wood culture” when it comes to construction. Wood is not perceived as durable or suitable in seismic zones and few in the construction design community are familiar with wood-frame construction. However, architects interviewed expressed interest in comparative construction costs (wood vs concrete block) and suggested partnering with local universities and architects to explore developing this segment.
Domestic lumber prices

The research team observed retail prices for U.S. and Chilean softwoods ranging from $916 to $1,550 per thousand board feet. Lumber observed was in standard U.S. dimensions in 1” and 2” thicknesses, 3” to 8” widths, and 8’ to 14’ lengths.

2. Importing logistics and financing

Ocean transportation from the U.S. is relatively quick, with a 16 to 18-day sail time from the port of New Orleans. As Nicaragua has no Caribbean seaport, all goods are transported by ground from Honduras or Costa Rica (the port of entry is primarily Porta Cortez in Honduras and Porta Limon in Costa Rica). Inland transportation takes less than two days and is somewhat costly at roughly $1,000 per container.

While the national currency is the Nicaraguan Cordoba, trading takes place in U.S. dollars. The market is accustomed to 90-day terms after a trading relationship has been established. Nicaragua is approved for the financing incentives offered by EXIM bank and USDA’s GSM-102 program.

3. Third country imports/competition

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Honduras</td>
<td>234</td>
<td>349</td>
<td>2407</td>
<td>69%</td>
</tr>
<tr>
<td>Guatemala</td>
<td>899</td>
<td>773</td>
<td>1,020</td>
<td>29%</td>
</tr>
<tr>
<td>Chile</td>
<td>50</td>
<td>64</td>
<td>68</td>
<td>2%</td>
</tr>
<tr>
<td>United States</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>--</td>
</tr>
</tbody>
</table>

Source: Global Trade Atlas

4. Potential growth of U.S. softwood lumber exports

Given low wood consumption in Nicaragua and no broad incentive to expand demand that is otherwise being met by imports from Honduras, the research team sees limited growth in this market.
MARKET ASSESSMENT -- GUATEMALA

1. Lumber market characteristics

Field interviews by the research team in Guatemala included meetings with USDA/FAS staff, representatives of the Chamber of Construction and Forestry, treaters, distributors, and joinery manufacturers.

FAS/Guatemala City reports that the time is right to approach this growing market. Its economy is steadily growing, its currency is stable, and there’s a strong interest to develop agriculture trade between Guatemala and the U.S.

Guatemala consumes 30 million cubic meters (71 million board feet) of lumber annually. The country has significant domestic wood supply, but extraction of logs is only done during their dry season of October to May. Deforestation is widespread, primarily due to wood used for cooking as well as aggressive sourcing from India and China. While plantation forests do exist, most of that production is destined for export markets. The country harvests 16 species of conifer, primarily Pinus caribaea (Caribbean pine) and Pinus oocarpa (Egg-cone pine), with a roughly 16-year rotation.

Guatemala lacks sawmilling technology to better process domestic materials and 80% of domestic lumber is sold green-wet. Due to a widespread presence of blue-stained wood, buyers are indifferent to this appearance defect. The benefits of dried lumber are becoming more recognized by consumers, but the capacity for drying is limited.

Domestic grades are “Firsts”, “Seconds”, and “Clears”, although the market readily accepts U.S. sizes, with 1” x 12” x 10’ being the preferred dimension, with lengths greater than 14’ welcomed. Rough material is preferred.

Most softwoods are imported from Chile, sized in 1” and 2” thicknesses, in 8” widths, and in 15’ lengths. Chilean radiata is advantaged by being kiln dried, but buyers in Guatemala recognize its lower design values/strength and view it as too knotty and “white” in color. Domestic softwoods and product imported from Honduras -- while denser than Chilean product -- are seen as too resinous. Thus, U.S. Southern Pine is uniquely advantaged as being kiln dried and at the preferred density.
**End uses -- Exteriors, treated lumber**

There are five treaters in Guatemala with testing laboratories who treat to AWPA standards. CCA is the predominant preservative. Treaters interviewed report preferences for surface-treated cypress in outdoor applications as treated pine is seen as easily warping and splitting.

**End uses – furniture and interiors**

A sizable amount of furniture is produced in Guatemala. Manufacturers interviewed report preferences for clear material (although sound knots are acceptable) dried to 10% to 12% moisture content. Producers prefer material in 1” and 4/4 thicknesses, in 5” minimum widths, and in 10’ lengths. Product is sourced from multiple countries: Door, window, and joinery items are mostly produced using mahogany, cedar, African mahogany, white oak, poplar, and Chilean radiata pine; local pine is used for door cores. They report that the availability of kiln-dried wood is declining and U.S. softwoods would be a good substitute for poplar if priced on par.

**End uses – Concrete forming and pallet stock**

Due to limited kiln drying capacity in the market, this segment also presents opportunities for U.S. softwoods. Material handling used internationally must comply with heat treatment standards, which are difficult for domestic producers to attain.

**End uses – Construction**

Guatemala faces a 1.5 million housing unit shortage and, like elsewhere in the region, concrete block is the preferred building material. However, the country’s Forestry Association of the National Chamber of Industry is currently working with domestic and international organizations to develop and promote wood-frame construction. A few local companies are already building structures with domestic lumber, locally called “Canadian-style” homes, which are typically second homes primarily outside of the city. Wood is also being used for temporary or “emergency” homes with a 20-year lifespan.

While construction design professionals interviewed expressed enthusiasm for wood-frame construction and interest in assistance with building techniques, they point out that regulatory
issues are a concern. Building codes do not favor wood, building permits are difficult to obtain, banks are reluctant to finance wood structures, and few architects and builders are familiar with this construction method.

Nevertheless, a few pioneering firms are making progress in this segment. They point out that wood-frame construction cost is on par with concrete block (at roughly $27 per square foot) and wood structures can be completed much more quickly. Builders expressed interest partnering with the U.S. to help design low-cost housing tailored to the Guatemalan market as well as promoting wood housing in partnership with local universities and engineers.

Domestic lumber prices

Guatemala is a price-conscious market, although importers report that Southern Pine – considered “exotic” – could be sold 30% to 40% higher than Chilean material.

<table>
<thead>
<tr>
<th>Softwood Lumber Prices in Guatemala</th>
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</thead>
<tbody>
<tr>
<td>Species</td>
</tr>
<tr>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Chilean radiata pine, wet</td>
</tr>
<tr>
<td>Chilean radiata pine, dry</td>
</tr>
<tr>
<td>Cypress</td>
</tr>
</tbody>
</table>

2. Importing logistics and financing

Ports of entry are Puerto Barrios or Santo Tomas on the east coast and Puerto Kinsale on the west coast. Sail time from the U.S. east coast is roughly 30 days. Inland transportation is lengthy, taking as much as one month.

Sixty-day letters of credit are often used, and payment typically received 40 days after receipt. Guatemala is approved for the financing incentives offered by EXIM bank and USDA’s GSM-102 program.

3. Third country imports/competition

Chile has a dominant share of the Guatemalan market, followed by Brazil. Importers report that kiln-dried Chilean radiata pine is advantaged over domestic softwoods but is reputed as being too soft and tends to warp and twist when compared to harder domestic species. Imports from Honduras are expected to grow as salvaged/beetle kill lumber increasingly becomes available from that country.
Guatemala’s imports of softwood lumber (MT)

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<tr>
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</thead>
<tbody>
<tr>
<td>Chile</td>
<td>19,012</td>
<td>15,267</td>
<td>17,871</td>
<td>54%</td>
</tr>
<tr>
<td>Brazil</td>
<td>1,710</td>
<td>3,180</td>
<td>5,764</td>
<td>17%</td>
</tr>
<tr>
<td>Uruguay</td>
<td>3,182</td>
<td>4,557</td>
<td>5,670</td>
<td>17%</td>
</tr>
<tr>
<td>Mexico</td>
<td>0</td>
<td>2,185</td>
<td>1,517</td>
<td>5%</td>
</tr>
<tr>
<td>Panama</td>
<td>0</td>
<td>0</td>
<td>1,451</td>
<td>4%</td>
</tr>
<tr>
<td>United States</td>
<td>206</td>
<td>1,460</td>
<td>860</td>
<td>3%</td>
</tr>
</tbody>
</table>

Source: Global Trade Atlas

4. Potential growth of U.S. softwood lumber exports

The research team sees strong potential for increased exports to Guatemala should efforts be made to grow the market. Given the country’s housing shortage, budding efforts to develop wood-frame construction in the country, and the inability of domestic producers to meet demand, the outlook is positive for long-term growth in U.S. lumber demand. Exports are currently rising, and are expected to reach $300,000 in 2016. With efforts to develop the market, shipments are forecast to triple to over $1 million during the coming three years.

This growth can only be achieved by providing the Guatemalan trade with technical assistance needed to choose and apply U.S. softwoods.

MARKET ASSESSMENT – Belize

1. Lumber market characteristics

Seventy-nine percent of the country is forested, with 70% broadleaf forest and the remainder pine stands. The market is considered mature by exporters as it routinely imports U.S. Southern Pine. Imported wood is primarily used in the construction sector (framing houses) although steel is a strong competitor in this sector. The market accepts U.S. sizes (1x6, 1x10, 1x12, 2x4, 2x6 in standard lengths), though there continues to be confusion over board foot calculations. Tongue & groove siding is commonly imported. Chromated Copper Arsenate (CCA) is the preservative chemical used in the market by two local treaters for exterior applications such as decking.

2. Importing logistics and financing

Ocean transportation from the U.S. is relatively quick, with a three-day sail time from the port of Miami. The port of entry is Belize City or Big Creek in the South. Customs requires an import license and treatment certificate.
Belize’s national currency, the Belizean dollar, is pegged to the U.S. dollar and trading takes place in U.S. dollars. The market is accustomed to 30 to 90-day terms after a trading relationship has been established. Belize is approved for the financing incentives offered by EXIM bank and USDA’s GSM-102 program.

3. Third-country imports/competition

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<tbody>
<tr>
<td>United States</td>
<td>6,675</td>
<td>7,040</td>
<td>8,061</td>
<td>82%</td>
</tr>
<tr>
<td>Honduras</td>
<td>27</td>
<td>481</td>
<td>1,726</td>
<td>18%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0</td>
<td>0</td>
<td>66</td>
<td>--%</td>
</tr>
</tbody>
</table>

Source: Global Trade Atlas

4. Domestic lumber prices

Interviews with producers and retailers show pine prices averaging $730 per thousand board feet.

5. Potential growth of U.S. softwood lumber exports

Given wood consumption in Belize of domestic supply and no broad incentive to expand demand that is otherwise being met by imports, the research team sees limited growth in this market.

MARKET ASSESSMENT – Costa Rica

1. Lumber market characteristics

Costa Rica has extensive hardwood resources and substantial stocks of rough teak for export to Southeast Asia. However, local forestry has fallen to imports of cheaper forest products. With an annual reforestation rate of 3,500 hectares (8,650 acres), sustainability is grim. With wood imports entering duty free and rising costs for domestic wood production, the domestic industry has little incentive to increase domestic stocks.

2. End uses

Wood products are primarily consumed in pallets (42%), construction (25%), export markets (20%), furniture (10%), and other uses (2%). The import of U.S. sawn wood, mainly Southern Pine, peaked in 2010 and 2014 at $1.4 million and in 2016 at $1.8 million, becoming the third
source of imported sawn timber after Chile and Brazil. U.S. Southern Pine is used almost entirely in residential construction following North American construction systems. In 2015, Costa Rica produced approximately 5.4 million pallets, primarily used for transport of export goods. Some 5.3% of domestic pallets are made of Chilean softwoods, with inexpensive domestic softwoods accounting for the remainder.

The market accepts standard U.S. sizes, grades and preservative retention levels although there remains confusion over real vs actual sizes of U.S. softwoods.

3. Third country imports/competition

Chile has a dominant share of the market while the U.S.’s share is less than 6%.

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<tr>
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</thead>
<tbody>
<tr>
<td>Chile</td>
<td>49,711</td>
<td>46,335</td>
<td>57,584</td>
<td>86%</td>
</tr>
<tr>
<td>Brazil</td>
<td>0</td>
<td>601</td>
<td>4,543</td>
<td>7%</td>
</tr>
<tr>
<td>United States</td>
<td>2,432</td>
<td>1,827</td>
<td>3,861</td>
<td>6%</td>
</tr>
</tbody>
</table>

Source: Global Trade Atlas

4. Potential growth of U.S. softwood lumber exports

Costa Rica readily accepts U.S. lumber grades and sizes and wood-frame construction is more common in the market relative to other countries in the region. Meanwhile, declining domestic production assures continued demand for imported material. Should the U.S. undergo technical training on the merits of U.S. softwoods relative to Chilean imports, the research team forecasts exports quadrupling to more than 12,000 metric tons.
5. Who are important allies and partner organizations?

In Costa Rica, several organizations have expressed interest in partnering with the U.S. in providing technical assistance in using U.S. softwoods. These include:

- National Forestry Office in Costa Rica (ONF)
- ICO Maderas (Costa Rican Institute of Wood), currently addressing the subject of using wood as a structural building material
- Federated Institute of Engineers & Architects of Costa Rica (CFIA)
- Costa Rican Chamber of Construction (CCC)

SHOULD THE U.S. UNDERTAKE A LONG-TERM DEVELOPMENT STRATEGY?

Several factors point to Guatemala being a potentially strong market for U.S. softwoods should the U.S. industry undertake a development strategy. The country lacks sawmilling technology, it’s facing a 1.5 million housing unit shortage, and the Guatemalan government and construction design professionals are working to encourage wood-frame construction – which already has a foothold in the market. Moreover, U.S. softwoods have several advantages over competing softwoods imported from Chile. Working with the Guatemalan government and industry would be mutually beneficial as the country seeks to fill a growing housing shortage.

FAS/Guatemala City agrees that the market is ripe for development for U.S. agriculture. Thus, the research team recommends that the U.S. industry work with allied organizations to provide the technical assistance and training needed to grow the market.

Costa Rica also presents opportunities for U.S. softwoods given its long-term need to import softwood lumber and acceptance of U.S. lumber sizes and grades as well as wood-frame construction. The research team recommends that the industry also work toward developing this market.

Nicaragua, Belize, Honduras, and El Salvador on the other hand, present only niche opportunities for U.S. softwoods. Overall consumption is small and at this stage there are no broad incentives to increase consumption and demand is easily met by imports from Honduras. The research team recommends that the U.S. not pursue these markets at this time.

WHAT WOULD ASSIST IMPORTERS AND ALLIES/PARTNERS TO BEGIN IMPORTING U.S. WOOD PRODUCTS?

The U.S. industry has identified several government and trade groups in Guatemala and Costa Rica that are eager to partner with the U.S. industry to develop the market for wood products, particularly in the area of wood-frame construction. These include the Chamber of Commerce, the Chamber of Industry, the Costa Rican Institute of Wood, and the technical training institutes INTECAP and Instituto Tecnico Vocacional. The research team recommends partnering with these groups to provide:
**Technical seminars** – Much work is needed to train lumber construction design professionals on U.S. softwoods lumber grades, sizes, the structural values of U.S. softwoods, and how to design and build with wood. Local industries are eager for assistance in this regard and quite ready to partner with the U.S. Training would enable local construction design professionals to better specify the right product for the end-use and, equally as important, assist the countries in filling a housing shortage with safe, affordable, and durable wood-frame housing.

Technical seminars should be held in Guatemala City, Guatemala, and San Jose, Costa Rica, where most construction firms are located.

**One-on-one training** – One-on-one technical assistance should be provided to the countries’ pioneering builders that have already begun building with wood. Several of these firms identified by the research team welcome the U.S. industry’s assistance in specifying the right product for the project. By better enabling them to apply U.S. material, the risk of converting to Chilean imports is reduced.

**COOPERATION**

Support and assistance from the officers and staff at the Foreign Agricultural Service posts in Guatemala City and Managua is critical to this project. SFPA/SLMA is grateful for their guidance on contacts and regulatory considerations with respect to lumber imports.

**FOLLOW-UP**

The project team recommends that Phase 2 follow-up technical assistance outlined above commence soon. A proposal will be submitted to the FAS grants team soon.
PRINCIPALS

Industry experts assigned to this project are:

The project team includes the leadership of SFPA and SLMA and two wood product specialists. In addition to career experience in international trade and forest products, the team members have conducted needs assessments of importers in numerous emerging markets and provided corresponding technical assistance and training to importers resulting in immediate export sales to those markets.

**Bryan Smalley** has fifteen years of experience in the U.S. lumber industry and is president of the non-profit lumber trade association Southeastern Lumber Manufacturers Association (SLMA). The association represents independently-owned sawmills, lumber treaters, and their suppliers in 17 states throughout the Southeast. SLMA’s small to medium enterprises (SMEs) are located throughout the rural South. Mr. Smalley also has nine years of experience with Timber Products Inspection overseeing quality control and industry standards for wood packaging.

**Tami Kessler** has over thirty years’ experience in the U.S. lumber industry working for the non-profit lumber trade association Southern Forest Products Association (SFPA). Since 1980, SFPA has had an international market development program in place dedicated to increasing exports of value-added Southern Pine lumber products. Through these programs, the Southern Pine lumber industry has gained a dominant market position in many Caribbean countries, carved new market niches in Europe, and gained an important foothold in India, the Middle East region and China.

**Crystal Collier** is an experienced lumber trader with seven years of experience managing market assessments and export development programs for wood products in emerging Caribbean, Central and South American markets. Her work includes educating local importers and lumber distributors on U.S. wood products applications, sizing standards, and grading rules. Prior to her work in the lumber industry, she worked with the Alabama Department of Agriculture promoting value-added agri-products to international markets with the help of MAP-funded programs. Ms. Collier is fluent in Spanish and an important part of this project team.

**Jerry Hingle** has fifteen years of experience developing international markets for value-added U.S. wood products. For 10 years he directed the international marketing and trade policy program of the Southern Forest Products Association in more than 20 countries. Prior to that he oversaw the American Forest & Paper Association’s international marketing and research programs for wood products in Asia, Mexico, and the European Union. He previously served as Executive Director and CEO of the Southern United States Trade Association (SUSTA) where he oversaw several EMP projects centering on high-value food and agricultural products. He has successfully managed MAP, FMD, and EMP programs for nearly 20 years. He is a strong steward of FAS-administered program integrity, program compliance, and sound program evaluation.