

Washington State Forest Products Export Trends and Future Outlook

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By: Ivan Eastin, CINTRAFOR Director

Exports have always been a strong component of the Washington state economy, and this is particularly true for the forest products sector. However, since 2003 Washington has seen its share of total US exports drop from 4.9% to 4.2%, despite the fact that the total value of Washington exports increased from \$35.4 billion to \$53.7 billion (a 51.6% increase). These trends are a clear indication that total export growth in Washington State has lagged the rest of the country across all sectors of the economy.

In contrast, Washington's share of total US wood products exports grew from 13.1% to 18.4% between 2003 and 2010, rising from \$863 million in 2003 to \$1.52 billion in 2010 (a 76.2% increase); indicating that Washington's forest products exports grew at a faster rate than the rest of the country as a whole. In 2010, forest products represented the third largest export category in Washington state, following aircraft and agricultural products. In 2010 the forestry and wood products sectors employed over 21,000 workers and generated over \$15.4 billion in gross business income within the state. Clearly, the forest products sector is an important contributor to the economy of Washington state. However, its economic impact is

even greater in rural, timber dependent areas of the state where the forest products industry provides family wage jobs.

Despite the poor economic situation in Washington state, the forest products export sector rebounded strongly in 2010 (Figure 1) with the biggest increases coming in log and lumber exports. These two product categories accounted for 52.5% and 27.8% of total exports, respectively while value-added exports represented 19.8% of total exports.

Washington is by far the largest exporter of wood products in the US with a market share of just over 18% in 2010 (Figures 2 and 3). Exports of wood products from Washington were more than two and a half times larger than those of the second largest exporter in 2010. Over the past eight years, Washington has increased its share of US wood exports from 13.1% to 18.4%. In fact, Washington was the only one of the top 5 wood exporting states to register consistent growth in market share throughout the period of the US recession, 2006-2010 (Figure 3).

The vast majority of the forest products exported from Washington went to Asia and Canada (Figure 4 and Table 1). Last year, exports of wood products from Washington state to China exceeded those to Japan for the first time, although exports to both countries registered positive growth in 2010. New and emerging markets that demonstrated strong growth in 2010 included Australia, Vietnam and Taiwan (Figure 5).

Almost three-quarters of forest product exports from Washington passed through the Ports of Longview, Seattle and Tacoma in 2010 (Figure 6; Table 2). Particularly noteworthy is the fact that the Port of Olympia has shown strong growth since 2008. However, all of the top 10 ports in Washington state saw their exports of wood products increase by double digits between 2009 and 2010.

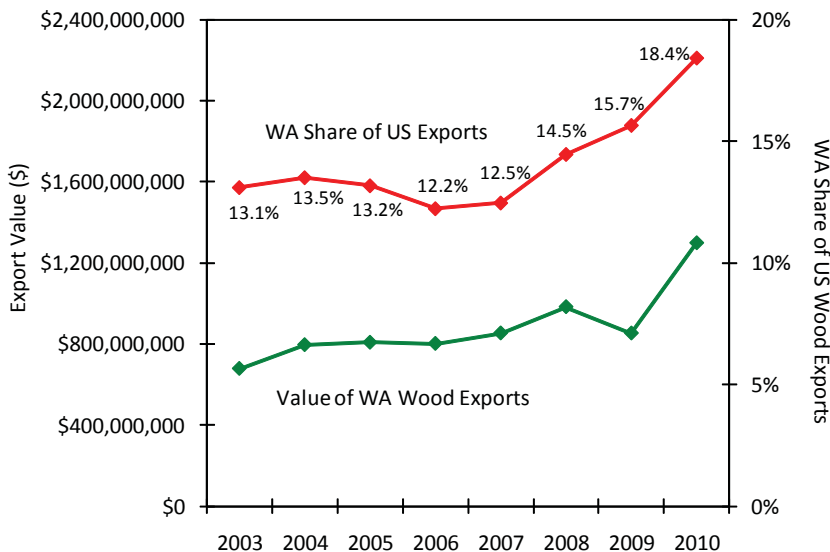


Figure 1. Washington's exports of wood products have increased by 76% since 2003 and now represent 18.4% of total US wood exports.

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Director's Notes

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The Center for International Trade in Forest Products addresses opportunities and problems related to the international trade of wood and fiber products. Emphasizing forest economics and policy impacts, international marketing, technology developments, and value-added forest products, CINTRAFOR's work results in a variety of publications, professional gatherings, and consultations with public policy makers, industry representatives, and community members.

Located in the Pacific Northwest, CINTRAFOR is administered through the School of Forest Resources at the University of Washington under the guidance of an Executive Board representing both large and small companies, agencies, and academics. It is supported by state, federal, and private grants. The Center's interdisciplinary research is carried out by university faculty and graduate students, internal staff, and through cooperative arrangements with professional groups and individuals.

Japanese Earthquake a Humanitarian Disaster

On March 11, 2011 at 2:46:23 pm central Japan was rocked by a huge magnitude 9.0 earthquake that triggered an enormous tsunami with waves as high as 38 meters (125 feet) and that traveled as far as 6 miles inland. Referred to as the 2011 Tohoku Earthquake, it was the fourth largest earthquake in recorded history and the largest to hit Japan with an estimated cost of between \$250 billion and \$300 billion. The earthquake resulted in the deaths of approximately 12,259 people with an additional 15,315 missing. Post earthquake estimates suggest that between 100-150,000 buildings were damaged, including approximately 80,000-100,000 houses, leaving at least 250,000 people homeless.

While the scale of destruction in central Japan is almost beyond comprehension, the government has begun efforts to provide temporary housing for people who have lost their homes. In the short-term the government has requested that the Prefabricated Construction Suppliers and Manufacturers Association, working with its industry members, provide almost 33,000 temporary housing units by the middle of May.

The Tohoku Earthquake will have significant implications for the wood sector in Japan, both in terms of manufacturing and trade. The earthquake knocked out approximately 25% of Japan's plywood manufacturing capacity as well as a large percentage of the sawmill capacity within Miyagi Prefecture. As a result, Japanese imports of logs, lumber and structural panels will increase substantially for the next several years. Japan is the third largest importer of wood products, behind the US and China, with imports totaling \$10.5 billion in 2010. Wood chips were

the largest import product category (\$2.5 billion) followed by lumber (\$2.3 billion), plywood (\$1.7 billion), builders joinery (\$1.1 billion) and logs (\$1 billion). Imports of wood products through February 2011 (prior to the earthquake) were up by 24.7% over 2010.

It is expected that the earthquake will not have a significant impact on imports in the short-term. However, wood imports will begin to increase later this year as Japan mobilizes to rebuild the infrastructure (roads, railroads and ports) around Miyagi prefecture. In the longer-term, imports should expand substantially as work begins to replace the damaged and destroyed housing in the region. Japanese statistics indicate that 60% of the destroyed housing units in the affected area were wooden, of which 68% percent were post and beam and 28% were 2x4 construction. Based on recent CINTRAFOR research, the reconstruction effort will require an additional 650,000-750,000 cubic meters of softwood lumber alone. This is equivalent to between 10.6% and 12.2% of Japan's total softwood lumber imports in 2010. Clearly, the challenge facing Japan is significant, but a phrase often used by the Japanese earthquake survivors serves to sum up the situation: ganbatta kudasai (tough it out, be strong). It is this quality that will support the Japanese people as they work together to rebuild from this tremendous disaster.



The tsunami following the Tohoku Earthquake resulted in widespread destruction.

Research over the past several years by CINTRAFOR indicates that the outlook for forest products exports from Washington State should remain strong through at least 2012, although regulatory constraints in some key markets could adversely impact the competitiveness of US exports in the future. The following points summarize the key issues that are expected to influence the international demand for wood exports from Washington State over the next two years.

Opportunities for Exports of Wood Products from Washington State

1. The Russian log export tariff remains at 25% and has reduced Russian log exports to Japan and China by 42% and 89%, respectively, greatly increasing the demand for US logs and lumber. Since 2007 Russian log exports have plummeted from 49.3 million cubic meters to 19.9 million cubic meters. The loss of Russian logs from the marketplace has substantially increased the competitiveness of US wood products.

2. New laws requiring verification of legality for imported wood products in the US, the EU and Japan should provide a strong opportunity to increase US exports to Japan, China, Vietnam and Thailand.

3. The continued weakness of the US dollar, combined with relatively strong currencies in Japan, the EU and Canada, will substantially increase the international competitiveness of US wood products in the near term.

4. The adoption of green building programs in Japan and China provide new market opportunities for US certified wood and value added wood products, especially energy efficient products such as wood windows.

5. Changing demographics in both Japan and China will result in a huge increase in the number of senior citizens. In addition, cultural changes in Japan and China continue to reduce the number of three generation families leading to an increased demand for senior housing facilities. This cultural change provides an opportunity to increase the use of wood, both in the construction of senior housing as well as in the interior finishes and exterior living areas of these facilities. CINTRAFOR researchers are looking at the senior housing market during upcoming research trips to China.

6. The US-China Build program (that is managed by CINTRAFOR) will be

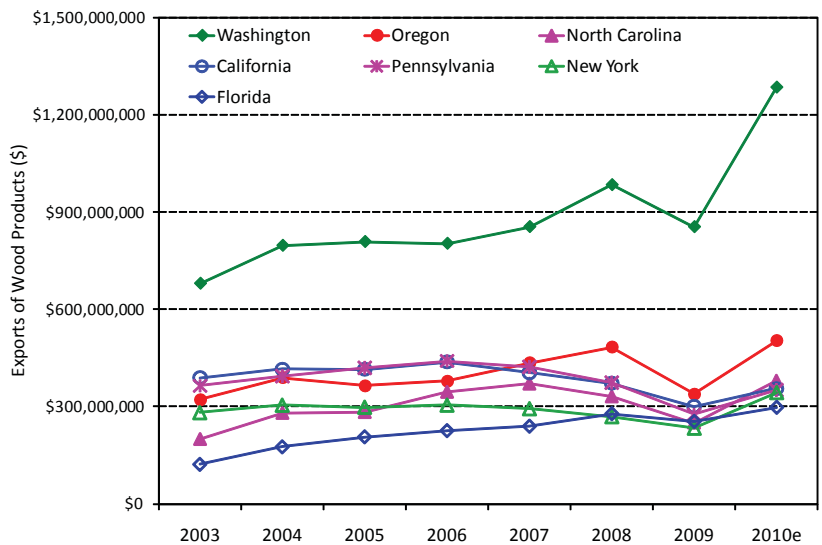


Figure 2: Washington is the largest exporter of wood products in the US and the value of exports from Washington are more than double those from Oregon

conducting two trade missions to China in 2011.

The first mission, scheduled for the week of May 16th, will provide US and Washington small and medium-sized exporters with the opportunity to present their products and meet Chinese builders, developers, architects and design professionals during seminars in Shanghai, Jinan and Dalian. Over the past two years, the US-China Build trade missions have been very successful, with participants reporting sales exceeding \$53 million and the creation or retention of over 270 jobs. Reported exports sales from the USCB program represent 17.5% of total wood products exports from Washington state over the 2009-2010 period.

7. CINTRAFOR is conducting research to identify new and emerging markets for US wood products including Vietnam, Thailand and Indonesia. For example, a new Due Diligence regulation

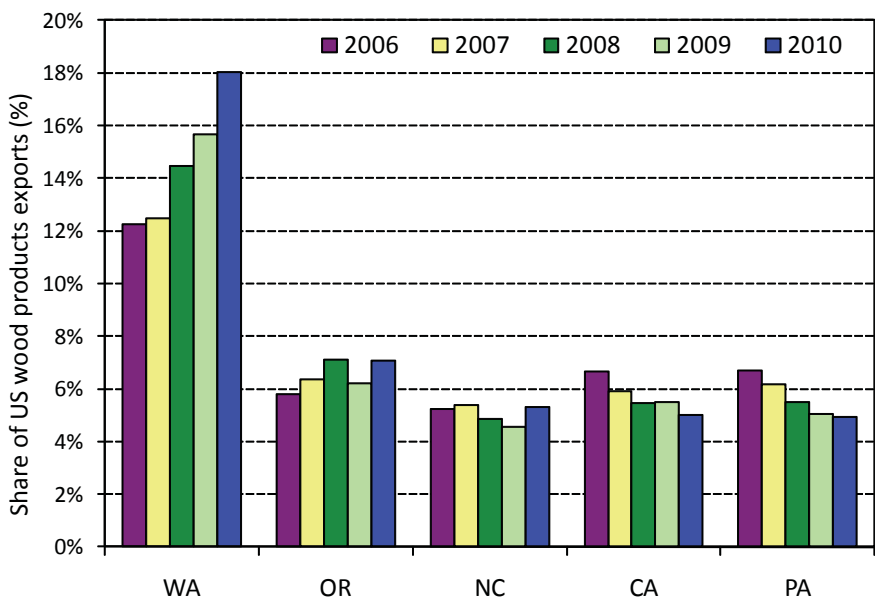


Figure 3: Washington has consistently increased its share of total US wood exports during the recession

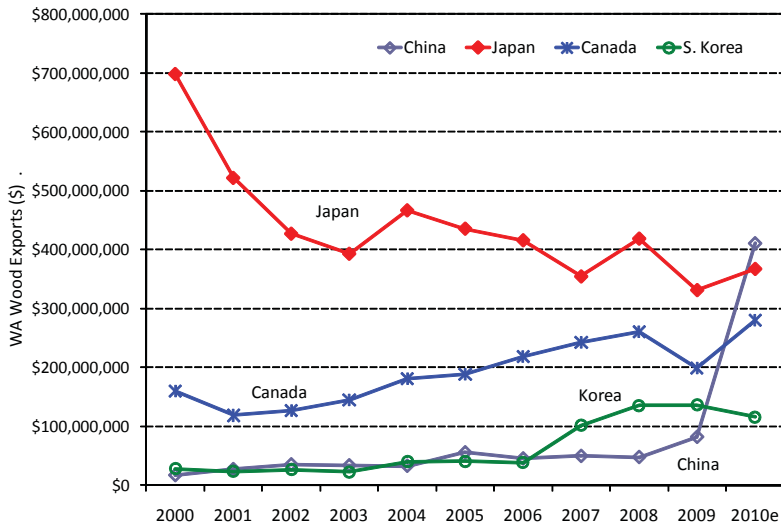


Figure 4: The major markets for Washington wood products are primarily in Asia with greatest growth occurring in exports to China (up by 400% in 2010).
Source: <http://wisetrade.org>

in the EU requiring certification of legality for wood imports recently brought a delegation of Thai industry experts to Washington State to explore the possibility of sourcing lumber and components for their furniture and flooring manufacturers. CINTRAFOR will follow up with a research trip to Thailand later this spring to identify the product specifications required by Thai furniture and flooring manufacturers.

Although the outlook for US forest products remains strong, regulatory constraints and non-tariff trade policies in several foreign markets could adversely affect the competitiveness of US exports. CINTRAFOR research seeks to identify policies that could harm US exports and assists US agencies and industry associations to identify potential solutions. The following points summarize some areas of concern where CINTRAFOR is cur-

rently conducting research in consultation with US agencies and trade associations.

Potential Threats to Wood Exports from Washington State

1. The Japan Ministry of Agriculture, Forestry and Fisheries has developed a program designed to double the market share of domestic wood by 2015 through the use of national and prefectural subsidies that favor the use of domestic wood over imported wood. CINTRAFOR continues to provide the US Embassy in Tokyo with information to support their efforts to have these programs modified or repealed.
2. The Japan Ministry of Land, Infrastructure and Transport recently announced a program to increase the specification and use of wood in publicly funded buildings. This program is widely interpreted by Japanese builders and developers

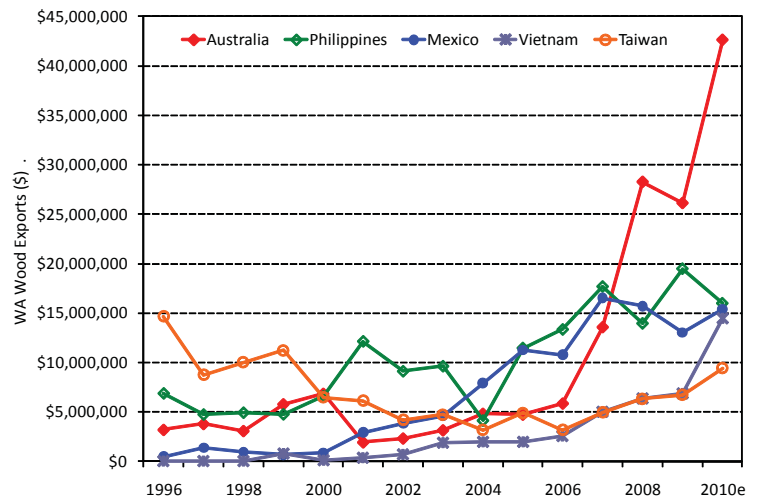


Figure 5. Among other exports markets, growth has been greatest in Australia (up by 63% in 2010) and Vietnam (up by 111%).
Source: <http://wisetrade.org>

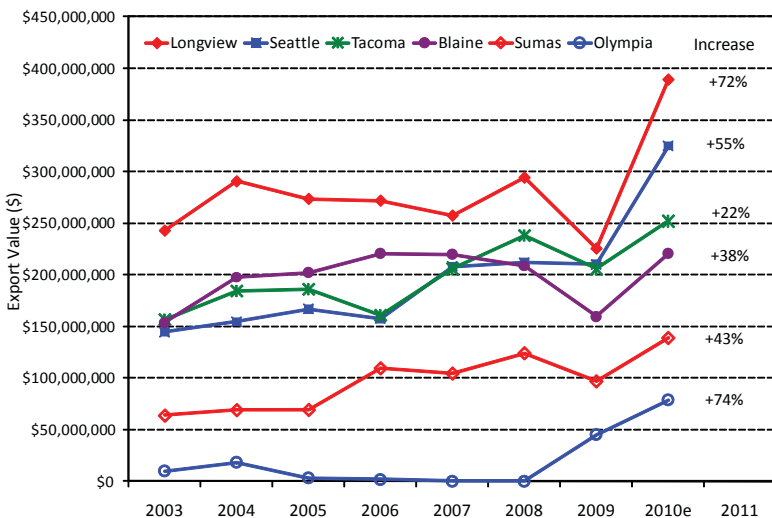


Figure 6. Over 90% of Washington's wood products pass through just six ports, with each showing strong growth in 2010.

as being designed to favor domestic wood over imported wood. CINTRAFOR is working with the US Embassy in Tokyo to ensure that this program does not discriminate against imported wood products.

- 3 The Japanese residential green building program has several sections where domestic wood is explicitly favored over imported wood. CINTRAFOR has provided the US Embassy in Tokyo with life-cycle assessment (LCA) data showing that both domestic wood and imported wood are equivalent in terms of their environmental impact. At the request of the US Embassy, CINTRAFOR has made several LCA presentations to Japanese ministry and industry groups encouraging the equivalent treatment of domestic and imported

wood products within the green building program.

CINTRAFOR continues to work with the Softwood Export Council and the Evergreen Building Products Association to assess the impacts of non-tariff policies that can adversely impact the competitiveness of US wood products, including the trade of illegally harvested wood, the development and implementation of a new Chinese

forest certification program and subsidies that encourage Japanese builders to favor domestic wood over imported wood. The primary objective of CINTRAFOR's research activities is to provide industry managers with timely information and analysis that can help them to increase the competitiveness of their products in existing markets and identify new and emerging market opportunities. **4**

Table 1. Summary of Washington State Exports of Forest Products.

Source: <http://wisetrade.org>

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010e
TOTAL	\$994,682,412	\$778,207,798	\$691,147,649	\$679,308,636	\$796,308,164	\$808,064,803	\$802,485,290	\$854,053,369	\$983,352,262	\$853,790,087	\$1,284,185,670
China	\$17,135,662	\$27,352,156	\$35,449,759	\$33,738,293	\$33,068,590	\$55,848,929	\$45,516,856	\$49,787,581	\$47,962,108	\$82,271,899	\$411,507,584
Japan	\$698,658,363	\$522,275,643	\$427,575,563	\$393,532,747	\$467,246,495	\$436,077,729	\$416,390,920	\$354,967,301	\$419,236,891	\$331,746,111	\$367,773,739
Canada	\$160,266,975	\$118,943,485	\$126,778,616	\$144,915,637	\$181,148,457	\$188,910,844	\$219,169,334	\$243,032,654	\$261,086,609	\$199,078,110	\$280,640,412
S. Korea	\$28,163,431	\$23,353,420	\$26,396,170	\$22,869,928	\$39,955,337	\$41,280,514	\$38,877,926	\$101,647,887	\$135,383,734	\$136,195,171	\$116,215,339
Australia	\$6,855,361	\$1,947,658	\$2,340,798	\$3,165,545	\$4,836,464	\$4,752,019	\$5,871,342	\$13,587,087	\$28,269,048	\$26,125,083	\$42,610,010
Philippines	\$6,586,910	\$12,155,202	\$9,130,525	\$9,641,018	\$4,147,270	\$11,480,396	\$13,357,108	\$17,695,178	\$13,969,381	\$19,499,394	\$16,005,103
Mexico	\$885,201	\$2,929,367	\$3,844,032	\$4,631,629	\$7,932,357	\$11,264,382	\$10,783,352	\$16,527,568	\$15,719,546	\$13,044,777	\$15,418,926
Vietnam	\$117,238	\$396,793	\$696,006	\$1,913,011	\$1,986,955	\$1,949,590	\$2,576,368	\$5,012,846	\$6,343,126	\$6,846,730	\$14,462,348
Taiwan	\$6,477,904	\$6,152,673	\$4,188,461	\$4,750,280	\$3,192,281	\$4,905,826	\$3,166,337	\$4,939,170	\$6,365,815	\$6,719,641	\$9,430,344
Germany	\$25,985,565	\$13,855,654	\$6,434,831	\$9,244,249	\$8,317,200	\$11,136,314	\$8,494,088	\$10,405,976	\$13,515,862	\$8,626,368	\$7,490,275
Hong Kong	\$6,629,376	\$6,648,611	\$7,993,651	\$8,419,236	\$5,458,762	\$4,722,785	\$2,784,921	\$2,007,912	\$3,002,302	\$2,951,667	\$5,462,650
Indonesia	\$478,797	\$1,134,037	\$1,161,896	\$2,412,459	\$2,798,344	\$4,942,271	\$3,093,249	\$2,757,664	\$2,967,932	\$2,368,266	\$3,529,900
Italy	\$12,185,833	\$15,303,039	\$13,709,984	\$13,749,373	\$12,615,698	\$12,112,223	\$9,757,901	\$10,072,910	\$7,548,778	\$2,356,562	\$3,449,535
Thailand	\$1,678,052	\$1,635,247	\$1,582,233	\$1,955,828	\$2,172,872	\$1,369,287	\$1,698,086	\$947,969	\$1,005,598	\$1,062,692	\$2,042,813
UK	\$3,449,909	\$3,524,282	\$2,787,447	\$3,964,196	\$2,985,058	\$1,818,422	\$1,430,045	\$1,757,108	\$1,873,190	\$964,804	\$2,127,875
Panama	\$496,295	\$362,837	\$647,777	\$862,556	\$544,842	\$232,103	\$801,738	\$1,277,603	\$1,696,113	\$1,504,634	\$1,465,363
India	\$32,402	\$104,944	\$374,993	\$276,331	\$104,899	\$9,780	\$34,631	\$14,304	\$2,095,705	\$2,084,868	\$1,511,529
Singapore	\$62,538	\$87,844	\$171,147	\$231,905	\$141,432	\$156,311	\$74,345	\$312,651	\$654,441	\$550,211	\$1,025,648

Table 2. Washington State Forest Products Exports, by product type (\$1,000)

Source: <http://wisetrade.org>

	Longview	Seattle	Tacoma	Blaine	Sumas	Olympia	Lynden	Aberdeen-Hoquiam	Port Angeles	Everett	Total
Fuelwood/chips	\$0	\$987,796	\$303,466	\$3,837,668	\$444,237	\$0	\$140,775	\$10,823	\$40,175	\$4,430,126	\$7,415,678
Logs	\$357,527,917	\$40,391,091	\$112,076,359	\$1,559,602	\$355,614	\$72,312,717	\$27,764	\$24,674,366	\$15,862,336	\$17,225	\$624,962,767
Lumber	\$0	\$177,288,506	\$110,223,301	\$41,016,867	\$53,195,213	\$0	\$16,315,530	\$48,665	\$59,137	\$6,735	\$317,570,862
Veneer sheets	\$0	\$1,830,352	\$1,139,630	\$2,776,953	\$929,857	\$0	\$94,566	\$0	\$0	\$0	\$2,928,792
Millwork	\$0	\$3,063,079	\$606,516	\$17,885,047	\$21,791,960	\$0	\$1,795,155	\$0	\$108,563	\$32,000	\$40,226,604
Particleboard	\$0	\$1,755,606	\$7,279	\$12,274,410	\$2,986,875	\$0	\$1,773,608	\$0	\$58,811	\$0	\$6,734,770
Fiberboard	\$0	\$975,118	\$616,310	\$21,166,200	\$5,333,780	\$16,023	\$4,607,187	\$5,653	\$24,529	\$0	\$22,718,399
Plywood	\$0	\$35,983,601	\$922,136	\$43,742,668	\$8,776,883	\$0	\$8,532,665	\$0	\$0	\$0	\$69,198,180
Packings/pallets	\$0	\$165,243	\$267,829	\$802,965	\$552,297	\$0	\$314,740	\$0	\$0	\$0	\$3,415,825
Builders joinery	\$0	\$23,093,064	\$8,679,623	\$46,025,794	\$30,155,384	\$0	\$9,432,750	\$0	\$59,513	\$0	\$75,943,316
Other products	\$0	\$863,551	\$109,861	\$5,588,551	\$660,755	\$0	\$575,436	\$0	\$18,816	\$0	\$5,234,187
Total	\$357,527,917	\$287,614,194	\$235,343,730	\$199,730,197	\$125,308,327	\$72,328,740	\$43,610,176	\$24,739,507	\$16,248,599	\$4,430,126	\$1,176,349,380

SFR Graduate Students Serving in the Peace Corps

Master's International in International Forestry Program

By: *Dr. Ivan Eastin, SFR PCMI Program Leader (RPCV Liberia 1985-1987)*

The Peace Corps Masters International program (PCMI) offers graduate students the unique opportunity to integrate a master's degree program with overseas service as a Peace Corps volunteer. Today PCMI programs are being offered by 152 graduate programs located at 86 different universities in the US. The PCMI program is designed to produce Peace Corps volunteers who have additional education and skills to serve overseas. The PCMI program has been recognized as a vital PC program and has experienced rapid growth in recent years. Currently there are more than 350 students who are in their first year of graduate studies and who are waiting to receive their PC country of assignment placement. In addition, there are more than 340 PCMI volunteers currently serving overseas in Peace Corps. To date, there have been almost 1,300 graduate students who have successfully completed the PCMI program since its establishment in 1987. What follows are short summaries by the graduate students in the UW School of Forest Resources who have participated in the PCMI program.

Erik Peterson, Barjomot Tanzania, 2006-2008 *Environmental Volunteer*

I was placed as an Environmental Volunteer in Barjomot Village, Tanzania. As an Environmental Volunteer my work could be generally described as agricultural extension/public health and rural development. I carried out agricultural extension work through agricultural work (permaculture, soil conservation, agro-forestry, tree nursery, as well as beekeeping) and livestock work (Heifer Project International, cows, goats, chickens). All of this agricultural extension work was carried out in the form of establishing community groups and then working collaboratively towards incremental change. My public health work came in the form of HIV/AIDS projects and efforts. I did this both on my own, without outside resources (teaching in schools, teach the teachers, informally through the village) and with the help of grants (PEPFAR) and other organizations (World Population Institute, Adventist Development Relief Agency). We showed an HIV/AIDS video by way of roving field movie equipment to over 5,000 people. We also organized a three community dialogue with health workers, parents, students and religious leaders. Finally, I did rural development work by helping small businesses like fruit stands, vegetable growers and tree nursery managers learn to grow their business. And, above all, I spent time sharing experiences (drinking tea, lots of tea!; attending weddings, funerals, dinners, lunches, farming, laughing, dancing, singing...) with the stellar people of Barjomot Village.



Erik Peterson and a village elder.

Brian Bragg, Bambui Cameroon, 2007-2009 *Agroforestry Extension Agent*

I worked to partner with a village level farming union/organization. My primary responsibility was to promote the adoption of agro-forestry techniques aimed at conserving and improving farm productivity, establishing permanent farming systems, and conserving natural resources. This occurred through ongoing one-on-one farmer consultations, building collaborators, group level demonstrations, early adopters and project promoters. One approach used was to introduce complimentary rural activities which could help to generate income and provide multiple use benefits (e.g. mushroom/medicinal herb cultivation, live fencing/fodder crops, agro-forestry seed banks). The biggest impact, however, came with the organizational evaluation conducted at the end of the assignment, which effectively outlined the roles and responsibility of the farming union leadership, assessed the needs of the farming membership, and created a framework to respond to the ongoing needs and desires of the membership moving forward. I also worked with the umbrella association of farmers unions to increase collaboration between associated village groups and improve implementation of larger scale projects. Village youth were also organized to become village partners in pushing projects and promoting conservation and sustainable farming techniques.



Brian Bragg and four legged friend in Cameroon.

Seth Kammer, Sebo Ethiopia, 2010-current
Environmental Volunteer

It has been 5 months since I left Seattle and I can hardly believe it. The speed at which time is felt here is a reminder to me to get some research ideas flowing soon. Sebo, my host community, has been very kind to me. I have been learning the language little by little and am lucky enough to have a tutor that shares my compound. Next month the required Peace Corps Community Needs Assessment must be submitted. But the information gathering for it has been, so far, slow in happening. My counterpart and his organization run the Oromo Forest and Wildlife Enterprise that works out of Toli forest, a 30 minute bike ride, or 10 minute truck ride, from town. Half the trees commercially grown are native to Ethiopia and the other half are pines and eucalyptus from elsewhere.



Seth Kammer kayaking in Union Bay prior to departing for Ethiopia.

Having spent just a few months here, I get the impression that my work and research here could easily be mostly involved with the farming villages that surround Sebo. These farming communities host hard working and enthusiastic farmers ready to try new farming methods to improve crops and conserve their land. I recently attended a farmers training center and observed the farmers enthusiasm first hand. In addition, the agriculture extension workers are very interested in working with me and encouraging sustainable farming practices of agroforestry. At the farmers training center I was told I can use land to demonstrate how trees or other vegetation can be used for windbreaks, soil bands, construction material, nitrogen fixation and more. I hope I have the chance to work with erosion control because it seems that all the farms are working on hills and slopes and erosion is clearly a big concern of the farmers in the area.

Jake Grossman, Pindoyu Paraguay, 2009-current
Agroforestry Extension Volunteer

My assignment is Agroforestry Extension in the Environmental Conservation sector of PC-Paraguay. My main projects are extension with farmers and families (tree nurseries, agroforestry systems, green manures, gardens, citrus grafting, and yerba maté production) and environmental education (k-12 science and vocational classes, summer camps, and school projects such as trash management and tree planting). My secondary projects have included teaching English and sex ed. I regularly work with families, local institutions (farmers' committees, primary and secondary schools), and NGOs.

Without lots of agricultural and forestry projects to keep me busy, I have been forced to think about what I want to accomplish as a PC volunteer and how I can do the most good. I decided, some months in, that the best thing for me to do would be to diversify my projects in ways that I never dreamed I would do as an aspirante. In short, I have really committed myself to education. Changing the attitudes of the kids and youth in my community seems much more feasible and efficient than struggling with adults. Also, the profesores at my local escuela and colegio have been very cooperative. Some are even enthusiastic! I have always loved to teach, so I suppose this transformation isn't surprising. Still, I now spend hours a week doing lesson planning - something I did not foresee.



Jake and friends making drinking glasses from recycled bottles.

Paraguay has a big trash problem. Consumption and all of its inorganic garbage have arrived without the attendant advances in waste disposal, recycling, or even the understanding that old batteries and cans won't turn into fertilizer with time. Nowadays, digging a new garden entails turning up trash from the last few years a few inches under the soil's surface. Given this, I have tried to work the reuse of old materials into my projects. But begging for and carrying around all this trash sometimes makes me look a little eccentric. I usually don't know whether it is better to explain why I am stuffing things into my pockets or to quit without further incriminating myself.



**Peter Gill, Sama Ndiayen Senegal, 2010-current
Agroforestry Extension Volunteer**

I am an agroforestry volunteer, meaning that I work with farmers to plant trees and integrate agriculture with forestry. This year I will be working with farmers to propagate and graft citrus and mango trees; alley-crop nitrogen fixing trees like moringa and leucaena among field crops like corn millet and cowpeas; and plant thorny live fencing shrubs to protect fields from livestock. Protecting fields from livestock is a big issue here. Once a farmer has a good live fence, he can switch from growing peanuts/millet to cultivating more profitable crops like vegetables or grafted fruit trees (if there's a water source) or cassava (if there's not a water source). I am just embarking on most of the tree projects now and starting nurseries for the upcoming rainy season in July.



Peter Gill (front row) with village farmers and fellow Peace Corps volunteers.

I'm also working with a women's group on a community garden. The women's group has existed for some years, and they manage a successful cooperative vegetable market in the village. However their vegetable supply comes from the wholesale market in Kaolack, and so they have been motivated to begin a garden of their own. Last month I helped them get a Peace Corps grant for a chain link fence, cistern, seeds, and tools to get the garden started. According to the stipulations of the grant, the group also had to make a cash contribution to the project, and over 90 women each paid 700 FCFA (about \$1.50) in order to have membership in the garden. I'm also going to help the women plant a live fence around the garden, which should be functional within 2-3 years, and will replace the metal fence when it deteriorates in about five years.

In addition to working with farmers in their private fields, I have helped work in the village's communal peanut fields, which are managed to raise funds for the mosque and for the marabout, the religious leader. I am also interested in working with people here to plant trees for firewood to conserve the few trees in the area. A neighboring village, Keur Nen, has a communal woodlot (tree plantation) of eucalyptus. I have only seen it while riding by on a horse-drawn cart, but I plan to go back and learn about how they manage the woodlot, including both the silvicultural techniques they've used and how they have organized community members to work cooperatively on the project.

**Grover Yip, Mayo-Oulo Cameroon, 2008-2011
Agroforestry Extension Volunteer**

I was invited to Cameroon and assigned as an agro-forestry extension agent. This entailed sensitization of agro-forestry techniques which seek to blend agriculture and silviculture in an environmentally sustainable way that can be tailored to the local land & climate, and hopefully be integrated into their farming practices. For instance, alley cropping is a technique of integrating trees planted in several equally spaced rows (or alleys) in a field while crops are cultivated between these tree alleys. The objective is for the trees to act as natural suppliers of leaves and twigs which will be used as green manure (i.e. organic material or compost) for the plot to sufficiently meet the nutritional needs of the crops. Ultimately, should this technique become successfully implemented in my community, chemical fertilizer will not be needed. Other activities included sensitization of local farmers to the importance of trees, encouraging tree planting campaigns and sharing the need for responsible stewardship of their environmental resources.

Some in the community were exposed to concepts of agro-forestry techniques and other sustainable ecological management options that they can potentially implement to address some of their issues in the region. I had the pleasure of seeing a couple of techniques initiated, and I can only hope that adequate follow-up of their progress in the coming years will reveal improved cultivation and encourage adaptation of other environmentally sound practices.



Grover Yip working with a women's group who are starting up a nursery for tree seedlings.

The seed has been planted. 

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