Good afternoon, ladies and gentlemen. Let me welcome you to this quite timely conference being given for you in these most interesting of times. This conference on improving forest productivity for timber is to focus on the forest management science, practice, and policy for achieving productivity and sustainability. The intent is to assess the current situation, review management practices and tools, address policy issues, and identify research needs. An ambitious agenda indeed! And, one for which the Conference Planning Committee, as driven by the vision and motivation of Jerry Rose, should be roundly complimented. Please, let’s now formally open the heart of the conference’s proceedings by showing our collective expression of appreciation.

Now, on to the task at hand, where as your keynote speaker, my role is to initiate the proceedings, outline the key themes, and provide the motivational spark for focusing and stimulating your collective attentions.

The significance of the issues to be canvassed and the speakers to follow will ensure that the conference presentations and discussions will be relevant to your professional and personal lives. As I viewed the formidable task of developing an introductory overview for this conference, its scope and depth were immediately apparent.

How best should I go about meeting your needs and expectations in this regard? Do you need to be immersed in facts, figures, and impeccable resulting logic that point you to this promised land? Those of you who know me also know that I certainly have the capability to travel that route, probably to a fault! How much time did you say I had? Ah, the light—a possible alternative - would a broad-ranging and idea-based approach be more appropriate?

After much deliberation, I chose the latter pathway as a better vehicle to create the necessary philosophical doorway into this conference. As such, I will leave for the most part the facts and figures to my distinguished colleagues, who will speak directly to the conference’s myriad of specific topics over the next 2 days.

1 Dr. James A. McNutt, President & CEO, Jaakko Pöyry Consulting.

LESSONS OF THE PAST

So as we begin the journey through this doorway, consider this: The theory on which the truth of my (sic) position depends, appears to me so extremely clear, that I feel at a loss to conjecture what part of it can be denied. That population cannot increase without the means of subsistence is a proposition so evident that it needs no illustration. That population does invariable increase where there are the means of subsistence, the history of every people that have ever existed will abundantly prove. And, that the superior power of population cannot be checked without producing misery or vice, the ample portion of these too bitter ingredients in the cup of human life, and the continuance of the physical causes that seem to have produced them bear too convincing a testimony.

These words, penned not by me, but by the Reverend Thomas Malthus in 1798 in his “Essay on the Principle of Population,” were at the core of his economic philosophy addressing the then developing conflicting views on the future direction of the peoples of the Earth; and of the Earth’s capacity to meet their ever expanding needs. Contemporary writers and philosophers contemplating today’s population and resource utilization pressures have invoked similar sentiments to those in Malthus’ writings to support warnings that we face a type of “Ecological Armageddon.” Or, put in colloquial terms, Malthus’ thoughts are being used to add credibility to the Chicken Little concept that “the sky is falling!” Is it? Was this what Malthus was really warning us about?

Well, contrary to popular beliefs, Thomas Malthus was not a 1790’s ecological alarmist, nor a doomsayer predicting the catastrophic end of civilized life as known in his day. More to the point, In addition to being a minister, he was also an insightful economist (interesting combination, isn’t it?), who very early understood some of the critical issues of balancing systems of demand and productivity.

His two model points focused on the growth in human population as the proxy for demand factors, and the then perceived limits to the Earth’s potential to sustain this population. His belief was that when the Earth’s potential to meet the human population’s needs was stressed, the solution would be found more through a correction of population levels via the proliferation of misery and vice, including disease, war, famine, or other widespread
catastrophes. He did accept that advancement of technology as a means to increase production was a partial solution, but this was not at the heart of his main thinking.

Everyone has today been made well aware of the Earth’s exponentially increasing human population. The one billion people in Thomas Malthus’ day 200 years ago have increased to nearly 5.7 billion today, a level entirely outside Malthus’ capacity to comprehend using his understanding of the Earth’s production potential. Except for certain notable events, including major wars, and disease outbreaks and famines, the human population side of the equation has not met Malthus’ forecasts. What did change was the ability of humans to develop and apply new technologies to the production side of Malthus’ model.

Application of these technologies has brought about profound changes in the way in which we live on and interact with the planet Earth. Of relevance in this regard then to the issues before this conference, we can first look back in history at trends in forest management right here in the United States—to a time just before the turn of the last century.

During the 19th century, the population of the United States grew at a nearly Malthusian rate of 15 times, from 5 million to 75 million people. At the same time, conversion of timberland to cropland proceeded at an almost identical rate, affecting some 320 million acres. Nearly 200 million acres of timberland were cleared from 1850 to 1910 alone. This process of clearing was further complicated by careless and wasteful use of trees for fuelwood and lumber without any serious regard for subsequent reforestation or care of the woodland environment during harvesting entries.

Observing these trends, some very notable individuals, such as George Perkins Marsh and Gifford Pinchot, forecast a timber famine coupled with significantly increased wood products prices and consequently economic hardship. Wildlife experts predicted the certain extinction of scores of species. Today, these warnings seem alarmist and almost Chicken Little-like in nature. However, they did generate a highly focused response, led by such notables as Theodore Roosevelt.

In the end, new policies were formed, and actions were taken. When these initiatives were combined with the often underestimated resiliency of our forests, Pinchot’s and Marsh’s timber famine forecast was averted, and most species predicted for extinction recovered their populations. What triumphed here was not the misery and vice corrections of Malthus or the Armageddon of the doomsayers, but the collaborative victory of effective policies, new technologies, and the remarkable resiliency of our forests. These are the lessons of our past that we should use to help deal with the issues of today, the issues of this conference.

TODAY’S DRIVING FORCES

As we stand here on the threshold to the 21st century, what are the driving forces that will shape the issues before this conference? Similar to Malthusian Theory, the major driving force remains the ever present and continued pressure of population growth. The world’s population has doubled to nearly 5.7 billion people since the end of World War II, and is now growing at a rate of about 100 million people per year. In fact, expectations are for the human population to likely double over the next six to seven decades. By just 2010, we expect the Earth to house a population of 7 billion people, where the bulk of the growth—60%—will be in the Asia-Pacific region.

However, at the same time, global economic activity is also advancing at rates that would have astounded Thomas Malthus. Between now and 2010, the world’s (real) GDP is expected to grow by more than 50%. The developed countries will see lower trend growth rates of 2-3%, and the developing countries of Asia-Pacific, even with the current Asian malaise, will experience trend growth rates of 5-7%.

By 2010, the developed countries’ share of global GDP will have dropped from today’s 80 to 65%. This is indicative of improving standards of living for many segments of the world’s human population in the developing countries. Along with improving standards of living come new demands for energy, communications, education, housing, health care, and food.

Of relevance to this conference, paper demand will climb as literacy rates around the world continue to rise with better education. For example, in the last 45 years, literacy in China and Indonesia has increased from 20% to over 75%. Furthermore, related escalating needs for effective and affordable housing will stimulate congruent demand growth for mechanical wood products.

In Asia and South America, nearly 60% of the population is under 25 years of age; elsewhere, in the developed countries, this age level accounts for only 30-35% of the population. Just think for a moment about the significant implications this has in regards to the number of young people in these regions just now entering the life stage of family formulation and its related attendant social and material needs.

These population, demographic, and economic developments together are clear indicators of continued advancements of forest products demand growth rates. The related increased demands for industrial timber will further strain worldwide resources and stimulate enhanced
public and regulatory focus on the environment, stimulating the need for forest productivity and sustainability.

This focus will increasingly be reflected in countries with emerging economies. Expanding middle-classes will likewise demand that more attention be paid to non-exploitative uses of natural resource areas. Certainly, there are major unknowns out there, such as the real developments of worldwide fertility rates and the social, political, and market economic risks associated with countries such as Russia, China, and India. Yet even within these risk assessments, Asia is still expected to become the leading worldwide economic region over the next 15-20 years, with China’s development being a key driver.

TOMORROW’S NEEDS

These driving forces will collectively combine to push the world’s demand levels for forest-related consumer and non-consumer products to higher and higher plateaus. On the consumer products end, we expect annual demand for pulp and paper products to grow from today’s nearly 300 million ton level to 420 million tons around 2010.

As noted, this global demand growth (just over 2.5% per annum) will be generated by simple population expansion, increasing literacy rates, and improved standards of living, especially in the developing parts of the world. In fact, Asia-Pacific is predicted to have the highest (5%+) growth rate in demand for pulp and paper. Note that on a related topic, recovered fiber is predicted to play an increasing role in paper manufacturing up to about 2010, and will by then and afterward provide 45% of fiber furnish for paper products.

To put this use of recovered paper (RCP) into perspective in terms of fiber demands, which we will overview in just a moment, note that a 1% swing in its level of use is equivalent to about 15 million cubic meters of virgin wood consumption per year—or about the same as the total increment of fast-growing timber totals for either New Zealand or Chile.

As for mechanical wood products, generally lower growth rates than those for paper products are expected worldwide. Lumber will grow slowly at 1-2% per year, depending on the region, whereas panel products will grow at rates above 2%. However, the fastest growing mechanical wood product category will be for reconstituted, re-engineered products like Oriented Strand Board (OSB) and Medium Density Fiberboard (MDF), which will grow at 6-8% per year. Again, the developing countries will lead the way, as with paper products. As just noted then, increases in population and standards of living will drive forest products demands to new levels. This will equate to new demand for industrial roundwood of about 300 million cubic meters by 2010. Simply put, this translates into roughly 100 greenfield world-scale kraft pulp mills, requiring about 100-150 billion U.S. dollars of capital investment. At the same time, we cannot forget the expanding demands for fuelwood in the developing regions of the world. In fact, new demand in these areas here will approach some 550-600 million cubic meters of roundwood harvest by 2010. Just imagine what Reverend Malthus would say if he could observe global resource pressures at this scale.

However, fiber is only one use among many competing for the world’s forest resources. The confluently expanding global demands for these other forest uses, such as agricultural based products, recreation, water, forage, and habitat to sustain ecosystems for flora and fauna populations are at the same time constraining management options, and indeed the area of forest around the world available for fiber production. Meeting these comprehensive and often competing demand challenges will certainly create significant resource conflicts. The need to balance the equation is a major driver behind the push to develop new forest management systems that improve forest productivity and increase the level of sustainable timber production, while meeting these other competing needs.

TOMORROW’S POTENTIALS

A focus of this conference is to provide for you a broad overview of the forest management practices for improving productivity and sustainability, not only in the Great Lake region, but throughout North America and elsewhere in the world. As demands increase and the conflicts over alternative uses of forests widen, the fiber supply system will develop discontinuities, where supplies from traditional sources will be unable to meet existing, let alone new demands. The speakers for each of the main conference sessions will focus on the silvicultural strategies, harvesting regimes, and forest management practices to enhance the current level of forest productivity and sustainability that are vitally important to keeping Chicken Little and her falling sky out of our forests.

Viewed globally, tradeoffs will be required to meet fiber demand. At this juncture then, an integrated overview of supply scenarios would illustrate how supply and demand will likely interact to “Balance the Equation.” As the world’s (primarily) developed economies have begun to adjust their forest resource management approaches to account for both the growing needs for commercial products and those of ecosystem sustainability, we have become increasingly aware that there are limits to the proposed and necessary tradeoffs.

Current resource management tradeoffs are affecting the “traditional” virgin timber supply basins of the world’s
boreal, temperate, and native tropical forests. In the absence of major advances in development of access, as well as investments to increase productivity and overall management standards and forest sustainability, there would be a potential fallback of 75 to 125 million cubic meters per annum from the previously expected supply levels under this one scenario.

Also important is that such a potential shortfall from virgin timber supply is unlikely to be made up from higher recycling levels, or by major influxes of alternative fibers. When this fallback is combined with the current recognized enhancements from new supply arenas, such as the fast-growing plantations of the Southern Hemisphere, we can readily identify a new supply potential of about 300-325 million cubic meters per annum up to the year 2010.

Recall, however, that the marginal industrial roundwood increment for consumer forest products growth over this same time frame will grow to around 300 million cubic meters per annum. Note that this assumes an already high level of recovered fiber content of at least 45% (up from 36%). The above assumes no major fallback in supplies from other traditional virgin fiber supply arenas, such as has occurred on the West Coast of North America.

The net effect, then, is that without the application of more aggressive virgin fiber production schemes in all forest regions, not just the new kids on the block in the fast-growing plantation areas around the world, virgin fiber supply discontinuities will impact the consumer product demands of tomorrow and the ultimate evolution of sound forest sustainability capabilities.

And, of course, as initially noted, the demand for fiber for consumer products is only one of many escalating demands on the world’s forest ecosystems of tomorrow. Clearly, the topics of this conference concerning the evolving improving forest productivity for timber issues, especially linked with sustainability, have been well selected by the conference’s committee.

THE BALANCING ACT

Broadly quantified, within 10-15 years, the net shortfall in industrial virgin fiber without enhanced management and productivity attention and investments would potentially be between 75 and 125 million cubic meters per annum. This is out of a total estimated industrial demand of 1.7 billion cubic meters of virgin fiber in 2010, up from the 1.4+ billion cubic meters today.

However, we all know that in the end, there are never any shortfalls. That was a crucial underpinning to Reverend Malthus’ Essay on Population. He indicated that the world itself would create the balancing responses, primarily through the reduction of effective demand via the advancement of his misery and vice concepts, not economics and technology.

We are, however, much more informed and forward thinking here on the threshold to the 21st century than the good Reverend Malthus. Under today’s circumstances, we must expect a wide variety of balancing actions. We will see new economically based technologies emerge that are more efficient in their fiber uses.

Our markets will respond in a number of ways that will include dampening of demand by increasing costs, and substitution of alternative products to meet expected demands. Increased pressures on the supply systems will also generate higher values, which in turn will stimulate more aggressive investment scenarios for improving productivity and generating more fiber as well as creating pressures for forest sustainability.

The sessions over the next 2 days will highlight key issues related to forest productivity, focusing on tree improvement; investment considerations; silvicultural technologies; and forest health, wildlife and recreation implications. And a very important theme that is interwoven throughout the next 2 days of this conference is that of forest sustainability. Because without sustainability, we cannot improve forest productivity for timber products over the long term.

Contemporary natural resource managers must respond to these projected fiber supply/sustainability issues in the same proactive way as turn-of-the-century managers such as Pinchot and Marsh. While the timber famines they predicted never arose, their legacy in the form of actively growing productive and sustainable forests provides current generations a wider array of options for managing forests and for meeting our fiber and other forest resource needs.

In a sense, Pinchot and Marsh were not Malthusian at all. Malthus would have concluded that at least a partial collapse of the world’s social and political systems would one way or another bring the balance and solve the problem. In contrast, Pinchot and Marsh determined that proactive initiatives would create the difference.

DIRECTIONS

The challenge in front of us, as we stand at the dawn of the 21st century, is to more than just contemplate the pressure today’s population and its expected 100 million people per year growth will place on the Earth’s resources. In fact, with the further predictions for a doubling of population in six to seven decades, there are immense challenges facing us that would boggle old Thomas’s mind.
What would he say, and what would he do? In fact, the problems we now face greatly exceed anything Malthus could have possibly conceived. At the same time that we are facing unprecedented demands on the Earth’s natural resources, there is also an increasing recognition of the necessity to maintain the integrity of the Earth’s ecosystems—in large part to ensure that the good Reverend Malthus’ predictions of misery and vice as the mechanisms to balance the scales are not the actual realities we and our children have to face.

Here we can benefit from the example set by Pinchot and Marsh, wherein timely proactive initiatives can create beneficial change. The recognition of the cumulative value of such individual actions can be summed up in an old, but sage piece of advice:

“It is always better to light one candle than curse the darkness.”

So journey onward together, and light your own candles of productivity change and forest sustainability. I hope this conference will serve as a meaningful contribution to that end. Thank you for your attention, and now go forth with good heart and open minds!