



In August 2019, NGP travelled from Beijing to the shores of Lake Baikal in Siberia. Observing forestry practices in both China and Russia, study tour participants discussed ways to sustainably increase timber production in the boreal forest while also securing vital ecosystem services. Discussions took place in forests and pulp mills, conference rooms and a carriage on the historic Circum-Baikal steam train that formed part of the original Trans-Siberian Railway. This document summarizes some of the things we learnt.

The study tour was organized in partnership with NGP's sister organization the Boreal Forest Platform, with the support of China's National Forestry and Grassland Administration, WWF-China and Mondi.

TRANS-SIBERIAN REFLECTIONS

1. FOREST OR PLANTATION?

Plantation forestry and natural forest management may have more in common than we think.

In China, we saw plantations managed by the Mulan Forest Bureau. In Russia, we visited areas of natural forest leased by the Baikal Forest Company. But the line between the two isn't black and white.

The Mulan forests were planted just over half a century ago. At the time, there was around 200km² of forested area containing some 700,000m³ of timber on the state-owned Mulan Forest Farm in Hebei province, 400km north of Beijing. Today, the forests cover 880km² and hold over 7 million cubic metres of timber.

These plantations have more in common with natural boreal forest than with the intensively managed plantations we've seen on other study tours in Africa and South America. Instead of having stands of single species, all planted and harvested at the same time, the Mulan plantations consist of several species of indigenous trees. They are cut and thinned selectively with no clear felling, so forest cover is retained at all times. Management aims to mimic the dynamics of a mixed forest, though some new seedlings are planted to assist the natural regeneration.

While it's not a model that's likely to be viable everywhere, the Mulan experience could provide valuable lessons for other forest restoration projects that don't demand short-term economic returns. The assisted regeneration practices could also provide useful insights for Russian companies managing secondary forests or replanting areas that have been clear-felled.



2. INTENSIFYING DEMAND DEMANDS INTENSIFICATION

As demand for timber grows, so will pressure on forests.

China is the world's biggest user of wood, but it has a major timber deficit, with around half its demand met by imports. Russia is by far the biggest supplier, contributing about a third of the timber that China imports. And here in the forests of the Russian Far East, China's influence is especially strong.

China's demand for timber is continuing to grow – both for domestic use, and for the products it exports all over the world. Added to this, the massive infrastructure developments planned under the Belt and Road Initiative will also increase timber demand – all the more so if the Belt and Road makes full use of the possibilities of wood in construction and energy generation.

As demand increases, forests will come under increasing pressure. China has now banned commercial logging in its own natural forests, focusing instead on producing more timber in plantations. For Russia and other countries that China imports from, it's also vital to conserve natural forests with all the biodiversity and ecosystem services they support. So finding sustainable ways to intensify timber production, in both plantations and managed forests, is an urgent priority. Good silviculture and forestry practices are essential.



3. INTENSIVE MANAGEMENT AND INTACT FORESTS

Intensifying production in secondary forests and plantations can help protect intact forest landscapes.

Russia is home to a large proportion of the world's last intact forest landscapes – large expanses of forested wilderness undisturbed by human influence. These landscapes are crucial for biodiversity, carbon storage and other ecosystem services – but as demand for timber continues to grow, more of these areas could be opened up to logging, changing them for ever.

One solution is to meet growing demand by increasing productivity in already disturbed forests (secondary forests), as well as plantations. This is one of the aims of the Boreal Forest Platform (BFP), a multistakeholder platform modelled on NGP which is celebrating its fifth anniversary.

Thanks in part to the BFP's engagement, Russia's Federal Forestry Agency has been developing new regulations on intensive forest management. For example, new regulations allow companies to harvest twice as many trees from young stands: thinning the trees in this way provides a supply of timber, particularly for the pulp and paper industry, while those left standing grow into more valuable larger-diameter trees. This can be good for companies too: in remote parts of the boreal forest transport is a major cost, so focusing production on areas closer to the mills improves profitability.

The new regulations have been already been introduced in parts of western Russia, and are now being rolled out in the east of the country, including in the Republic of Buryatia near Lake Baikal in Siberia. Mondi, which has been implementing these practices in western Russia, took part in the study tour, offering opportunities to share learning and experiences.

It's important, of course, that intensification is sustainable, and that areas of high conservation value within secondary forests are protected. Identifying and managing these sites should be a priority for Baikal Forest Company, whether or not they are FSC certified (see point 7 below).





4. MULTIPURPOSE FORESTS

Timber production is not the only goal.

Despite the need to intensify production, both the Mulan plantations and the forests managed by the Baikal Forest Company have other important functions.

In Mulan, the forest's main function is to protect Beijing from sandstorms and to prevent desertification – timber production is a bonus. The trees provide a shield against the sandstorms that sweep in from Mongolia, and their roots help to hold the soil together, which is why maintaining continuous forest cover is so important. They form part of China's "Great Green Wall" – a massive tree-planting project begun in 1978, which is expected to cover an astonishing 350,000km² by 2050.

In the Republic of Buryatia, the Baikal Forest Company's concessions also serve a dual purpose, playing a vital role in retaining soil and water in the catchment of the iconic Lake Baikal – the world's largest freshwater lake by volume. Because of this, certain areas are classified as "protective" forests where there are restrictions on timber harvesting operations, including a ban on clearcuts.

Of course, the forests also provide other benefits, including carbon sequestration and habitats for wildlife. Maintaining these services and values while increasing timber production is one of the big challenges for forest management in the coming decades. At the same time, there's an opportunity to use timber production to enhance the economic viability of forest restoration projects around the world.

5. KNOWLEDGE NEEDS TO BE SHARED

Skills, learning and research are vital.

The Mulan plantation forestry model is based on forestry practices adopted from Germany – including felling carefully targeted trees, maintaining forest cover and imitating natural forest regeneration. Target trees are chosen for the quality of their timber and to open up the canopy, letting light in and enabling the next generation of trees to grow. The quality and quantity of timber are significantly higher than under traditional Chinese forestry practices, which involve indiscriminate thinnings followed by a clearcut after 40 years.

This experience shows the value of learning from other countries and contexts – but the Mulan Forest Bureau is investing in continued research and development. During our field visit, we visited six sites, all demonstrating different types of forest management with different objectives – prompting fruitful discussion on their relative merits and drawbacks.

The Baikal Forest Company faces a different knowledge challenge. Its forest concessions cover 1.7 million hectares – a vast area even by Russian standards. There's a lack of information on what these forests actually hold, so the company has carried out a full laser scan from the air to get a better understanding of what's there. This data is important in order to determine what sort of forest management should be carried out, where production can be optimized, which areas should be protected and so on.

Participants observed that both Mulan plantation forestry model and the sustainable intensive forestry being introduced in Russia's natural boreal forest require skilled workers. It's important that not just the managers but also the workers implementing the management plan on the ground know both what they're doing and why they're doing it.



6. OPPORTUNITIES FOR COMMUNITIES

Forestry can create shared value for local people.

Creating shared value is an important part of the NGP concept, and we saw some interesting examples.

In Mulan, tree seedlings are sold at a very cheap rate to local communities. They then sell these on at a profit to municipalities and companies for urban greening projects, creating value for communities and society.

In both China and Russia, local people also have opportunities to earn an income from harvesting non-timber forest products, including mushrooms and medicinal plants. In China, local people also raise poultry inside the forest.





7. BUILDING RELATIONSHIPS

Study tours like this help build trust between organizations.

The Baikal Forest Company is one of the biggest players in the Russian Far East. Until last year the company's operations were certified by the Forest Stewardship Council (FSC), but it decided not to renew its licence as it was seeing little demand for FSC certification from its main Chinese customers.

However, interest in FSC is growing in China, and the feeling from Chinese participants on the study tour was that FSC is important – particularly as China seeks to clamp down on illegal timber imports from the Russian Far East. Credible certification could also help Baikal Forest Company manage reputational risks. This social licence is important because of the company's location near the iconic Lake Baikal, and with the growing concern around forest fires.

The study tour helped to deepen the engagement between Baikal Forest Company, FSC and WWF-Russia, and it's hoped that this cooperation will continue and grow.

8. LONG-TERM COMMITMENT

Forestry in the boreal zone requires long-term planning and investment.

Growing trees is never about short-term returns, but in the slow-growing boreal zone it demands a different level of patience. Where eucalyptus plantations in the tropics are harvested after as little as seven years, here it's at least 40 years before trees are ready to be felled – and a lot longer if you want high-quality, large-diameter timber. In the Baikal Forest Company's concessions, trees being targeted are 100 years old or more, while a 50-60-year-old stand is considered middle-aged.

This requires long-term vision. In Russia, forest management plans cover a 10-year period, but this really isn't enough – to meet future timber needs sustainably, the time horizon needs to be decades.

The Mulan Forest Bureau has this long-term vision, but it's only possible thanks to significant government funding. For commercial companies, it looks less like a viable business model, while few private forest owners can afford to wait 60 years or more to grow for their trees to reach maturity – they're more likely to cash in on smaller trees, which are always in demand.

As well as government support, green finance schemes – such as green bonds – need to be explored as a way of enabling sustainable forest management with an extremely long-term outlook. Recognizing and valuing the other services that forests provide in addition to timber is an important part of this, for example through payments for carbon sequestration and other ecosystem services.





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