The role of industrial plantations in producing wood products in today’s global bioeconomy.

Andrew Heald
Director, NGPTA
Bioeconomy challenges – more timber & fibre but ...

• Who
Communities, Corporates and Governments

Plantations, CCF, Native vs Exotic, Semi-natural forests

• Where
Land, markets, food security, transportation

Twenty years ago ...

• How

• When
Time & Timber Markets – Pitprops to Paper to .... ?
Elihu Yale and Plas yn Ial
iNovaLand - NGPTA
Dedicated to the origination, financial and contractual management of integrated landscape projects
Improved biodiversity and forest landscape resilience through natural forest restoration and conservation

Sustainable wood supply and economic development through restoration of productive forest plantations and woodlots

Food security and livelihood improvement through improved agriculture and agroforestry

Commercial-Community bridge Mutual benefit and reliance between communities and companies

Community to Commercial evolution Self-reliant communities developing resilient landscapes with economic benefits

All projects are driven through a multi-stakeholder platform.
New Generation Plantations:

- Maintain ecosystem integrity
- Protect and enhance high conservation values
- Are developed through effective stakeholder involvement processes
- Contribute to economic growth and employment
Scale of the problem (1/2)

Concrete: the most destructive material on Earth

After water, concrete is the most widely used substance on the planet. But its benefits mask enormous dangers to the planet, to human health – and to culture itself.

- A brief history of concrete: from 10,000BC to 3D printed houses
- Editor’s pick: best of 2019. We’re bringing back some of our favorite stories of the past year. Support The Guardian’s journalism in 2020

by Jonathan Watts
Scale of the Problem (2/2)

Global plastic production and accumulation

- Accumulation 1950-2017: 9.2 billion tons
- Discarded: 5.3 billion tons
- Recycled: 2 billion tons
- Still in use: 2.9 billion tons
- In use: 1 billion tons

Yearly production: Resin and fibres

- 1950
- 1960
- 1970
- 1980
- 1990
- 2000
- 2020
- 2050

Million tons

PRODUCTION OF PLASTIC
Global annual plastic production in million tonnes.

56%

More than half of all the plastics ever produced have been made since 2000.

Source: Plastic Atlas 2019 | © Plastic Soup Foundation

What do we use plantations for?

- Solid wood & veneers
- Engineered wood products: CLT, plywood
- Particle board: OSB, chipboard
- Insulation boards & fibre-based products
- Chemical products
- Biomass for burning
- Nutrients return to forest

- Maintain ecosystem integrity
- Protect and enhance high conservation values
- Effective stakeholder involvement processes
- Contribute to economic growth and employment
Current & future materials

Figure 3. Main current products and emerging technologies from the Brazilian solid wood products and panels industry.

Figure 2. Main innovative products from the Brazilian planted tree pulp and paper industry, and potential new industries.
Timber cities & land use change

**Abstract**

Using engineered wood for construction has been discussed for climate change mitigation. It remains unclear where and in which way the additional demand for wooden construction material shall be fulfilled. Here we assess the global and regional impacts of increased demand for engineered wood on land use and associated CO₂ emissions until 2100 using an open-source land system model. We show that if 90% of the new urban population would be housed in newly built urban mid-rise buildings with wooden constructions, 106 Gt of additional CO₂ could be saved by 2100. Forest plantations would need to expand by up to 149 Mha by 2100 and harvests from unprotected natural forests would increase. Our results indicate that expansion of timber plantations for wooden buildings is possible without major repercussions on agricultural production. Strong governance and careful planning are required to ensure a sustainable transition to timber cities even if frontier forests and biodiversity hotspots are protected.
Global land use for food production

Earth’s surface

29% Land
149 Million km²
71% Ocean
361 Million km²

Land surface

71% Habitable land
104 Million km²

Habitable land

50% Agriculture
51 Million km²
37% Forests
39 Million km²
11% Shrub
12 Million km²

Agricultural land

77% Livestock: meat and dairy
40 Million km²
23% Crops excluding hay
11 Million km²

Global calorie supply

82% from plant-based food

Global protein supply

37% from meat & dairy
63% from plant-based food

Data source: UN Food and Agriculture Organization (FAO)
OurWorldinData.org - Research and data to make progress against the world’s largest problems.

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Land-use planning and trade-offs?

- Who
  - Communities, Corporates and Governments
- Where
  - Land, markets, food security, transportation
- How
  - Plantations, CCF, Native vs Exotic, Semi-natural forests
- When
  - Twenty years ago...
Another Step in our Long Collective Journey ...

Thanks for listening:

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