The Role of Plantation Forestry for Promoting Sustainability in South Africa

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BIODIVERSITY RESEARCH AND EVIDENCE INDABA
Birchwood Hotel Conference Centre
Thursday 17 – Friday 18 August 2017
Forestry Facts

- Approximately 1.5 million hectares
- Around 1% of the country’s land surface area
- The commercial forest products industry as a whole contributed ZAR 31.1 billion to South Africa’s GDP in 2015
- Accounted for 9% of overall exports
- 1.4% of national total employment: around 160,000 permanent, contract, and informal workers
- Sector supports livelihoods of between 534,000 and 692,000 mostly rural South Africans

- Aligns with NDP goals: reducing social ills, and integrating economy with regions and communities
Declining coverage and production

![Graph showing declining coverage and production over time.](image-url)
South African imports of wood, pulp, fibre, and paper products

[Graph showing the trend of imports for Wood and Wood Products, Pulp and Fibre, and Paper and Paper Products from 2001 to 2016.]
Prima facie considerations

- South Africa is a lightly forested country
- BUT it is also a water constrained country
- AND plantation forestry such as pine and eucalyptus are non-indigenous water-thirsty crops
- South Africa faces food security concerns, therefore:
  - Is plantation forestry the best appropriation among land use alternatives?
  - If wattle (i.e. Australian acacia) is permitted, is there a risk of further alien invasions?
Why plantation forestry?

- It is the primary base of important value chains in wood, fibre, and pulp and paper industries downstream.
- The industry has important potential linkages in terms of social, environmental, and economic benefits.
- SA has 85% Forest Stewardship Council Certification – the highest in the world.
- The industry contributes to diversification opportunities in the economy.
NBRES goals and SDGs

- It aligns with Strategic Objective 1 by providing substitute habitat

- Also contributes to rural socioeconomic development, job creation, and economic opportunities

- Objective 4: through the out-grower schemes which equip smallholders and communities with skills and resources

- Objective 5: through conserving land resources, promoting forest coverage, and safeguarding forest-dwelling biodiversity

- SDGs: 1, 10, 12, 13, and 15
General environmental benefits

- Preservation of natural capital
  - Stores of ecological value in the form of forests themselves and areas within forests

- Carbon sequestration
  - Plantations themselves store carbon and carbon is recaptured upon replanting of new seedlings
  - Expansion (afforestation) can increase this benefit

- Edge effects
  - Plantation forests (and forests of any kind) can protect against the edge effects of deforestation and desertification
Biodiversity spill-overs

- Plantation forestry provides substitute habitat for animal and plant life

- This is true for bottom-dwelling and middle-dwelling organisms despite the fact that the canopy of pine and eucalyptus are alien species

- However, better potential with pine because eucalyptus is hostile to certain plant species

- Protection of wetlands and riparian zones within the locus of plantations
Land challenges

- Declines in coverage and production, in part due to recapitalisation challenges and global economic conditions
- Plantation forestry is a long-term investment
- General trend towards shorter rotation eucalyptus
- Few opportunities for expansion except in areas with disaggregated OR community land rights
- Land tenure security and replanting
Water challenges

- Plantation forestry is the only Stream Flow Reduction Activity (SFRA) listed in the National Water Act
  - Need to assess whether forestry is a risk to water resources in all cases

- The Act requires plantations to obtain water use licences

- The process is beset with delays and the department has not fully eliminated the backlog on applications

- Forestry is water intensive but does not require irrigation
Efficiency challenges

- Silvicultural improvements and improvements in the Mean Annual Increment (MIA) are not compensating for the declines in coverage and production

- SA becoming more reliant on imports of wood, fibre, and pulp and paper

- Downstream inefficiencies mean that industrial timber is not being used optimally

- Biomass is left on the forest floor which emits carbon and could be used for energy
Opportunities

- Opportunities in the form of out-grower schemes to develop local skills and empower communities while safeguarding industrial timber supply

- Opportunities to make considered expansion in forestry where water factors will be limited
  - Some areas might be suitable for forestry – one-size-fits-all should not be the approach to licencing

- Opportunities to integrate the value chain to improve efficiency through the production process of several wood and paper products
Recommendations

- Expedite land claims settlements and encourage partnerships between industry and communities to become co-beneficiaries of the industry
  - Science interface: sector-based reporting
- Alleviate the backlog on water use licencing to minimise delays
- Conduct pre-assessments on suitable locations for plantation forestry to aid growth in the industry
  - Science interface: metrological maps to pre-identify locations
- Industry to devise methods to improve resource efficiency (energy, water, carbon, land, inputs) by producing less waste and utilising by-products
  - Science interface: Product cross-utilisation in the value chain
Caveats

- Land settlements and partnerships must benefit communities and allow continued access to food sources, cultural sites, and medicinals within forests.

- Water licensing must remain mindful of alternatives (and potentially better uses of the land) regarding other challenges like water for human sanitation and food production.

- In promoting efficiency and economic benefits, the ecological benefits must not be undermined (i.e. the shift to shorter rotation cycles must be discouraged).
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