



 5TH INTERNATIONAL CONGRESS
ON PLANTED FORESTS

Session 2: Societal perception of plantations and governance

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5TH INTERNATIONAL CONGRESS ON PLANTED FORESTS

7-10 November 2023

An assessment of the policy and legislative frameworks for commercial forestry management in Kenya

**Theme: : Societal perception of plantations and
governance**



Dr. Joram Kagombe

Introduction

- Kenya has developed a strategy to increase tree cover to 30% by 2032 and forest cover from to over 10%.
- Strategy underpins role of commercial forest in delivering 35% of the projected 15 billion trees.
- Commercial forest focus on land in private and community lands with the highest proportion planted in Arid and Semi-Arid areas.
- Commercial forestry should be profiled as competitive land use option for it to attract entrepreneurs.
- Desk review combined with discussions with key sector players.

Constitution 2010

- CHAPTER FIVE – LAND AND ENVIRONMENT National Land Commission. Legislation on land. Land and Environment - section 69 obligation of environment - sustainability. 10% tree cover, equity and benefit sharing, EIA, public participation
- provides a foundation for institutional and governance support for the implementation of forest concessions. Under Section 60-68 it clearly outlines issues with respect to classification, ownership, and administration of land and its resources. Under Section 71(1) (a), it provides for the ratification of concessions.
- 66. Regulation of land use and property (2) Parliament shall enact legislation ensuring that investments in property benefit local communities and their economies

Existing Legislative framework

- FMCA 2016 has most requirements outlined in the FAO Voluntary guidelines on forest concessions-need to fill gaps such as: the harvesting value of an area, forest revenue collection, management of rescinded concessions, evaluation of the concession process, the mode of bidding, gender inclusion and independent observation.
- Incentives not operationalized
- Long term investment require-secure land tenure, respect for private ownership, reliable economic guidelines and standards, transparent governance, effective measures for tackling corruption, and efficient conflict resolution mechanism.

Gaps in legislations

- Public Private Partnership Act, 2021, capped the duration of 30 years that is short for a forest enterprise. The Act also lack a specific legal framework for establishment of PPPs in commercial forestry.
- No comprehensive commercial forestry policy to attract private sector
- Forest Conservation and management trust fund not operational sect27
- Concession sect 44 not operational
- Incentives under Part IV not operational- CS NT make regulations

National Forest Policy

- Commercialization of forestry activities through the involvement of the private sector to invest in tree growing, wood processing and value addition.
- chain-of-custody system for timber and wood products, and legal origin
- Forest plantations - promote commercial forests on public, private and community land and increase the productivity of plantation forests through scientific management, promote private sector participation in establishment and management of plantations on public land, promote plantation species and genetic base diversification to improve ecological resilience and enhance product diversity.

Conclusion

- To promote willingness to invest in a long term venture such as commercial forestry, there is need for; secure land tenure, respect for private ownership, reliable economic guidelines and standards, transparent governance, effective measures for tackling corruption, and efficient conflict resolution mechanisms.
- The paper recommends a review of existing forestry policies and legal frameworks to align with to address gaps in commercial forestry and Provide incentives



Recommendations

- Potential gains of commercial forestry need to be visible through employment creation, and profits for farmers and forest owners.
- Enabling policy framework throughout the entire forest value chain to support commercial forestry in Kenya
- Third-party observers of all types should be welcomed as contributors to good governance because of their independence and access to information.
- Government needs to provide cost-effective technical support to commercial forestry activities
- Need for increased institutional capacity of lead forestry agencies and the strengthening of linkages between science, policy and practice in the forestry sector.
- mixed concession systems that include both private concessions and community concessions.
- Enhance certification

THANK YOU

**Contact
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THE END





Photo credit: Sarah Juster



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Tree-Based Interventions in a Northwest Uganda Refugee Settlement

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Photo credit: Malteser International

Global Refugee Crisis

35.3 million refugees (UNHCR, 2023)

- Protracted global conflicts
- Economic hardship
- Climactic and environmental volatility

73% of refugees in developing countries

- Iran: 3.4 million
- Colombia: 2.5 million
- **Uganda: 1.5 million**

Tree cover loss can be associated with mass human displacement

- Reliance on firewood for cooking and timber for construction
- Conversion of forested areas to cropland
- Local brick and charcoal production

Importance of Trees in Displacement Settings



Nutrition



Medicine



Environmental services



Material



Safety

Tree planting



Tree conservation



Facilitated resprouting of trees



Research Objective and Study Site

Imvepi Refugee Settlement

- Established in 2017
- Currently hosts 65,000 refugees
- Each household provided land
- Diversity of tree-based interventions (TBIs)



Research gap:

- Cross-organizational comparison of TBIs in one refugee setting

Research question:

- How do TBIs in the Imvepi Refugee Settlement uniquely address human and environmental health challenges?

Methods

Sampling

- 4 Imvepi-based NGOs purposively selected

Data collection

- May-July 2023: 16 semi-structured interviews with technical and administrative staff
- Review of documents, field visits

Analysis

- Qualitative coding, cross-case comparative analysis



Preliminary Results



Activities

Home-based agroforestry
Fuel-efficiency interventions
Community-based agroforestry
Woodlots
Food Forests
Community-based FMNR



Organizational Characteristics

Mission statements
Geographic range
Number of participants
Program duration

Operational Strategies

Land access approach
Short-term livelihoods
Gender inclusivity
Environmental conservation
Community engagement

Preliminary Results

| | | Organizational characteristics | | |
|-------------------|-------------------------------|---------------------------------------|-------------------------------|---|
| Activities | Nature of TBI | Geographic Range | Number of participants | Programmatic mission |
| | Home-based interventions | Small (settlement-based) | Small to medium (<1800) | Emphasis on nutrition and energy security |
| | Community-based interventions | Wide (district-based) | Medium to large (>1800) | Emphasis on economic development, environmental restoration |

Preliminary Results

| | Operational Strategies | | | | |
|--------------------------------------|-------------------------------|--------------------|-----------------------------------|---|---|
| | Land Access | Livelihoods | Gender | Environmental Conservation | Community Engagement |
| Home-based interventions | Maximize home plots | Tree products | Participate from home + nutrition | Soil/water management + biodiversity | Hire local staff + community dialogue |
| Community-based interventions | Gain external land | Cash + honey | Challenge gender norms | Carbon sequestration + microclimate improvement | Hire local staff + community leadership |

Next Steps and Acknowledgements



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Key take-aways:

- No “one-size-fits-all” TBI approach
- Integration of activities could maximize benefits
- Sustainability is an important consideration

Next steps:

- Develop a practical decision-making tool for developing future interventions
- Validate results in Spring 2024
 - Focus groups and household-level impact assessment



Contact: Sarah Juster, shj22@vt.edu



Local perceptions and use of planted forest species in the Walungu territory, East DR Congo

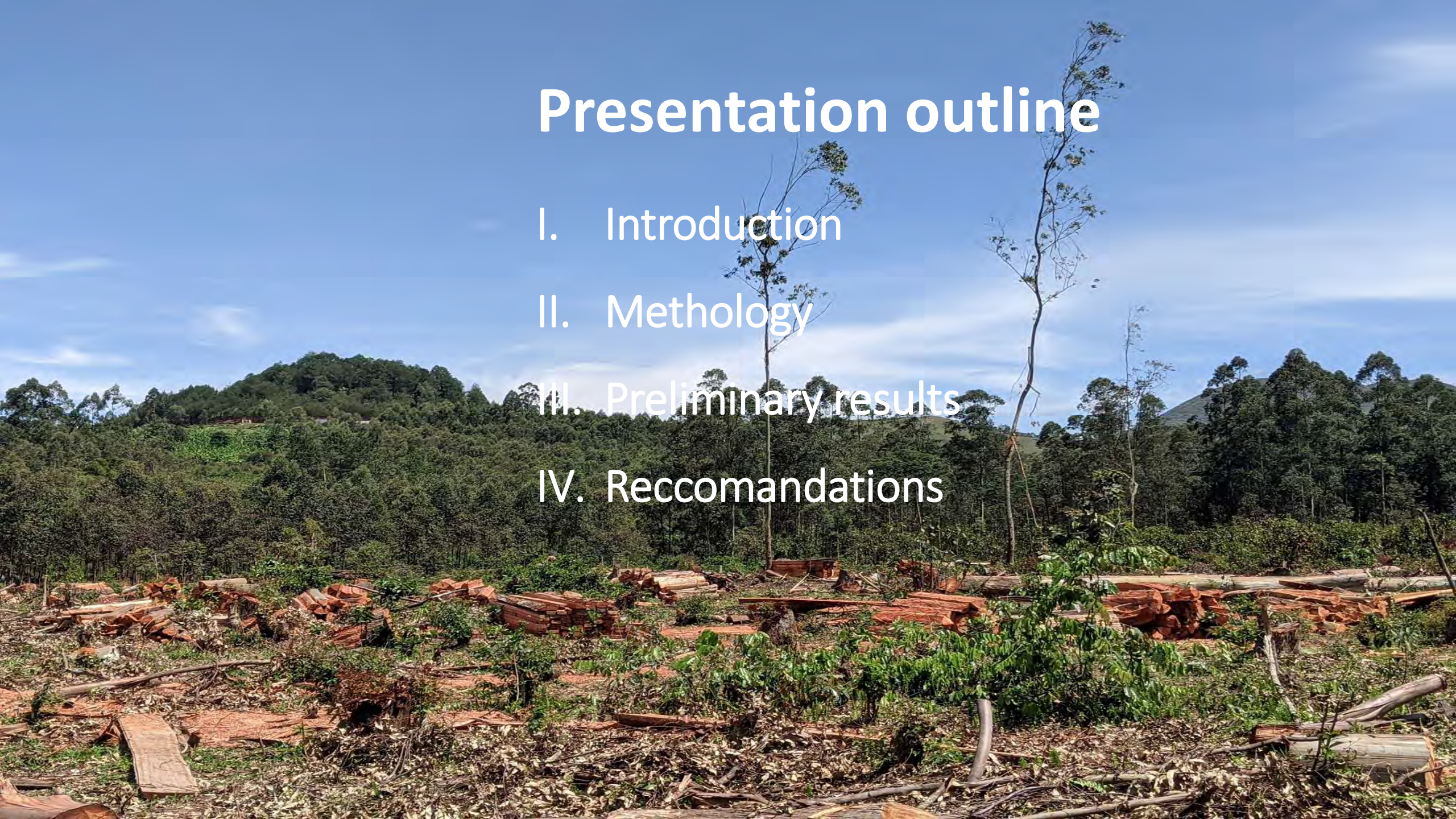
Presentation outline

I. Introduction

II. Methodology

III. Preliminary results

IV. Recommendations



Introduction



Planted or natural/primary forests : protect the natural and human environment

Services : recreation, climate change mitigation, water quality improvement, erosion control and flood mitigation.

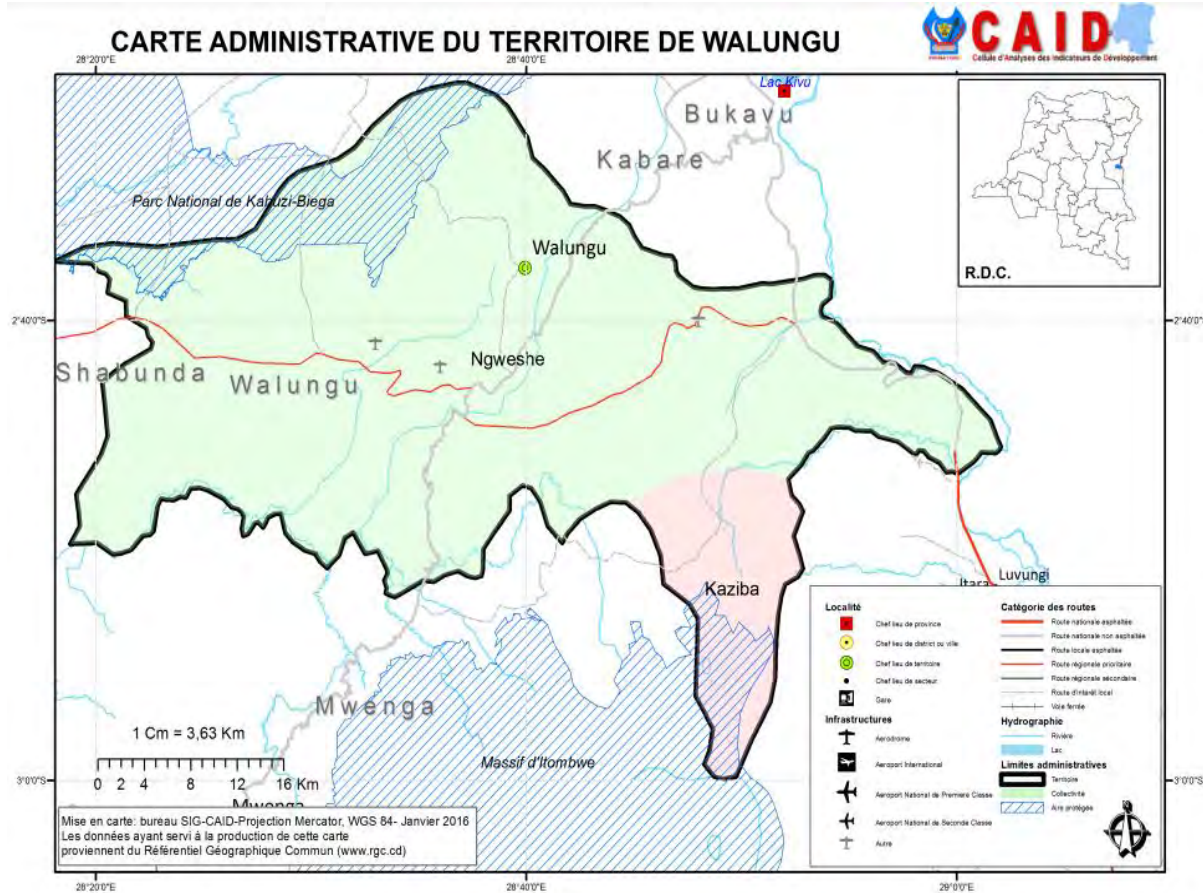
These services represent environmental, social and economic utilities, and are only achieved when the land-use context in which planted forests are located is properly taken into account (Carle et al., 2020; Brotto et al., 2016; Maginnis & William, 2004).

Planted forests : semi-natural planted forests and plantation forests = productive or protective.

Planted forests : source of income. In that context what are the main representations and uses of planted forest ?

The aim of this study is to analyze local representations and use of planted forests in Walungu territory.

Methodology



CAID, 2020

The territory of Walungu is a decentralized entity in the province of South Kivu in eastern DR Congo. It has two chiefdoms (Ngweshe and Kaziba).

Investigations were carried out among thirty-five owners of planted forests in four groups (Karhongo, Nduba, Lukube and Kashanga) in the Walungu territory.

In Walungu territory planted forest are productive plantation forests.

Primary data collected in a questionnaire survey and on secondary information

Social representation theory (Moscovici, 2005 ; Augoustinos & Walker, 1995).

Preliminary findings 1/5



Planted forests are made up of several species, generally exogenous species, introduced into the region since colonial times.

Main species : Eucalyptus sp, Cupressus sempervirens, Grevillea robusta, Podocarpus macrophyllus, Maesopsis eminii and Prunus sp. Markhamia lutea, Cedrela sp, Spathodea campanulata, Acacia sp, Leucaena leucocephala and Calliandra sp are not considered in the selection of growers.

Eucalyptus sp leads all planted forests, occupying more than 80% of their surface area.

Preliminary findings 2/5



Choice of planted species : the topography of the land/soil quality, its growth (fast-growing species), its economic value (quality of boards, wood, charcoal), its resistance to fire and its durability (ability to regrow).

Reasons for preferring one species over another : relative to its economic value.

Reasons for interest in the land

Investment purposes, the benefits of trees for human life, the location of the field on a hill, the unproductiveness of the field, the family's need to own a forest, and the spoliation/encroachment of the field by neighbours or public interest causes

Preliminary findings 3/5



Why forest trees on these areas ?

Expectations of the forest/trees

Expectations of the forest within the community are numerous, and shape their uses of trees

Use for which trees are planted

| Use | % |
|--|----|
| Timber/scaffolding Boards Firewood (Brickworks and households) | 80 |
| Charcoal | 15 |
| Medicines (bark, leaves, flowers, etc.) | 5 |

Preliminary findings 4/5



Why forest trees on these areas ?

Other services of forests/trees

Regulate water flows and improve water quality

Improves air quality

Dust control

Climate change mitigation

When we stay near or under trees: we feel in good condition

Combating erosion and landslides

Watershed protection

Preliminary findings 5/5



Satisfied expectations of the planted forest

The forest satisfies planters' expectations sufficiently, given its multiple uses.

Areas for improvement or development in the planted forest

Regular maintenance, planting more trees, forest security/enclosure, bushfire control, variety selection, introduction of other species and fruit trees, introduction of livestock and bees.

Developments or vocations wished to disappear

Bushes, which prevent trees from growing properly and paths which facilitates the movement of breeders.

Conclusion & Recommendations



Growers of planted forests are more concerned with economic gain than with these ecosystem services or biodiversity protection.

Lack of regulations on planted forests. Even though forestry and agricultural laws exist, they are silent on the problem of converting vast tracts of farmland into planted forests. Creation of agrosilvopastoral imbalance.

It would be important to enhance the value of planted forests in the Walungu territory by emphasizing all the services they offer, including climate change mitigation, which are ignored by local communities, and to regulate the areas that planted forests must occupy to avoid reducing agricultural land.

These forests help to reduce pressure on the vast natural forests of other parts of DR Congo.



**THANK YOU
FOR YOUR
ATTENTION**



5TH INTERNATIONAL CONGRESS ON PLANTED FORESTS

7-10 November 2023

Potential of Small-Scale Tree growers in On-Farm Plantation Development: Case of Nyandarua Tree Growers Association in Kenya

Theme: : Societal perception of plantations and governance

Dr. Joram Kagombe



Introduction

- Kenya aspires to grow its tree cover to 30% by 2032 with 35% being contributed by commercial forestry with opportunity for Private forest under small scale holders
- Tree Growers need to come together to access joint technical advisory services, value addition and marketing.
- The Farm Forestry Program with support of FAO have provided support to tree growers association to upscale commercial forestry with one being Tree Growers Association of Nyandarua (TGAN). Legally registered entity under the Societies Act with a membership of approximately 3,000 tree growers in Nyandarua County
- Member of Farm Forest Smallholders Producer Association of Kenya (FFSPAK)

Approach

- Members of TGAN formed a Cooperative society.
- Activities demand-driven-identified through a process of problem identification, project planning and project implementation facilitated by the Association in a participatory process.
- Tree census 2020 - farmers undertake an on-farm tree inventory and develop a strategic business plan for sustainable production and marketing of timber products including wood fuel.
- Bringing forest to the people

Results

- Net worth of the association is about 53million USD\$ hence there is great potential in farm forestry.
- Eucalyptus constituted 48%, Cypress 44%, Pine 3% and other 6%.
- By 2023, TGAN had 785 ha under trees and this is projected to increase to 1,578ha in 2,028 and 3.175 ha in 2033. Annual products offered projections by 2023 was 5022 tons of carbon, 6840 M³ of saw logs, 6840M³ of firewood and 196,012 pieces of transmission poles.



| | |
|----------------------------|-------------|
| Total farm area(ha) | 1500 |
| Area under trees(ha) | 1060 |
| Tree expansion area(ha) | 440 |
| Commercial volumes | |
| Eucalyptus | 48% |
| Cypress | 44% |
| Pine | 3% |
| Others | 6% |

| Products Available | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---------|---------|---------|---------|---------|
| Carbon (tones) | 251 | 1,256 | 2,762 | 5,022 | 7,533 |
| Saw logs (cubic meters) | 3,800 | 5,320 | 6,080 | 6,840 | 7,600 |
| Firewood (cubic meters) | 2,122 | 2,971 | 3,396 | 3,820 | 4,245 |
| Transmission poles (count of all classes) | 108,896 | 152,454 | 174,233 | 196,012 | 217,791 |

Financial projections TGAN 2020 - 2030

| | | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|----------------------------------|----------------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Year | | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Pine | ha | 15 | 17 | 20 | 23 | 26 | 30 | 35 | 40 | 46 | 53 | 61 |
| Cupressus | ha | 227 | 261 | 300 | 345 | 397 | 457 | 525 | 604 | 694 | 799 | 918 |
| Eucalyptus | ha | 248 | 285 | 328 | 377 | 434 | 499 | 574 | 660 | 759 | 872 | 1,003 |
| Other sp | ha | 26 | 30 | 34 | 40 | 45 | 52 | 60 | 69 | 80 | 91 | 105 |
| cumulative land area | ha | 516 | 593 | 682 | 785 | 902 | 1,038 | 1,194 | 1,373 | 1,578 | 1,815 | 2,088 |
| Total wood flow | m³ | - | 3,896 | 4,481 | 5,153 | 5,926 | 6,814 | 7,837 | 9,012 | 10,364 | 11,919 | 13,706 |
| TOTAL REVENUES | | | 2,519 | 2,896 | 3,331 | 3,830 | 4,405 | 5,066 | 5,826 | 6,700 | 7,704 | 8,860 |
| PAYMENT TO US FARMERS | \$ | 8,614 | 9,906 | 11,391 | 13,100 | 15,065 | 17,325 | 19,924 | 22,912 | 26,349 | 30,301 | 34,846 |

Upscaling Tree growing

Cooperative efforts to enable joint efforts in:

- Resource planning – joint management plans,
- Equipment's for silviculture operations and harvesting
- Forest certification
- Marketing of product
- Resource mobilization



Photo: Herbert Bieser, Pixabay

- Forestry under small scale tree growers have huge potential to increase forest cover and livelihood of participating farmers.
- Results recommend continuous capacity building in value addition and marketing, monitoring of stocks held by farmers and tapping into financial models that can support tree growing
- *farmer could transform themselves into investors but need market information and equipment for value addition and interventions for livelihood enhancement*
- Key gaps include is certification of forest to allow global business opportunities. However, land subdivision is also threat to expansion of forests on-farm.

Conclusion

- Small scale tree growers have potential to increase forest cove
- Profile tree growing as competitive land use option
- Value addition, marketing key
- Tap into carbon market
- Continuous engagement and capacity development of research, practitioners and policy makers



THANK YOU

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THE END





Promoting inclusive forestry through policy and legislative revisions in the Republic of Mauritius

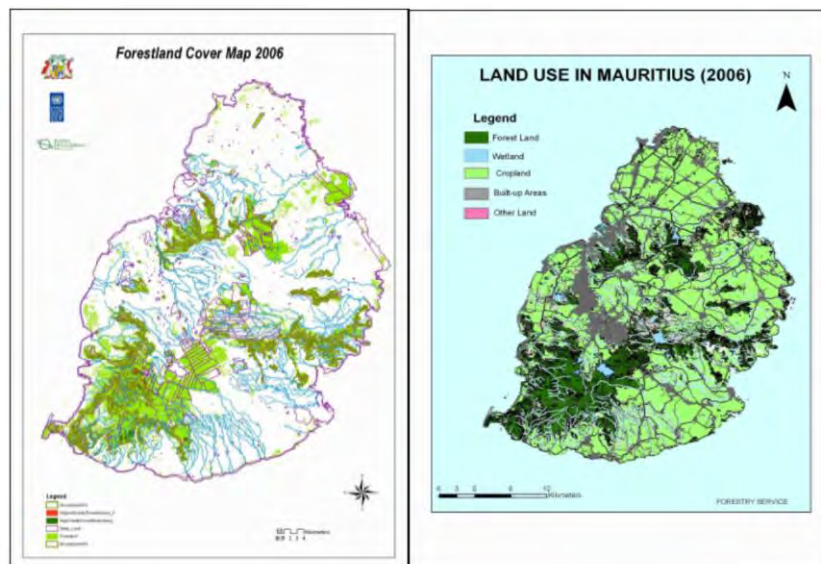
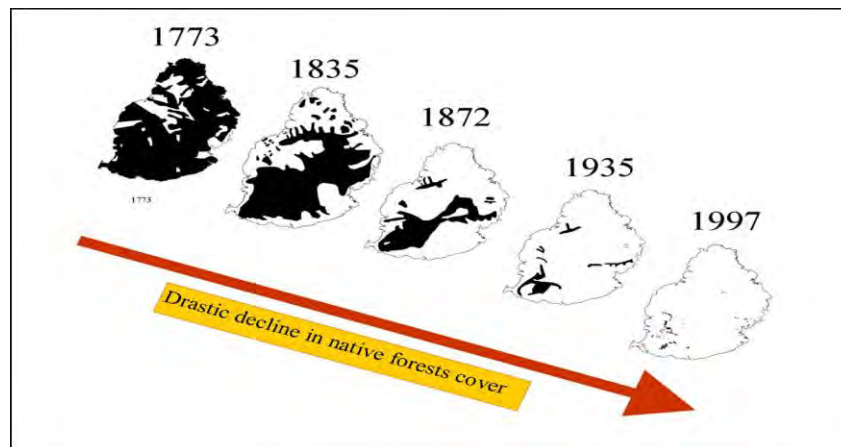
**Presented at 5th International Congress on Planted Forests
07-10 November 2023, Nairobi, Kenya**

**P. Khurun and C.Cyparsade
Forestry Service, Mauritius
07 November 2023**



Overview of Forest Sector

- Forestry Service under the aegis of the Ministry of Agro Industry and Food Security mandated for forests in Mauritius.
- Total forest area including shrub and grazing lands estimated about 50,462 ha (47,002ha-Mauritius)
- Forest Cover: Estimated about 25% of the total geographical area
- Area of good quality native forest (i.e. more than 50% native plant cover) is estimated to cover less than 2% of the forest area
- Remaining - planted forest, deer-ranches or highly degraded vegetation invaded by alien plant species
- Forest ownership in Mauritius is either: public or private
- No communal forests and no communities living within or dependent on the forests



FOREST TYPES

| Ecological Zone (Tropical) | Category | Species |
|---------------------------------------|-------------|---|
| Wet Upland Forest R > 2000mm | Plantation | <i>Pinus elliottii</i> |
| | Plantation | <i>Eucalyptus tereticornis</i> |
| | Plantation | <i>Cryptomeria japonica</i> |
| | Plantation | <i>Araucaria cunninghamii</i> |
| | Natural | Mostly native forests invaded by alien plant species |
| Moist Forest 2000 mm > R > 1000 mm | Plantation | <i>Eucalyptus tereticornis</i> . |
| | Plantation | <i>Tabebuia pallida</i> |
| | Plantation | <i>Araucaria cunninghamii</i> |
| | Plantation | <i>Casuarina equisetifolia</i> |
| | Natural | Mostly native forests severely invaded by alien plant species |
| Dry Lowland Forest | Plantation | <i>Eucalyptus tereticornis</i> . |
| | | <i>Tabebuia pallida</i> , <i>Araucaria cunninghamii</i> |
| | Plantation | <i>Casuarina equisetifolia</i> |
| | Shrub lands | Mainly exotics & grass cover |





Acts relevant to Forest Sector

- **Forests & Reserves Act No 41 of 1983 (As amended by Act No 1 of 1986 and Act 7 of 2003)**
- **Shooting & Fishing Lease Act (1966) (As amended in 2017 and 2023).**
- **State Land Act (1991)**
- **Food and Agricultural Research & Extension Institute (FAREI) Act (2013).**
- **Environment Protection Act 2002 (EPA) amended (2008).**
- **Native Terrestrial Biodiversity and National Parks Act (2015).**
- **National Disaster Risk Reduction and Management Act (2016).**
- **Climate Change Act (2021)**



Strategies /Policies

- **National Forest Policy (2006).**
- Strategic Plan for the Food Crop, Livestock and Forestry (2016-2020). Being updated for next 5 years (2021-2025)
- National Climate Change Adaptation Policy Framework (2021).
- Nationally Determined Contribution (2021).
- National Biodiversity Strategy and Action Plan (2015-2025).
- Environment Master Plan for the Republic of Mauritius (2020-2030).
- Strengthening Rural Development Planning in Rodrigues through Land Suitability Maps and Natural Resource Information Systems (2019-2021).
- **National Biomass Framework (2020-2030)**
- Sustainable Integrated Development Plan (2023-2032) for Rodrigues



Existing Forestry Activities

Forestry Service under the aegis of the Ministry of Agro Industry and Food Security mandated to implement SFM.

Existing Forest Activities undertaken:

- Forest Operations (Silviculture/Nursery)
- Ecosystem services (Protective forests)
- Timber (production forest/local consumption)
- Shooting and Fishing leases (7 years lease)
- Recreational activities (forest trails/nature walks)
- Biodiversity Conservation (hot spot endemic sp.)
- Agroforestry (pilot sites /private sector)
- Primate export (Biomedical research)
- Non Timber Forest Products (local handicrafts)





Enabling Environment

- Forestry Service is providing the enabling environment to facilitate to private entities to undertake forest compatible activities on State Forest Lands.
- Shooting and Fishing Lease Act – Forestry Service
State forest lands are leases for forest activities to the private sector and individuals – Deer ranching and eco-tourism
Leased for 7 years – maximum for 14 years depending on the activity undertaken.
- National Biomass Framework (2020-2030) – Mauritius Cane Industry Authority (MCIA)
Provide policy and guidelines to participate in the attainment of the objectives of the country to reach its renewable energy mix of 60% by the timeline of 2030 (NDC) -increased use of biomass and other green sources for energy production.
Forestry Service -Increase planted forests for woody biomass in the country
Private Sector – Sugar Estates are undertaking field trials of planted forest (*Eucalyptus grandis* and Bamboo)





Paradigm shift in forestry objectives

- New provisions in the legislation (**Shooting and Fishing Leases Act - 2023**) allows the lease of state forest lands for up to 20 years (renewable), allowing for potential private entities to undertake economically viable forest activities such as:-
 - Plantation forests
 - Ecosystem Restoration
 - Eco-tourism
 - Biomass production
 - Agroforestry
 - Nutraceuticals
 - Promoting Wilderness areas





Transformative approach

Advantages of transformative approach:

- ✓ Achieve targets –SDGs, UNCFCC, UNCBD, UNCCD, etc;
- ✓ Government concentrates on enforcement and legal compliance;
- ✓ Encourages the private sector to be inventive and pioneering in their approach;
- ✓ Adopts the inclusive approach by easing access to state forest lands.
- ✓ Reduces the need for government budget to develop the sector;
- ✓ Increases revenue without investing in new economic ventures;
- ✓ Promotes agrifood systems and ensuring their health and productivity including livelihood for vulnerable communities.





Recommendations and Conclusions

- Transformation of the forest sector to allow integration of forestry into emerging economic sectors
- Provide security in land tenure and guaranteed markets for biomass sale for private sector
- Participatory approach will complement the sustainable management of forests while providing economic growth to the forest activities in the country
- Capacity building and institutional strengthening is required
- Incentives / Subsidies have to be put in place
- Create small forest land owners
- Monitoring and assessing the activities by the enforcing agencies is pivotal and crucial to ensure protective functions of forest management (soil and water conservation)



Thank You



Merci

Public and landowners' perception of plantation forests for energy in New Zealand

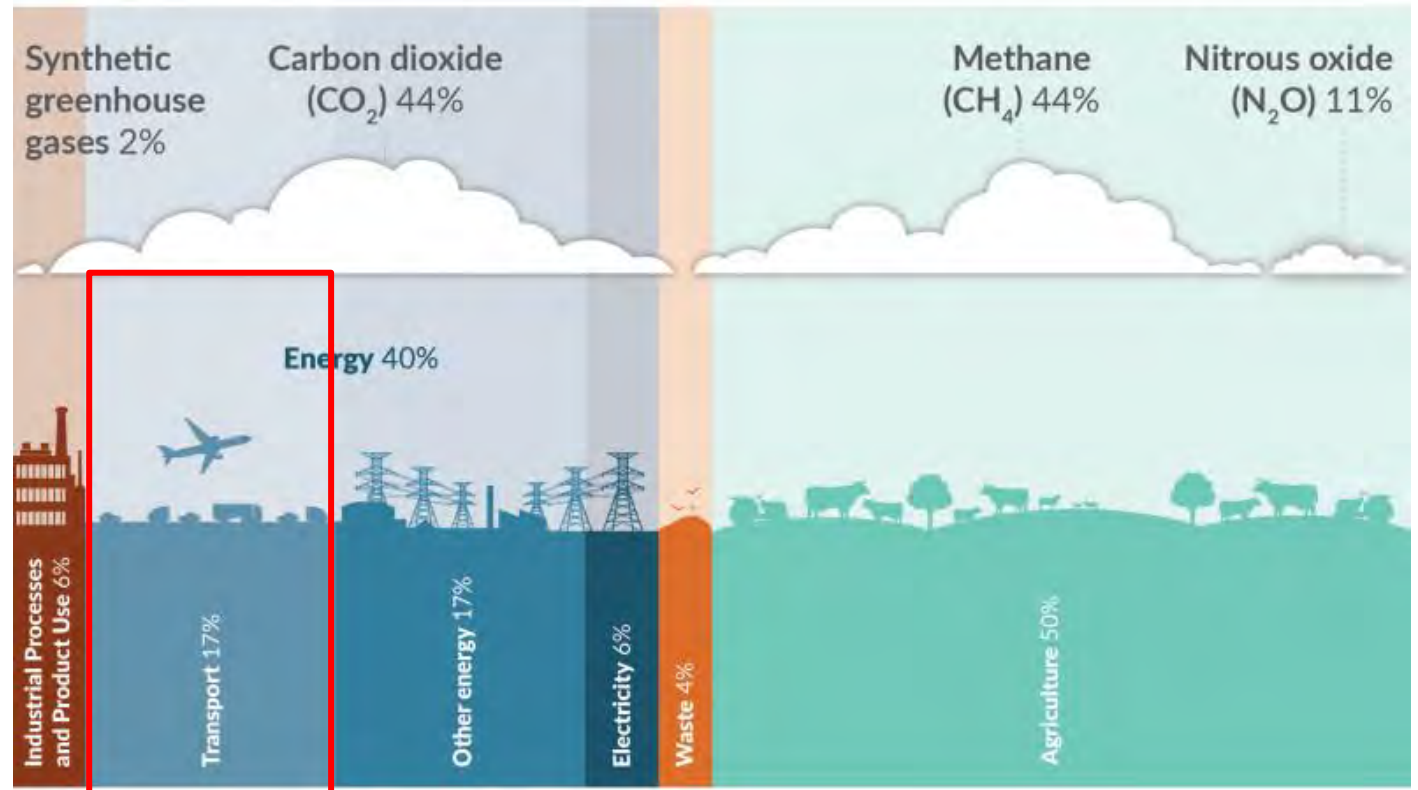
Grace B. Villamor, Peter Hall, Muthasim Fahmy and Paul Bennett



Background

Context:

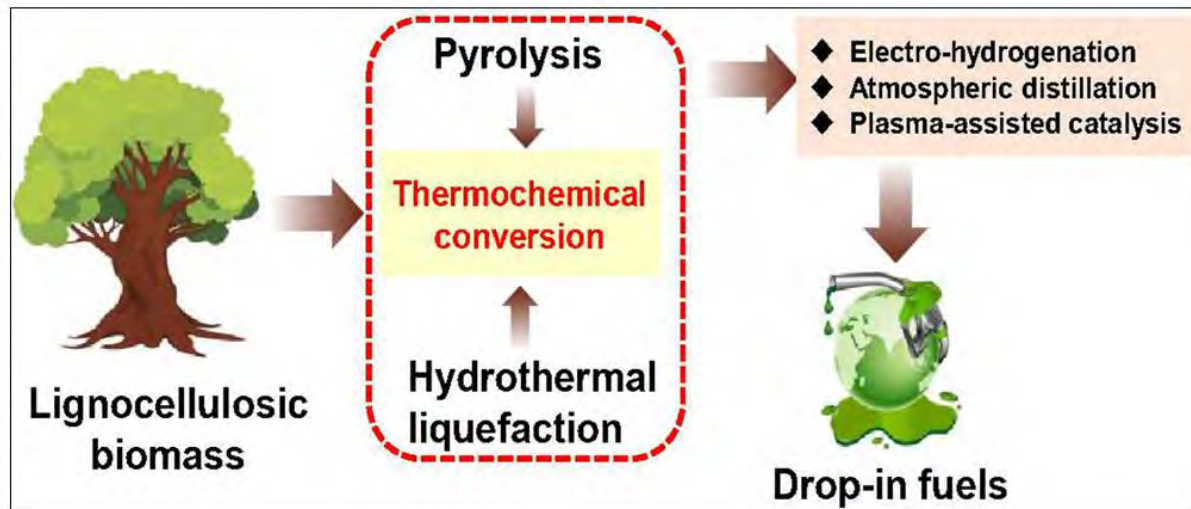
- Transport is one of NZ's largest sources of GHG emissions (17% of gross emissions)
- Highly dependent on imported fossil fuel
- Growing demand for liquid fuels: **7-8 billion litres** (petrol, diesel, jet fuel and fuel oil)
- Very little biofuel use
- NZ's target of the 2050 carbon neutral: “**renewable energy**”



New Zealand's emissions profile in 2020
(Source: MPI 2022)

Wood-based liquid biofuel and opportunities

- **Liquid biofuels** are renewable, low-emissions fuels that can be blended with petrol and diesel to reduce greenhouse gas emissions from transport.



Source: Liu and Yu (2022)

- **Opportunities:**

- 7.2% of primary energy (currently supplied from wood)
- Residual wood resources: 12 PJ unused for energy
- 1 to 2 million ha of marginal land can be used for energy

Source: Hall (2012)


“The largest opportunity for increased use of bioenergy is the replacement for imported fossil transport fuels, particularly diesel and aviation fuels where there are no current replacements for liquid fuels.”

Growing plantation forest for energy

- **Radiata pine** – model species
 - Management regime of 833 stems pa ha (initial stockings)
 - No thinning or pruning
 - Final stocking ~670 stems/ha (at age 25 and annual biomass increment of ~37m³)
 - Total volume: ~900 m³/ha

Liquid Biofuel Research Report

By assessing biofuels carefully on their emissions reduction potential, technological readiness and their best-use applications, we can ensure they play an effective role in New Zealand's net-zero transition.

[READ SAPERE'S LIQUID BIOFUEL RESEARCH REPORT](#) 



<https://www.eeca.govt.nz/insights/eeca-insights/liquid-biofuels-insights-summary/>

Wood-based liquid biofuel: the challenge

Social acceptance

- a powerful barrier of wood-based biofuel
- receives little attention or is missing in a lot of renewable energy reports

Why it matters?

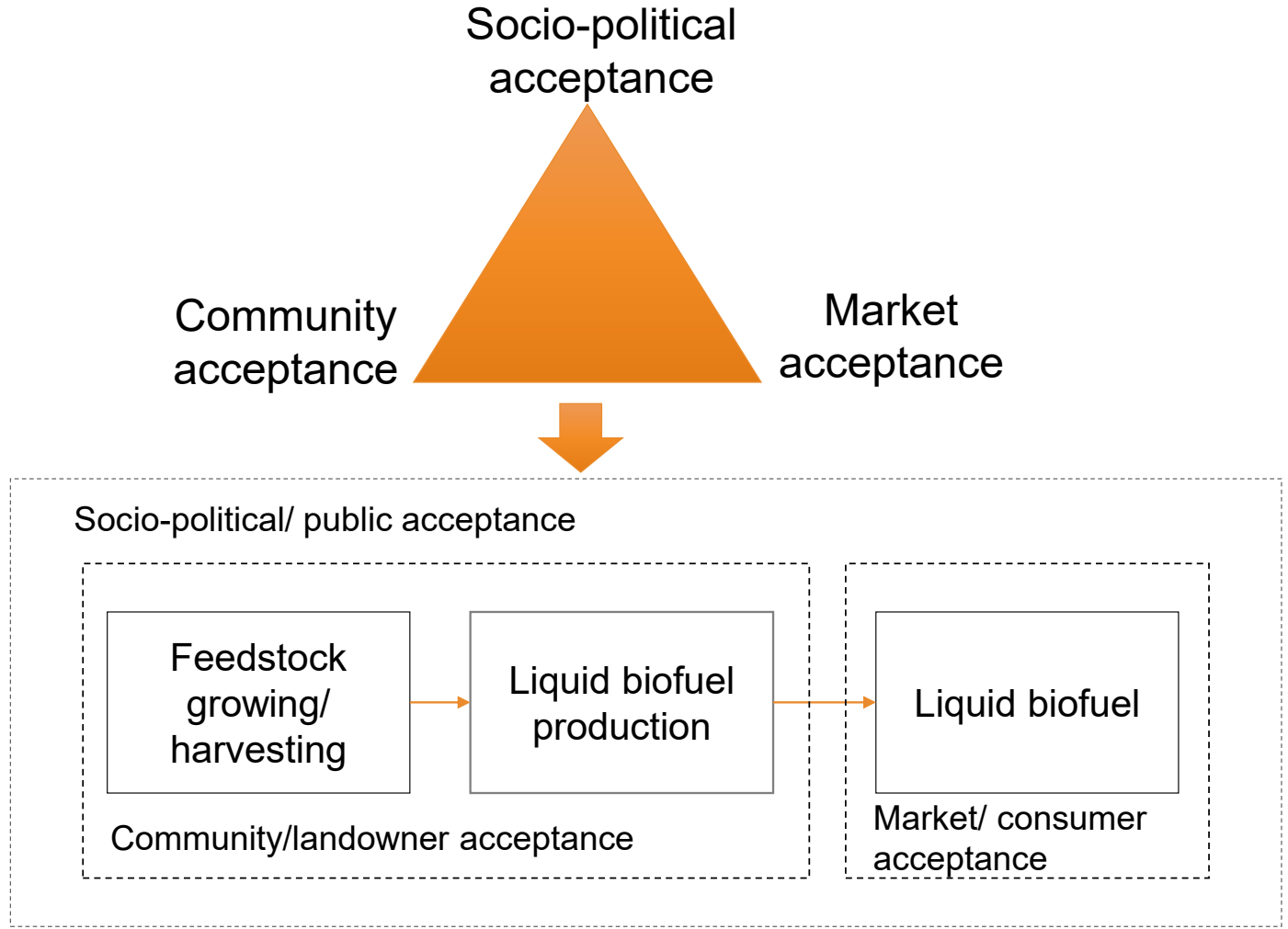
- Market demand – crucial for the success of implementation and commercialisation
- Policy support
- Realising environmental benefits and social benefits

<https://naturalenergyhub.com/>



Triangular model of acceptance (TMA) framework

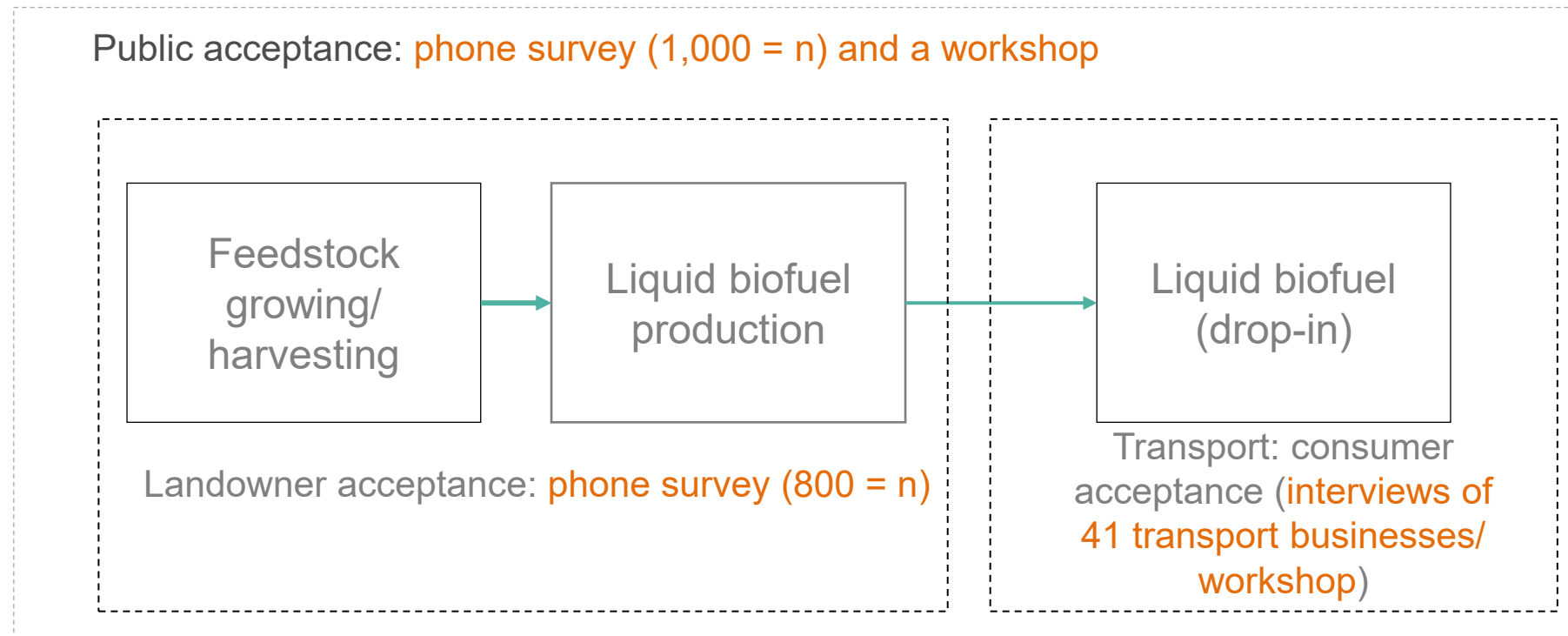
- TMA was conceptualised and applied in wind energy technology (Wüstenhagen et al. 2007)
- Social acceptance can be explained within three (3) dimensions:
 - Socio-political – indicates (general) public opinion
 - Community (landowners) – focused on the production
 - Market/ consumer – market uptake



Adapted from Chin et al. 2014

Methods

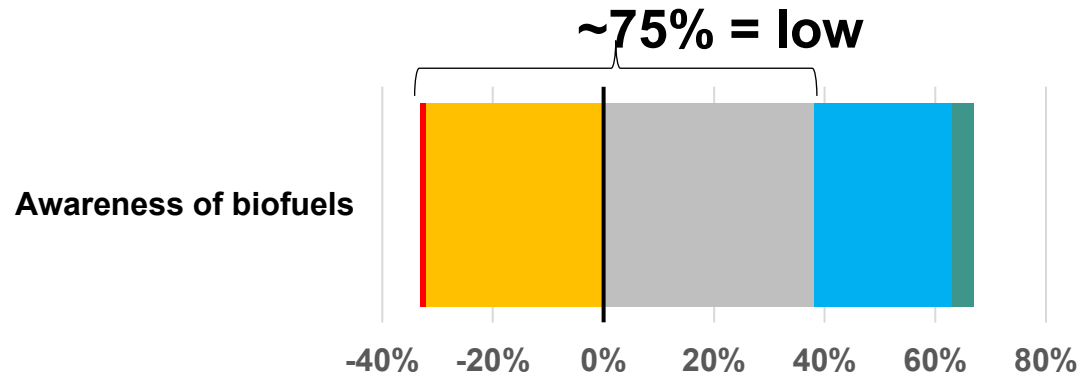
- Mixed method approach: surveys (online and phone) and workshops



- Data collection: June 2022 – June 2023

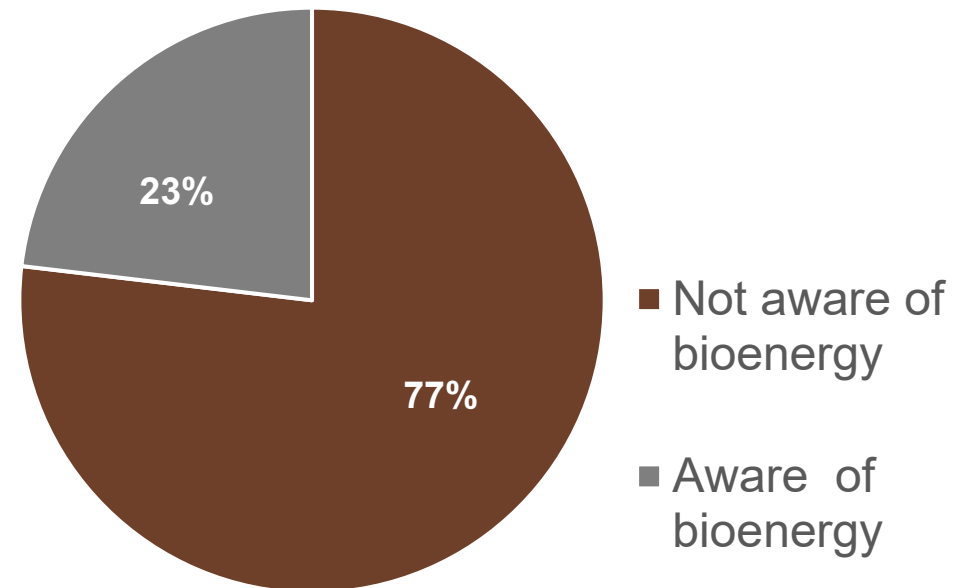
Initial results: awareness towards (wood-based) biofuel

Landowner



- I have never heard of the term before today
- It's a term I've heard but don't really know anything about
- I have heard and know a little about
- I am familiar with and know a fair
- I have considerable knowledge

Public

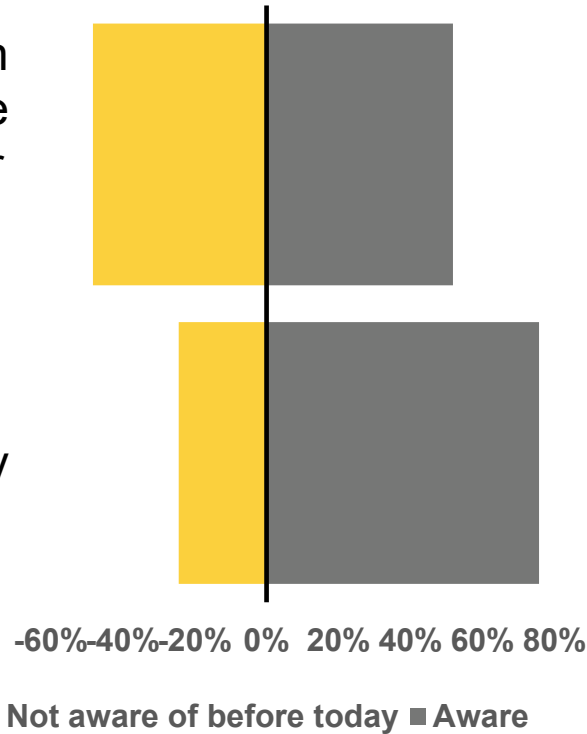


Initial results: Perception on production

Landowners

Large scale production of biofuels may require increasing the number of plantation forests in NZ

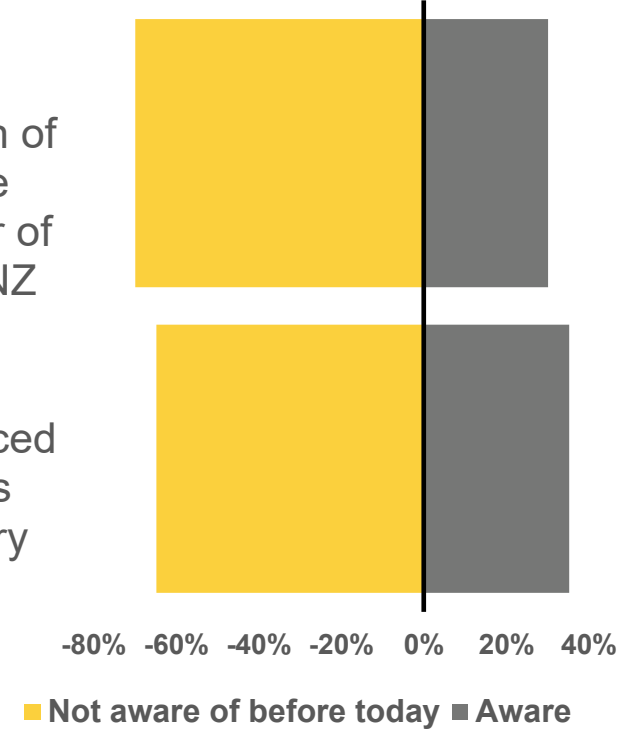
Biofuels can be produced from woody biomass created by the forestry industry



Public

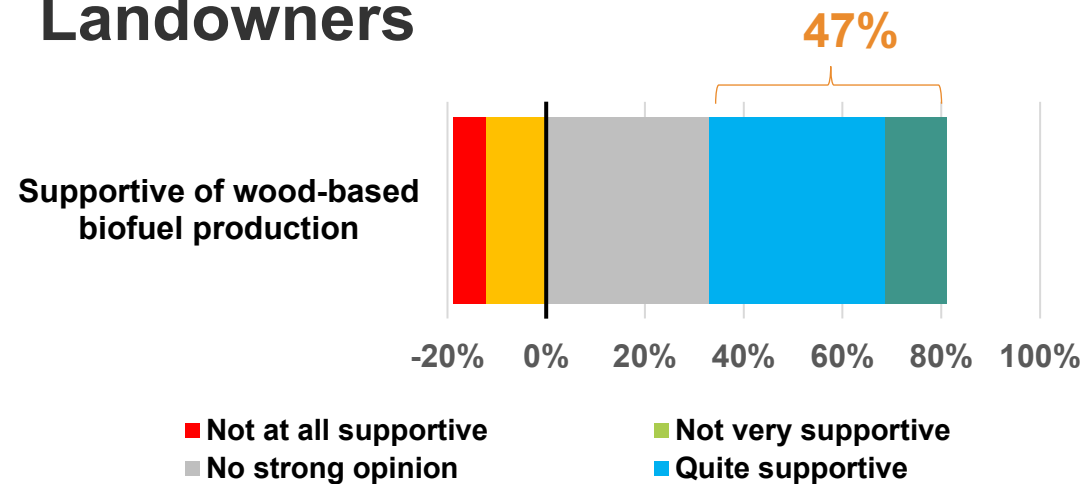
Large scale production of biofuels may require increasing the number of plantation forests in NZ

Biofuels can be produced from woody biomass created by the forestry industry



Initial results: Support for biofuel production

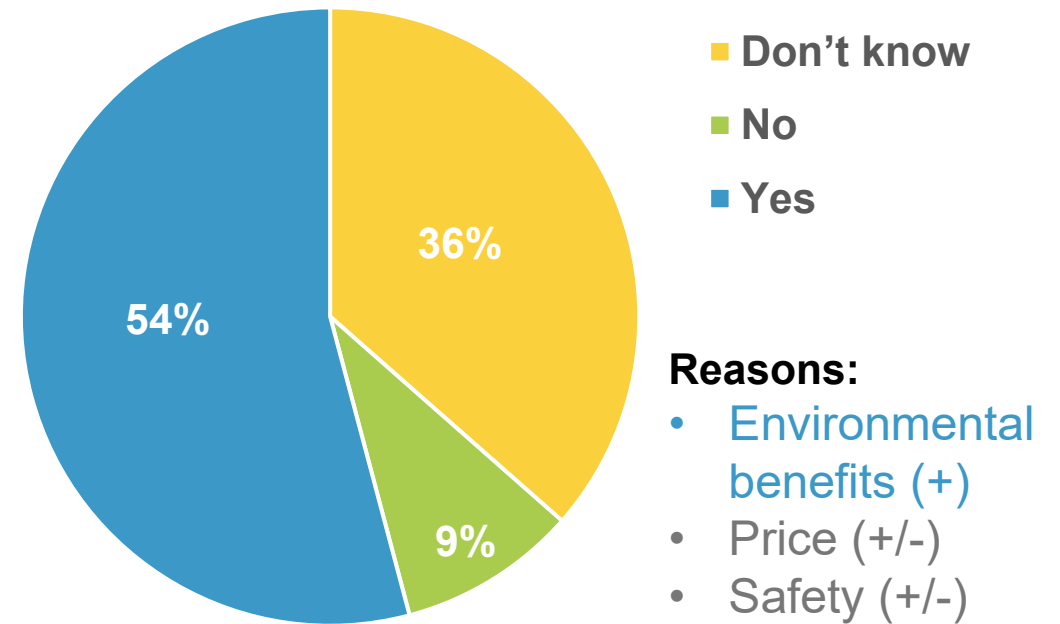
Landowners



Reasons for supporting or not supporting:

- Good use of slash/forestry residue (40%) (+)
- Focus should be on food production (24%)
- Good alternative energy source/diminish fossil fuel use (19%) (+)
- Not high enough returns (18%)
- Not a good use of land (16%)
- Not enough information about it (13%)
- Helping climate change (13%) (+)

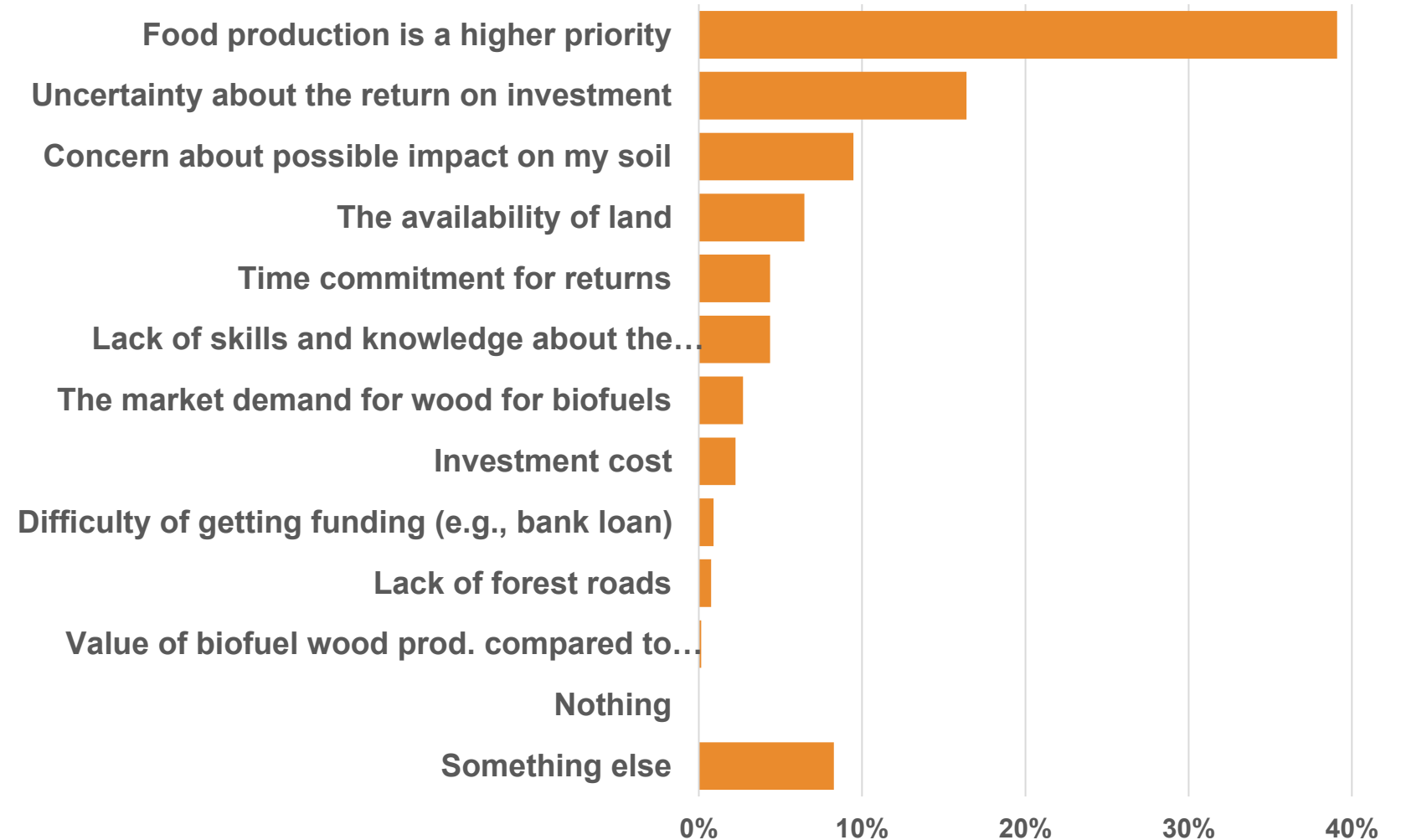
Public



Push factors

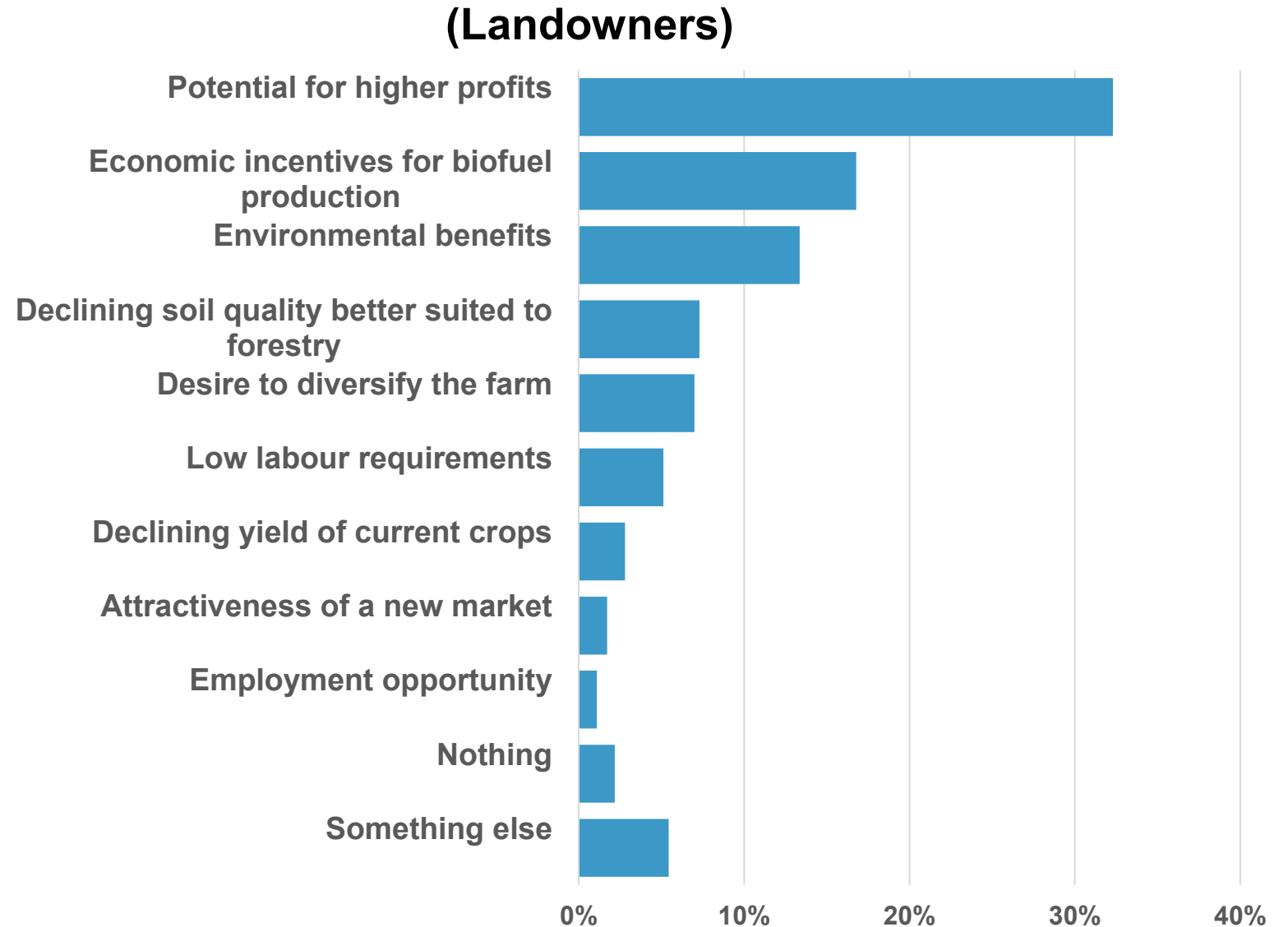
(Landowners)

- Factors that “push” away from engaging in biofuel production. Factors are often negative and undesirable.

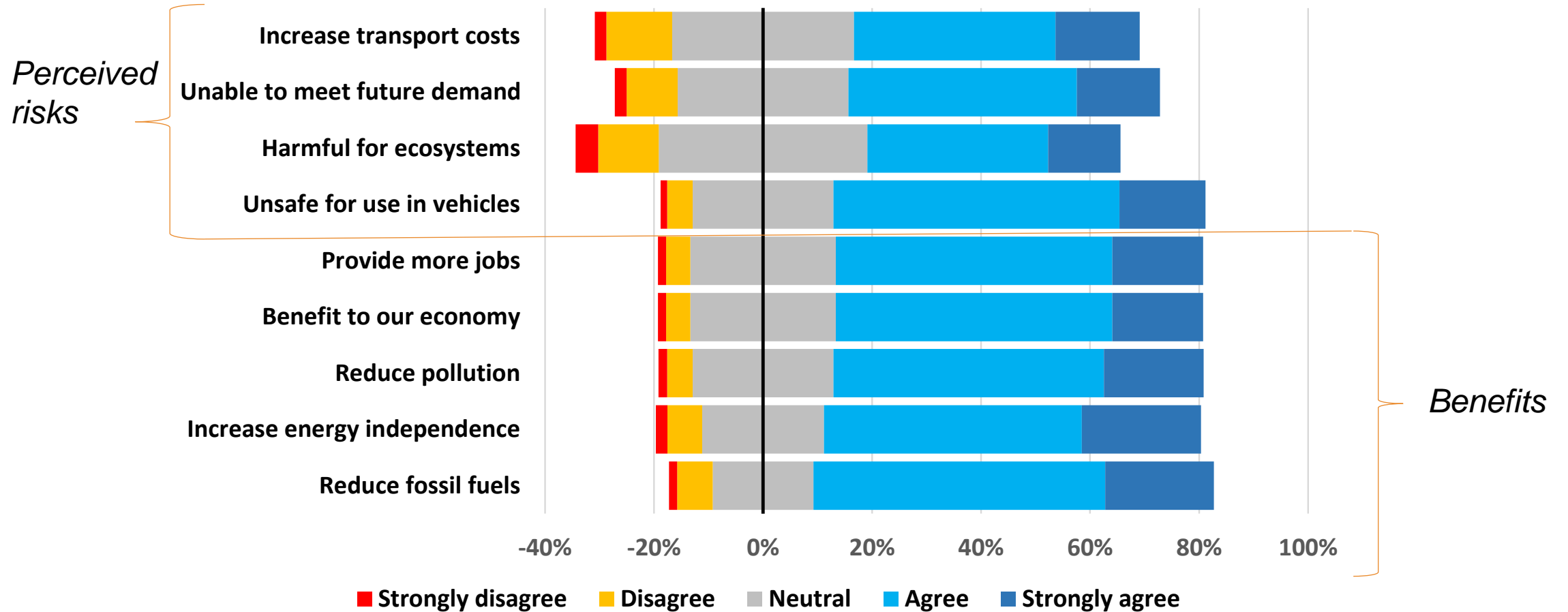


Pull factors

- Pull factors are the positive conditions and attractions of a potential destination that entice individuals or groups to move there.



Public perception of liquid biofuel ...



Summary and what's next?

- **Awareness:** Remains low for landowners and the general public in New Zealand
- **Support:** Good use of forestry residue (48%) for landowners, whereas environmental benefits for the public
- **Push factor/perceived risks:** Food production is their priority (landowners); unsafe for use in vehicle
- **Pull factor/benefits:** If it will generate higher profits (landowner); reduce fossil fuel use (public)

What's next?

- On-going analysis of the consumers' acceptance (heavy road transport, tourism operators).
- Integrate the landowners' and the public acceptance with transport businesses.

Thank you!

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Prosperity from trees *Mai i te ngahere oranga*

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