



The Forests Dialogue

ENGAGE! EXPLORE! CHANGE!



Field Dialogue on Tree Plantations in the Landscape (TPL) in New Zealand

29 October – 2 November 2018 | Rotorua, New Zealand

Co-Chairs' Summary Report

By George Asher, Peter Clinton, Peter Kanowski and Ivone Namikawa

1. Introduction

The Forests Dialogue's (TFD) New Zealand Tree Plantations in the Landscape (TPL) Dialogue is third in the TPL field dialogue series, which was initiated following TFD's Scoping Dialogue on Intensively Managed Planted Forests ('IMPF'; September 2015, Durban, South Africa; subsequently renamed Tree Plantations in the Landscape (TPL) to emphasise its focus, and the landscape context of tree plantations). TFD TPL Dialogues are conducted in partnership with the New Generations Plantations Platform (NGP¹), and with key stakeholders in each field dialogue location. Earlier TPL field dialogues were held in Chile (May/June 2016) and Brazil (March 2018).

The Durban Scoping Dialogue agreed on five priority areas for future dialogue about tree plantations² (Box 1), and noted that the particular mix and emphasis of priorities discussed at each field dialogue would depend on its context.

BOX 1. PRIORITY TOPIC AREAS FOR FUTURE DIALOGUE ABOUT TREE PLANTATIONS (DURBAN, 2015)

- 1. Plantation forests in the context of the global development agenda** (as represented, for example, by the Sustainable Development Goals) & megatrends, and in the contexts of development at multiple scales, from global to local. This topic would also include consideration of:
 - the definition and scope of plantation forests and 'IMPF', and associated data and reporting issues;
 - articulation of a shared vision for the roles of plantation forests.
- 2. The design and implementation of plantation forests in the context of a landscape approach**, and at different scales & geographies. This topic includes consideration of approaches to landscape-scale integration of forestry & agriculture, and of meeting multiple demands from and through sustainable productive landscapes. It also includes exploration of the contribution of plantation forests and planted trees of other forms to landscape restoration.
- 3. Approaches to enable good governance and inclusive development**, including (but not limited to):

TFD STEERING COMMITTEE 2018

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Asia Indigenous Peoples Pact (AIPP) – Thailand

Matthew Reddy

World Business Council for Sustainable Development (WBCSD) – Switzerland

Francisco Rodríguez

CMPC – Chile

Christopher Stewart

Olam – United Kingdom

In Collaboration with:



- recognition of rights holders in decision processes;
 - implementation of the principle of Free, Prior and Informed Consent;
 - exploration of how different models of plantation forest development can act as models for inclusive development and locally-controlled forestry;
 - exploration of the complementary and synergistic roles of key actor groups (e.g. governments, financiers, businesses, consumers);
 - promoting of the flow of information between stakeholders and across scales.
4. **Identifying key externalities associated with the development and management of plantation forests**, from the perspectives of multiple stakeholders; identifying gaps in knowledge; and considering the net impacts and externalities of plantation forestry as key decision criteria. This topic would also consider the definition and assessment of environmental and social services associated with models of plantation forestry, and how they might be monitored.
 5. **The diversification of the forms and species composition of plantation forests, the sustainability of plantation forestry systems, and access to and use of new technologies.**

Source: TFD IMPF2 Scoping Dialogue, Co-Chairs' Summary Report³.

2. Dialogue Context, Objectives and Summary Report

TFD establishes an Advisory Committee for each of its dialogue series. The TPL Advisory Committee identified the following objectives for the New Zealand (NZ) TPL dialogue, in the context of the priority areas agreed in Durban:

- ➔ What can we learn from the Māori approach to forestry that can add value to forestry management systems for improved sustainability?
- ➔ How can intensification and extensification through the Billion Trees Programme promote tangible forest ecosystem services for regional development?
- ➔ What sustainable intensification research and practices can maximise timber production on existing forest estates?
- ➔ How can planted forests support New Zealand to meet its Paris commitments?

A Background Paper⁴ was developed to inform participants, around 60 of whom convened in Rotorua on 29 October for two days of field visits and two of structured dialogue, beginning with introductions and introductory presentations⁵. New Zealand and international participants were equally represented. A list of participants and the program are available at the TFD TPL website⁶. The dialogue was co-chaired by George Asher (Ngāti Tūwharetoa tribal member, NZ), Peter Clinton (Scion, NZ), Peter Kanowski (Australian National University) and Ivone Namikawa (Klabin, Brazil). This summary report, which focuses on learnings from the dialogue, has been prepared by the Co-Chairs.

3. Field visits – NZ tree plantations and Māori approaches to forestry and development

The first field day focused on corporate tree plantations in the central North Island and associated land use issues, including strategic and operational goals, plantation management for wood and environmental services, environmental challenges of steep land harvesting, and interactions with recreational uses (such as mountain biking) and with farming. The second field day focused on the approaches taken by Māori Trusts to the development and management of tree plantations and other economic opportunities on their lands⁷, and on appreciating Māori culture, values and aspirations. The Co-Chairs thank all the host organisations and individuals for the outstanding contributions of the field days to participants' learning about TPL in the New Zealand context.

Each field day ended with small group reflections that were collated by the Co-Chairs. The Co-Chairs then summarised learnings from the field visits in relation to each of the four objectives for the New Zealand TPL. These are presented in Box 2.

4. Dialogue structure and development of dialogue themes

Two days of structured dialogue followed the field days. These two days comprised:

- an initial plenary session with participant introductions, a reporting back from Co-Chairs on learnings from the field days, plenary reflections from participants on their field learning and perspectives more generally, and brief commentary from representatives of a suite of stakeholder groups – government, Māori, researchers, social NGOs, tree plantation investors and tree plantation managers – on TPL in the New Zealand context.
- two half-day sessions comprising breakout groups focused on each of the four topic areas, followed by plenary reporting, and;
- a concluding session beginning with small groups in which both local and international participants were represented, focused on learnings for each of New Zealand and international participants; the outcomes of these groups contributed to a final plenary.

BOX 2. CO-CHAIRS' REFLECTIONS ON LEARNINGS FROM FIELD DAYS

Topic 1. What can we learn from the Māori approach to forestry that can add value to forestry management systems for improved sustainability?

- We learned that Māori values are very connected to the land and the life force (Mauri), and that these are reflected in the strongly future- and community-oriented perspective of Māori iwi. We heard Māori people talk of the inseparability of land and people, the significance of ancestry in conferring responsibilities for and rights over land and water, and the selflessness of elders in making decisions about land use in terms that would benefit future generations rather than themselves.
- The strength of these values were evident in many ways – for example, in the decision of one of the Land Trusts



A field stop at Matahina Dam to see steepland forestry



The view from the overlook at Matahina Dam, with Galatea township below



A lunch stop at Aniwhenua Lake



Leadership from Tauhara North No. 2 Trust explained the tribe's land use

we visited, in an era before the importance of such protection was recognised internationally, nationally or nationally, to set aside 30% of its land area for natural vegetation to protect watercourses and lakes.

- We understood land to be a core asset for iwi, with tenure security afforded as a result of Treaty settlements. We came to understand the significance of the interdependent phrases: Kia mau ki te whenua (secure control of the land), Kia whakamahia te whenua (undertake enterprises upon the land), Hei painga mo nga whakatupuranga (for the generations to come).
- We recognised the significance of iwi leadership in sustaining and building communities and advancing their aspirations and interests, and were fortunate to meet and learn from groups of impressive leaders. We also recognised the importance of robust governance arrangements for Land Trusts, and between Land Trusts and the NZ Government. We appreciated learning of the vision these leaders held for their communities, how they developed strength in their negotiations with other parties, of their interest in building mutually-beneficial partnerships with government and commercial partners, and of the benefits they had realised from managing their land jointly.
- The aspirations and values of iwi were expressed in a variety of metaphors, including as the quadruple bottom line (culture, environment, economy, society). We heard from Māori leaders that they understand that compromise between these elements was necessary to realise development aspirations consistent with their values. In the same context, we learned of the underpinning principle that collective, cooperative, long term planning and management of Māori land and the environment generate sustainable future benefits for all members of the iwi, noting that profits from Land Trust businesses are directed primarily to community purposes.
- We learned that iwi were very open to innovation in this context, for example in business partnerships such as geothermal energy, or in their willingness to consider new fibre crops.
- We also learned that what we saw on the field days was not typical of the situation of many other iwi, for a range of reasons including geographic location and features of their land in relation to economic opportunities, challenges in community cohesion and to leadership, and lack of progress in Treaty settlements.

Topic 2. How can intensification and extensification through the One Billion Trees Programme (1BT) promote tangible forest ecosystem services for regional development?

- We recognised that 1BT places forestry as central to landscape restoration and climate change mitigation, and to reaching NZ's Paris commitments; we saw it as a positive policy initiative by the NZ government. We recognized also the opportunities that 1BT offered to strengthen existing forest-related partnerships, and build new ones between diverse interests, beyond the primarily commercial framing of current forestry partnerships.
- We noted that 1BT is based on the principle of "Right Tree, Right Place, Right Purpose" (RTRP2), and that in this context, it would require a significant focus on native trees and the ecosystem services they deliver. We discussed with both Māori and (Pākehā) the constraints that current policy settings imposed on the certainty of rights to use indigenous

trees that are planned to be established under 1BT, noting the centuries-long time frames for many of them to reach harvestable sizes.

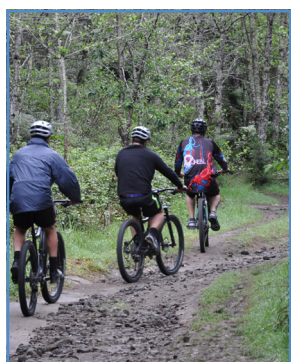
- We also noted the relative paucity of information and knowledge of silvicultural systems for native tree species, for example in various agroforestry or forest restoration contexts, and that these might be informed by experience of such systems from elsewhere.
- We discussed how 1BT would be enabled by functional ecosystem service markets, beyond that for carbon; and noted the example of how a market-based mechanism to reduce nitrogen pollution from farming had contributed to more sustainable land use at a landscape scale.
- We recognised the importance of robust, transparent and trusted methodologies and monitoring processes for ecosystem services across the landscape, and of both Māori and Pākehā interests in relation to these (for example, in the impacts of water quality). We noted that establishing a multi-stakeholder platform such as a roundtable, that could recommend technical studies and research on relevant indicators to monitor the results of 1BT, could assist realisation of 1BT objectives.
- Prompted by a field day example of management of steep slopes adjacent to watercourses, we discussed the need to ensure policy alignment to avoid perverse outcomes, such as replanting with plantation forest rather than restoring to native forest because (in this case) the latter option currently invokes liability for deforestation emissions, whereas the former does not.
- We also discussed how a multi-stakeholder catchment mapping process, drawing from known ecosystem services, could be used to identify sites that would benefit and deliver most from the restoration of native forests.

Topic 3. What sustainable intensification (SI) research and practices can maximise timber production on existing forest estates?

- We recognised that the meaning of ‘sustainable’ required context-specific clarification and elaboration; so too did that of ‘intensification’. We noted that sustainability is both historically-based and ‘a moving target’; that the concept of SI depends on both innovation by the forestry sector and its engagement with broader communities of interest; and that transparency of monitoring and adaptive management are critical to the success of SI.
- In those contexts, we discussed how SI needs to be embedded in a landscape approach to be acceptable to society more broadly; how sustainability of tree plantations should consider the whole value chain (both inputs and outputs) and end of life use; and how ambitious SI targets should be related to ecosystem limits and thresholds.
- We also discussed the site-specific impacts of tree plantation production systems, noting (for example) the potential impacts on soil properties from tree production and machinery use.
- We explored the suggestion that SI should not focus on productivity only, but should go “beyond productivity” to the intensification of other ecosystem services. In that context, it was suggested that enhanced landscape resilience (with a particular focus on biodiversity, soil stabilisation, and flood mitigation) should be the primary objective, rather than intensification per se.
- Opinions varied on whether SI was already a reality; a need; a threat; or an oxymoron. We agreed that the reasons for each of these perspectives needed further discussion in the post-field dialogue.
- We recognised the wider context of discussion around SI of production systems, in the context of global demand pressures and supply options.



Participant discussions at Scion, a Crown research institute



Mountain bikers in Whakarewarewa Forest



Logs being transported from Lake Taupō Forest



John Bishara (CEO) and Heemi Biddle (Deputy Chairman) of Lake Taupō Forest Trust explain the trust's history and operations

Topic 4. How can planted forests support NZ to meet its Paris commitments?

- We noted the intersections between issues focused on this topic and those related to the others. In particular, we recognized the ambitions of 1BT in relation to NZ's Paris commitments, and discussed how a wider set of ecosystem service targets and markets (for example, in relation to biodiversity or water quality) might deliver a better balance of land uses across landscapes. We heard of and observed firsthand examples of – on the one hand – cases in which a combination of ecosystem service targets fostered more sustainable land use on a former pastoral property, and – conversely – cases in which the returns from conversion of plantations to pasture were sufficient to offset the associated Emissions Trading Scheme (ETS) liabilities.
- We learned that the history of NZ's Emissions Trading Scheme has been difficult at times, with concerns about market volatility, and about equity between pre- and post-1990 forest owners and across land uses.
- We discussed how emissions reductions goals from land use sectors needs to be conceived and delivered in a landscape context, and wondered whether current NZ carbon accounting rules are leading to missed opportunities for better outcomes across the landscape.
- We noted the links from 1BT and SI to increased forest area and increased stocking, respectively, which will increase forest-based carbon storage, so long as soils remain healthy.

A key outcome of the initial plenary was agreement to broaden the scope of the topics identified by the Advisory Committee (#2 above), to better reflect participants' understanding of these topics in the New Zealand context. These broader themes were those which the breakout groups explored.

5. Exploration of dialogue themes

During the dialogue process, the four thematic questions identified by the Advisory Committee prior to the dialogue were reinterpreted by participants as the following:

- What can we learn from the Māori approach to forestry, and what are the challenges to realising Māori values for forestry more widely?
- What are the challenges to the One Billion Trees Programme delivering tangible outcomes?
- What do we understand by sustainable intensification, and how should intensification that is sustainable be implemented?
- What solutions are required for New Zealand to realise the full ecosystem service contribution of planted forests, including its Paris commitments?

Discussion of each of these themes by breakout groups is summarised below.

5.1 Theme 1: The Māori model of forestry

(What can we learn from the Māori approach to forestry, and what are the challenges to realising Māori values for forestry more widely?)

Discussions between participants and Māori Land Trust leaders, members and staff during the field days, and the contributions of both Māori and non-Māori New Zealand participants to the Dialogue, were instrumental in informing discussion of this topic. Many international participants also reflected on the situations of Indigenous peoples in their own countries, both in the context of the tree plantation sector and more generally, in relation to this topic.

Identifying challenges to adoption of the Māori model of forestry

The core elements of the Māori approach

Discussion first explored and identified the core elements of the Māori approach to forestry, which are themselves an expression of the key values of Māori communities in relation to their lands, waters and atmosphere.

These were summarised as:

- ➔ An intense sense of belonging (tūrangawaewae) to the whenua (land) they have occupied continuously for the past 700 years;
- ➔ Maintaining authority over their land (mana whenua) and the right to exercise decision-making (tino rangatiratanga) in respect of their ancestor Papatūānuku (the Earth Mother), who is also recognised as the landform;
- ➔ Respect for the people of the land (tangata whenua) who constantly affirm and demonstrate their right of occupation (ahi kā);
- ➔ Maintaining respect for the legacy of their ancestors by nurturing and exercising their customary protocols (tikanga and kawa) and retaining their accumulated knowledge and experience (mātauranga) through oral history that predates their existence in Aotearoa (New Zealand);
- ➔ Maintaining respect for their natural taonga (treasures) including the land, the waterways, the cosmos, forests and all ecosystems associated with them;
- ➔ Maintaining respect for their cultural and social taonga (treasures) including the language (te reo), their institutions of marae (meeting places), tribal (iwi) and sub-tribal (hapū) arrangements, protocols of engagement (mihi, pōwhiri), their regulatory institutions and beliefs (tapu) and the respect for people (mana tangata);
- ➔ Maintaining the belief that people of the land (tangata whenua) have the right to exercise their autonomy in fulfilling their aspirations (mana motuhake);



Participants visiting Timberlands Kaingarōa Forest



Timberlands' Risk Manager Colin Maunder explains operations at Kaingarōa Forest



Lake Rotoaira Forest with sacred Mount Pihanga in the background



Ivone Namikawa (Klabin, Brazil), Marcelo da Silva Pereira (Fibra, Brazil) and Gary Dunning (TFD, United States) in Whakarewarewa Forest

- Exercising their customary right of guardianship and wise use (kaitiakitanga) over their taonga tuku iho (the treasures that have been bequeathed to them to respect and transfer for the benefit of the generations to follow);
- The concept of sustainability is applied holistically to the management of all taonga. It is intrinsic to the principles and protocols that apply to the management and use of the land, the waters, the atmosphere, the natural environment and their related resources. It is combined with modern science, monitoring, measuring progress and achieving good outcomes for tangata whenua (people of the land) and communities;
- For tangata whenua, kaitiakitanga is a perpetual obligation, and achieving sustainable outcomes is a priority that supersedes profits. Once the formula for sustainable use and practices has been adopted, the creation of benefits (social, cultural, economic and environmental) become accepted outputs of any action or enterprise;
- A key notion is creating and growing benefits for future generations.

Pre-engagement organisation by the land owners

The Māori models of forestry development visited during the field trip demonstrated characteristics that enabled successful relationship building. These characteristics were based on customary strengths, and included:

- Strong, active, internal leadership that was respected by the land owners;
- Extraordinary capacity and foresight of the owners of 68 land blocks at Lake Taupō Forest Trust (in multiple ownership), who were willing to reach a consensus on the future use of their individual collective land parcels and to agree the parameters for sustainable development and protection of the taonga associated with these lands, especially the freshwater resources;
- Agility and capacity of these owners to agree, within a relatively short period of time, to aggregate their titles under a single governance structure, and to retain their customary connection with their original land and waterscapes;
- Unselfish sacrifice by these land owners to make decisions to benefit their descendants in the knowledge that they would not receive benefits, in their lifetime, from the two 30 year rotations of planted forests.

Establishing and maintaining the partnership

The Lake Taupō Forest venture has developed into a highly successful example of intensively managed commercial land use. This venture has displayed a number of attributes that are not always activated or possible in most global situations. In this Māori model, indigenous land owners approached private corporations and the government to support them to establish

planted forests on their lands. At the time, the corporate sector did not have the appetite to accommodate the sustainable development parameters stipulated by the land owners, and so rejected the land owners request for financial capital. In contrast, the government at the time decided that there was sufficient shared value in the venture to capitalise the venture for two rotations. Mid-way through the first rotation, both parties agreed that there was sufficient equity built up within the venture to enable the Crown to exit at the end of the first rotation, and for the Trust to own and afford to capitalise the total business.

The key drivers to establishing and maintaining a successful land owner - government partnership included:

- Land owners' strong leadership and organisational ethic that transformed into robust governance;
- A good faith platform was established between the two parties in recognition of their historical association and the scale of the shared value of the venture;
- The good faith platform enabled collaboration and acceptance of good practice standards, transparency and accountability, including the carrying out of independent due diligence to scope commercial, political, cultural, and legislative frameworks;
- The land owners rejected a landlord/tenant relationship that would afford minimal control over their lands with low financial yield and low future growth. Instead, they chose a stumpage arrangement that enabled them to participate as business partners in the joint venture and to share in the decisions, the risks and the net profits of the business. The stumpage share was arrived at on the basis of the respective value of the Crown's input (financial and management) and the owner's contribution (land);
- A dual, coordinated and agreed approach enabled reform of state regulatory and policy frameworks that aligned to land owners' customary values and aspirations.

Addressing these challenges, in New Zealand and elsewhere

Drawing on the above, a number of preconditions were identified to the successful adoption of the Māori model of forestry:

- changing a 'single focus' ideology – e.g. corporate profit and shareholder returns – towards the wider focus of creating shared value;
- drawing inspiration and learnings from other domains, e.g. those associated with water protection in New Zealand – to the forestry sector and its range of stakeholders (including, in New Zealand, the Crown), and then further to the wider land-based business sector;
- building collaborative approaches and trust, while recognising that these required substantial commitment of time and resources to be satisfactory and sufficiently inclusive;
- adapting political, cultural and legislative frameworks (including in relation to land tenure) needed to allow the adaptation and adoption of Māori model elsewhere.

In these contexts, participants identified the following steps to foster the adoption of the Māori model of forestry more widely:



Participants inside Ihenga Whare (traditional Māori meeting house) on Tangatarua Marae at Toi-Ohomai, Rotorua



At the entrance to Nga Awa Purua and Rotokawa geothermal power stations with Tauhara North No. 2 Trust



Bubs Smith (Lake Taupō Forest Trust) at Houtōrangipo, with Mount Ruapehu in the background



Sandy Gauntlett (Global Forest Coalition) and Lorraine Dixon (Waikato Tainui) at Houtōrangipo

1. Relationship Building

- communicating examples around the development of successful relationships, including information on protocols, layers of authority, and dialogue processes;
- communicating the concept of indigenous peoples relationship with the land and the natural resources and their ecosystems (whanaungatanga) – note that this term is more often applied to the relationship between humans. In the Māori world (te Ao Māori), the genealogy starts with supernatural beings and ends with human. In between humans and preceding them in genealogical order are all the species of flora and fauna;
- establishing a multi-stakeholder platform for information sharing;
- sharing experiences, knowledge and history, to help mutual understanding;
- evaluating each land use within a long term parameter that maintains landscape, hydrological and environmental sustainability.

2. Developing Programmes

- communicating successes, including of the outcomes and approaches that have worked to achieve the success:
 - › include history, values, aspirations, governance, protocols, objectives, interests, mapping taonga, multi-generational thinking;
 - › identify the quadruple bottom line outcomes, reflecting multi-purpose objectives, and noting these are context dependent;
 - › review and consider examples from local, regional and national levels;
 - › note that multi-generational rather than short-term thinking is necessary, and that further work is necessary to explore and assess the benefits of the former over the latter.
- recognising that success is founded on building trust, securing long term land tenure, building good governance structures, and developing business models that maintain and reflect core values and aspirations.

3. Promoting Success

- using stories of success and thus developing belief in success, illustrating the conditions needed for success (as above);
- working closely with policy agencies to generate shared value – Indigenous groups and corporate and other actors can work together, with government, to advocate for change;
- and noting that the world needs good stories!

5.2 Theme 2. The One Billion Trees Programme

(What are the challenges to the One Billion Trees Programme delivering tangible outcomes?)

Discussion of this topic was informed by that at some field day sites, and stakeholder presentations in the initial plenary.

Challenges to the One Billion Trees Programme

In the first stage of discussion, the following key challenges were identified:

- ➔ the need for a narrative around the programme to help communicate its purpose, address wider societal perceptions, and provide communication and transparency with communities and iwi in order to build the social license to execute 1BT;
- ➔ strategic planning, including landscape mapping on a multi-stakeholder basis using an ecosystem approach, to ensure the 1BT were established in the “right place”;
- ➔ factoring in all the values associated with the 1BT – not just carbon sequestration and climate mitigation – over long term and through a cycle that could be (for iconic native species) hundreds of years. This would require development of relevant economic models, identifying what to plant, and where and for what outcomes – i.e. making the right investment decision, and infrastructure necessary to add value to both timber and non-timber native species products - knowledge from an earlier era of native forest management in NZ might inform some of these elements;
- ➔ securing the necessary inputs of land, plants, and labour availability, including the participation of iwi and smallholders, and ensuring survivability and aftercare;
- ➔ undertaking monitoring, assessment and reporting that demonstrated progress and the benefits of programme. Such monitoring, assessment and reporting would need to be independent and speak to multiple stakeholders.

Addressing the challenges to the One Billion Trees Programme

The working group then identified the key elements of responses to each of these challenges, as below.

1. Communication and engagement

A multi-stakeholder platform was necessary to engage different audiences, comprising:

- ➔ the general public, and Māori and other landowners (noting that the Federation of Māori authorities and small growers association would be particularly important);
- ➔ those who would deliver 1BT, including foresters, landowner and grower associations, and plantation companies.

Communication and engagement needed to develop targeted messages for different stages of the supply

chain. Amongst its purposes would be building public acceptance of these new forests, engagement with Māori and small-scale landowners, and fostering an understanding that sustainable harvesting of native species was appropriate where they were planted for that purpose.

2. Strategic planning and mapping

Spatially-explicit strategic planning, conducted in the inclusive terms outlined above, represents “a solution in itself” (noting that is a means of operationalising the landscape approach). In the New Zealand context, such planning could prioritise watersheds and use them as the geographic basis; it would be inclusive of the diversity of actors (including but not limited to civil society, researchers, Māori, small holder associations, and plantation companies), and encompass topics such as water, biodiversity, and areas prone to erosion.

3. Market development and infrastructure for native (and other lesser-used) species

A number of strategies and actions are necessary to foster establishment of native species and value chains based on them; these may apply also to lesser-used exotic species:

- ➔ work to revise building codes, to make them more wood-friendly;
- ➔ research into innovative capital investment sources and structures for native species, including assessing natural capital opportunities’;
- ➔ outreach programmes to engage Māori and small landowners in best management practices;
- ➔ diversification of research budgets away from being almost entirely focused on radiata pine.

4. Resource engagement

Developing the financial, human and planting resources necessary to realise 1BT will require:

- ➔ an evolving, iterative, implementation plan;
- ➔ exploring innovative financing mechanisms;
- ➔ reduce bureaucratic layers, such as those at regional level;
- ➔ investment in genetic resources and nurseries;
- ➔ establishment subsidies for smallholders;
- ➔ adjustment of the ETS scheme to better suit Māori and smallholders, and linking 1BT to other ecosystem service programs;
- ➔ assessing labour challenges and the need for external, often seasonal, workers.

5. Monitoring, assessment and reporting

A stakeholder-oriented, independent monitoring, assessment and reporting system would:

- ➔ build on and adapt as necessary the National Forest Monitoring System;

- ➔ define relevant metrics and indicators based on desired outcomes and audiences;
- ➔ draw support from academics and researchers, civil society, industry and landowners – everyone should have a role, including youth!

5.3 Theme 3 – Sustainable Intensification

(What do we understand by sustainable intensification, and how should intensification that is sustainable be implemented?)

Discussion of the Sustainable Intensification (SI) topic was informed by elements of the field days and the discussions they prompted, by participants' reactions to that and their experiences in their own contexts, and – for some participants – by discussions at the 4th World Congress on Planted Forests in the week preceding the dialogue.

First stage discussion of SI

The first stage of discussion focused on our understanding of the term “Sustainable Intensification”, its origins and contexts, and what we saw as the key issues and challenges to the concept. The main themes and points emerging from this discussion are summarised below.

Origins and contexts

We were reminded of the origins of the terminology ‘Sustainable Intensification’ in the agriculture sector, where it first emerged in response to concerns about global food security in the context of climate change, issues which themselves set in the broader context of sustainable development⁸; a well-developed literature has evolved over the past decade⁹, with contemporary discussion of SI emphasizing the complementarity and importance of both the production and environmental services dimensions of SI, eg:

“The sustainable intensification of agricultural systems offers synergistic opportunities for the co-production of agricultural and natural capital outcomes.” (Pretty et al 2018: 441)

Definitions and perspectives

Various authors have noted the definitional ‘looseness’ around SI; and as was discussed on field day 1, SI could be seen as one of more of a reality, an imperative, a threat, or perhaps an oxymoron. We noted that, as for sustainability, SI represents a process towards a set of goals; and that there has been some 25 years of work in the forestry sector to operationalise and assess the concept of sustainability (eg under certification systems and international and national processes, such as the Montreal Process of which New Zealand was a member). We agreed that SI should be understood not just in terms of the intensification of production, but – as has emerged in the agriculture SI literature – the enhancement and sustainability of other ecosystem services. Earlier discussion had noted how the ‘RTRP2’ principle of 1BT (Right Tree, Right Place, Right Purpose) was foundational to achieve these outcomes. We noted that ‘intensification’ had inherently

negative connotations for some, although there were also alternative views.

Building trust in governance of SI

We agreed that trust in sustainability governance, and in the motivations, values and commitments of actors pursuing SI, underpinned broader confidence in and acceptance of SI. In these contexts, we noted the work and role of the certification systems under which NZ tree plantations are certified, and that ongoing open communication and dialogue were the basis of building relationships and trust around the sustainability of production systems. We reflected how observations from the field days – for example, the high level of trust that participants placed in Māori forest owners' commitment to sustainability – informed our response to those assertions, noting the contrast with common reactions to similar corporate commitments.

We also noted that principles of 'good forest governance' were now well established, including but not limited to those embodied by certification schemes; and that typically, such governance involved each of participatory, regulatory and voluntary elements, which together could provide a sound basis for transparent oversight and monitoring of SI. Subsequent plenary discussion noted also the limits of voluntary governance mechanisms, such as certification, and the importance of a holistic, comprehensive and 'smart' approach to landscape and forest governance¹⁰.

SI of value chains, not just production

We noted that, while the original focus of SI had been only on the 'production end' of value chains, intensification of the whole chain (eg in terms of levels of recovery, development of new products, greater value adding) was a necessary corollary, and was consistent with the expanded focus of forest governance initiatives (eg for Zero Net Deforestation) from the forest to the value chain as a whole. We observed that this understanding was consistent with the strategies adopted by progressive forestry businesses, and with the broader conception of SI – "beyond production" – noted above¹¹.

Second stage discussion of SI – addressing challenges

The second stage of discussion focused on addressing the challenges presented by SI, in the terms outlined above. There was general agreement that SI for some production systems (eg tree plantations) was inevitable, and desirable if it was understood and realised in the inclusive terms identified above; we noted that there were other parts of the landscape (eg natural forests managed for conservation) where SI was not an appropriate goal.

We identified four sets of priorities to address the challenges presented by SI of tree plantations:

1. Characterising what SI means – both generally, and in particular contexts; this requires both research and communication, including into and of risks associated with SI;
2. Developing ongoing dialogue processes in particular contexts to foster understanding and trust, and through these creating opportunities for and models of partnerships to shape future outcomes, including the sharing of benefits (eg from new technologies, and with smaller-scale

actors such as Māori);

3. Governance mechanisms, particularly regulatory & certification systems, need to consider the implications and requirements for sustainability as intensification developed (ie, governance needed evolve in parallel with SI);
4. Consistent with the evolving conceptualisation of SI, it is necessary to focus as much on more efficient use and greater value recovery along the value chain as on increasing productivity.

5.4 Theme 4. Realising the full ecosystem service contribution of planted forests

(What solutions are required for New Zealand to realise the full ecosystem service contribution of planted forests, including its Paris commitments?)

Discussion of this topic was informed by that during the field days, and stakeholder presentations in the initial plenary.

Challenges to realising the full ecosystem service contribution of planted forests

A priority order of challenges in the New Zealand context was identified as the following (although it was noted that these issues needed to be addressed holistically and in a coordinated way):

1. building awareness and education (of the public, landowners, and managers);
2. developing a cost framework for ecosystem services to weigh the positive and negative outcomes, and trade-offs between them;
3. identifying who is going to pay;
4. independent measuring and monitoring regimes that deliver adequate data at reasonable cost;
5. addressing cultural views – in the New Zealand context, there is historical bias favouring farming.

Participants also discussed a set of more general points, from both New Zealand and international experience:

- ➔ In principle, realising contributions from all ecosystem is feasible – but at what scale? Sometimes large scale (e.g. national ETS policy) schemes are difficult to adapt – it might often be preferable to build from smaller successful examples that are lower cost;
- ➔ This could be facilitated by establishment of stakeholder groups, at a pilot level, in various places to test and refine models for ecosystem services. Industry may be willing to contribute to this effort, which would also require working with government, and might be facilitated by New Zealand's Crown Research Institutes; (#2).
- ➔ There is no real standardized international protocol for assessing and monitoring ecosystem services. The WBCSD Guide for Natural Capital is still at a theoretical level, but working toward a standardized framework to implement on the ground;

- ➔ The may be advantages to leveraging different services that deliver benefits at different scales. For example, water is always (relatively) local; carbon is always global;
- ➔ While some lessons have been learned internationally, these need to be adapted carefully to the New Zealand context. For example, Brazil provides an example of empowering groups on the ground, of working in coalition toward better fire management, and then jointly requesting government to pass supportive policies;
- ➔ In the New Zealand context, the Land and Water Forum was an attempt to bring interests together, but it was disbanded because the group could not reach consensus on issues. We need to consider the lessons learned from this experience;
- ➔ Any process needs to identify champions who can be trusted messengers with key stakeholders – especially with farmers;
- ➔ the forest sector should recognize the need to bring agriculture to the table, otherwise they will continue to operate outside ecosystem services frameworks. This goal should be pursued as a partnership, and may be facilitated by communications. An ecosystem services approach could leverage the natural forest component of 1BT, with natural forests integrating services into agriculture areas. While the business case of this approach might not be as strong as some others, it might be seen as less of a threat to agricultural production interests;
- ➔ Taking note of issues that are in the public eye, such as effluent loads, can provide opportunities to open and expand the conversation around ecosystem services at a landscape scale'
- ➔ Investors have a role in leveraging change: if political and public sentiment continues to move towards decarbonization and divestment in polluting activities, finance will dry up for bad actors. It will be in an industry's interest to be as transparent as possible in order to continue to attract finance.

Addressing the challenges to realising the full ecosystem service contribution of planted forests

The first outcome of this discussion was a sketching out of an overarching process for realising the ecosystem service contribution of planted forests. This comprised:

- ➔ pilot-level initiatives focusing on the delivery of ecosystem services, bringing together stakeholders with the aim of working through the 5 key issues discussed further below. Initially these could be relatively small in scale, but ultimately would need to contribute to a coordinated national-level effort;
- ➔ in these, government needs to be a key, but largely silent, partner. Its role might best be that of facilitator and Enabler. It should be recognised that actors at different levels will take the lead if government plays this more supporting role;
- ➔ recognising and capitalising on ecosystem services as a key plank in maintaining and developing the "clean, green" image of "New Zealand, Inc."

Within this process, the following elements were identified in response to the challenges identified above:

- ➔ Awareness and education (of the public, landowners, and managers)
 - participation - in the context of tools, or with their assistance. Participatory scenario evaluation (in the form of a “game”) has been successful in various contexts around the world.
 - as an international example, in Chile, the forest industry has been working with stakeholders in monthly roundtables with tools, monitoring, and conversation about ecosystem services. In this process, the community drives priorities, and NGO participation has been essential for establishing legitimacy. The process has used FSC tools (see #4), and has led to external investment from other countries interested in developing this model.
 - the budget for communication activities will need to be significant; the communication strategy needs to be sophisticated and deep, not simply a social media approach.
- ➔ Developing a cost framework for ecosystem services to weigh the positive and negative outcomes, and trade-offs between them.
 - the framework for evaluating tradeoffs could (and should) occur in a participatory process – perhaps as a “game”? (see #1);
 - it will be difficult to navigate the risk of maintaining the social licence while assessing the implications of different scenarios. These risks must be kept in mind along the way.
- ➔ Who is going to pay?
 - while 1BT has its own budget, it probably not enough to achieve the objectives as we understand them.
 - the tree plantation industry may be willing to contribute, at a pilot level to start, as a way to gain understanding and build trust.
- ➔ Measuring and monitoring regimes
 - Tools could be drawn from those already developed by the FSC (see below). It will be necessary for a review process to assess what has already been done, and identify options reflecting the current state of the art;
 - The FSC FORCES tool for assessing and certifying ecosystem services currently only applies to natural forest, so would need to be developed for tree plantations;
 - measuring and monitoring impacts and outcomes is key to demonstrating value of forests for obtaining resource consent in New Zealand.
- ➔ Cultural values – addressing the historic bias that favours farming in New Zealand
 - primary industries have a common problem of maintaining their social licence and attracting new people to the industry. Some industries are already responding and making commitments with respect to ecosystem services (e.g. carbon). Business partnerships could be a way of sharing best practices, and encouraging ambition within and across sectors;

- an overall package of activities to deliver ecosystem services, executed as a coherent process, should provide necessary channels for recognising and addressing cultural values, however difficult that is.

6. Plenary outcomes – learnings for New Zealand and elsewhere

Participants spent part of the final dialogue session in small groups in which both New Zealand and international participants were represented. These groups reflected on the key learnings of the dialogue both for TPL in New Zealand and for TPL in international participants’ contexts, and focused primarily on the four thematic topics around which previous discussions were structured. Participants also identified a set of issues around dialogue processes.

These learnings are summarised in Box 3.

BOX 3. SUMMARY OF PLENARY REPORTING OF LEARNINGS FOR NEW ZEALAND AND ELSEWHERE	
LEARNINGS FOR NEW ZEALAND	LEARNINGS FOR ELSEWHERE
<p>TOPIC 1 – THE MĀORI MODEL OF FORESTRY</p> <p>Participants recognised that the characteristics and strengths of the Māori model of forestry could be communicated outside NZ, but that there was also work to do within NZ in sharing learnings from successful land and forest trusts with those that might currently be less successful. Sharing of learnings outside NZ could be facilitated by greater contact between Māori and Indigenous groups elsewhere, as was already happening in some cases. Participants suggested further development of and support for both Māori conservation areas and models of tree plantations in the landscape that were consistent with the Māori world view and aspirations; and noted that implementation of models that addressed the “quadruple bottom line” typically involved compromises such as those we had learned about on the field visits. They noted also that there remained room for improvement in both the situation and role of many Māori in relation to forestry.</p>	<p>Participants found much inspiration in the steps that New Zealand society and government have taken, with Māori people, to redress past wrongs.</p> <p>They felt that the Māori model of forestry offered a significant source of both inspiration and learning: for Indigenous groups elsewhere, and for other stakeholders such as government and industry about approaches to working with Indigenous peoples. Such inspiration and learning were about leadership and governance as well as cooperative and collaborative approaches to forestry as an economic and social development opportunity consistent with Indigenous aspirations and the principles of a landscape approach. They noted that cultural redress was an essential enabling factor for the Māori model of forestry they had observed, and that such redress provided the platform that enabled management consistent with Māori aspirations.</p> <p>Participants observed that the Māori model of forestry provided a strong social licence to operate, and an authenticity to the product and sustainability credentials of those enterprises. They suggested that the rich stories about Māori forestry should be used to advantage in product marketing.</p>

TOPIC 2 – ONE BILLION TREES AND CROSS-SECTORAL ISSUES

Participants noted the validation by international participants of the ambition of 1BT, and of NZ government commitment to the programme, in the international context of ambitious forest and landscape restoration goals. Participants also noted that greater cooperation between foresters & farmers might achieve better outcomes for both, and develop more resilient landscapes in which farmers derived greater benefits from both native forest restoration and exotic farm trees and plantations. Participants felt that a more integrated cross-sectoral approach was likely to benefit both agricultural and forestry sector goals.

Participants recognised that 1BT represents a long term government and societal commitment to forestry, building from foundations of a well-established forestry culture amongst both Māori and Pakeha, and of strong and well-organised forest industries.

LEARNINGS FOR NEW ZEALAND

LEARNINGS FOR ELSEWHERE

TOPIC 3 – SUSTAINABLE INTENSIFICATION

Participants appreciated the exploration of SI and of its complexity, and noted the ongoing challenges of defining sustainability in intensive production systems.

Participants felt that SI was more about 'how', rather than 'if', noting that the history of tree plantation forestry in New Zealand exemplified 'intensification' in the tree plantation sector. They also noted the economic imperative driving improvement of production systems and practices, the critical role of research in enabling SI, and the value of developing new products and enhanced services from SI. Whether SI would inherently advantage larger players, and the benefits it could deliver to Māori forestry, were also discussed; it was seen as important that SI benefitted all tree plantation stakeholders.

TOPIC 4 – TREE PLANTATIONS, CLIMATE CHANGE, AND ECOSYSTEM SERVICES

The key issue raised was that of encouragement to explore a more complete model of and mechanisms for ecosystem services, and to trial those in New Zealand landscapes in which different land uses were represented.

Participants suggested that schemes such as the NZ ETS would be most useful in other contexts when they also included other ecosystem services.

DIALOGUE PROCESSES

Participants identified, as amongst the benefits of this dialogue, the value in hearing stories from other realities, and of dialogue involving government and multiple stakeholders. In this context, they suggested there might be value in establishing a national multi-stakeholder platform that addressed forest(ry) issues.

Participants found the TFD dialogue process enabling, that it created a safe space to focus on key issues, and demonstrated the value of dialogue and networking. They noted that it was important to build trust through action, not just dialogue; and that acknowledgement of the legitimacy of past (negative) experiences was an important foundation for being able to move to constructive multi-stakeholder dialogue.

7. Synthesis and Reflections

Tree plantations are a significant element of many New Zealand landscapes, and are significant economic resources at local, regional and national scales. New Zealand's tree plantation sector is globally significant in a number of ways, from the research and development that underpin it to the scale of exports it generates. Understanding the role of, constraints to, and opportunities for tree plantations and value chains in New Zealand depend on appreciating the relevant historical, social, environmental and economic contexts. While these are unique to New Zealand, there are sufficient commonalities in each of these terms that the New Zealand case also informs considerations of tree plantations in landscapes elsewhere.

The New Zealand TPL field dialogue offered the opportunity for participants to recognise and reflect on a suite of factors that contributed to the success of New Zealand's tree plantations, as we observed and learned about them.

Amongst these, factors that were strongly evident were:

- highly productive and globally competitive commercial tree plantations, a consequence in part of a long history of research and development, which are generally assessed as sustainable by both global certification systems;
- community and political recognition of and support for Māori rights, aspirations and interests. This recognition provides a platform for empowerment and economic and social development consistent with Māori values, as we observed in both the tree plantation and energy sectors;
- recognition in the 1BT programme of the multiple values of trees and forests in landscape context, and an ambition to deliver these values at scale;
- initiatives that seek to capitalise on the ecosystem service values of planted trees, in climate change mitigation and mitigating nitrogen pollution;
- the platform that these elements provided for sustainable intensification, in the inclusive and positive sense in which that concept is now defined globally.

We also observed and learned about challenges associated with or to tree plantations and value chains in New Zealand:

- those of maintaining the comparative advantage of tree plantations in competitive land use and global market contexts;
- how, in the New Zealand case, sectoral performance and associated land use choices were distorted by the lack of a level playing field in terms of some ecosystem service impacts, notably carbon budgets, water quality, and biodiversity;
- the challenges for corporate businesses of developing and maintaining social licence, and reconciling plantation management compromises that may be necessary for this with commercial objectives;

- that recognition of Māori rights, aspirations and interests, whilst fundamentally important, does not necessarily overcome historical disadvantage or contemporary economic development hurdles;
- that there are significant governance challenges Māori iwi engaged in commercial forestry, and for sustainable intensification of tree plantations;
- that realizing the aspirations of 1BT will need strong partnerships with all relevant stakeholders, particularly those who are land owners and managers, and is likely to require more resources than currently allocated.

We offer the following reflections about each of the four dialogue themes.

The Māori approach to forestry

The focus of the field dialogue on Māori engagement with tree plantations in the landscape was particularly informative and important for international participants not only to appreciate the standing of Māori peoples in New Zealand, but also the basis and nature of their engagement with commercial forestry activities. For Māori and New Zealand participants, appreciation was gained for the international value of the Māori approach shared with the group. We recognise that many of the contextual and enabling conditions are specific to New Zealand, and that the dialogue was able to engage with only a particular sample of iwi and land trusts. Nevertheless, the importance of legal, institutional and societal standing of Māori, and of respect by Pakeha New Zealanders for Māori people and their values and interests, were evident; as was the importance of strong iwi leadership focused on the good of the whole community.

The One Billion Trees Programme

New Zealand's 1BT represents a national interpretation of the global ambition for forest and landscape restoration, such as that expressed in the Bonn Challenge. Strengths of the 1BT include its breadth and inclusivity, but those characteristics also present challenges such as establishing cross-sectoral and tenured partnerships and accessing appropriate planting material. Recognition of the potential role and contributions of tree plantations in the broader context of 1BT is appropriate, and suggests the programme could serve as an exemplar of locally-grounded, pragmatic approaches to delivering forest and landscape restoration goals.

Sustainable intensification

New Zealand's tree plantations, and the research and development programs underway to improve their productivity and value, are a global exemplar of good plantation practice. Discussion at the dialogue highlighted the evolving concept of 'sustainable intensification', as a process that delivers enhanced ecosystem services as well as improved productivity and economic value; this speaks to the links between SI and realising the full ecosystem services contributions of plantations. The basis and case for sustainable intensification in these terms were evident from field visits and consequent discussion, as were some of the challenges of realising these ambitions.

Realising the full ecosystem service contribution of tree plantations

New Zealand has a unique emissions profile amongst OECD countries, reflecting the significance of the agricultural structure to its economy, and tree plantations make a major positive contribution to the national carbon budget. This is recognised in the national Emissions Trading Scheme, but the different treatment of agriculture and forestry under the ETS means that land use decisions are distorted in terms of ecosystem service contributions, and so that tree plantations do not make as great a contribution at a landscape scale as they might. We also saw and discussed in the field other examples of ways in which tree plantations could contribute positively or adversely to ecosystem services. These examples illustrated the importance of the landscape context, and of the management, of tree plantations in realising their potential ecosystem service contributions. The importance of an adequate and enabling policy framework, to effectively operationalise the concept of ecosystem services, was evident from all these cases.



Dialogue Participants with Lake Taupō Forest Trust, Lake Rotoaira Forest Trust, and New Zealand Forest Managers in Houtōrangipo near Turangi

Conclusion

The New Zealand TPL Field Dialogue Background Paper noted that “the unique natural and cultural history of Aotearoa New Zealand, and its contemporary environment, economy and society, provide a similarly unique context for tree plantations.” The Field Dialogue illustrated this general point for each of the four dialogue themes, but also identified underlying principles and good practices that transcend specific national contexts. Initiatives such as TFD Field Dialogues and NGP Encounters can help communicate these principles and practices, and their interpretation, more widely.

For nearly a century in New Zealand, tree plantations have been a significant land use, an important contributor to the economy, and a means of delivering some environmental services. They are now important for Māori as well as non-Māori peoples, and could become more so as Māori ownership and enterprises develop further. The New Zealand forestry sector’s goals to double productivity and more than double export value, together with the New Zealand Government’s 1BT program, define ambitious goals for tree plantations and their value chains in Aotearoa New Zealand’s future. We hope that the New Zealand TPL Field Dialogue contributes towards the realisation of these ambitions in the environmentally- and socially-responsible terms explored by the Dialogue.

Endnotes

- ¹ <http://newgenerationplantations.org>
- ² In the IMPF2 Co-Chairs Summary, the term “forest plantations” was used in the headings of Boxes 1 & 2. This term has been changed to “tree plantations” to be consistent with the retitled TPL Dialogue. Use of the term “plantation forests” has been retained in the body of Box 1, as that text was negotiated at the Scoping Dialogue.
- ³ <http://theforestdialogue.org/publication/co-chairs-summary-scoping-dialogue-intensively-managed-planted-forests-2>
- ⁴ Background Paper available at: https://theforestdialogue.org/sites/default/files/2019_30janbackgroundpapernz.pdf
- ⁵ Presentations: <https://theforestdialogue.org/dialogue/field-dialogue-tree-plantations-landscape-new-zealand>
- ⁶ Participants: https://theforestdialogue.org/sites/default/files/tfd_tpl_nz_full_participants_list_no_contact_info.pdf
Agenda: https://theforestdialogue.org/sites/default/files/tpl_nz_agenda.pdf
- ⁷ Lake Taupō Forest Trust annex: https://theforestdialogue.org/sites/default/files/lake_taupo_forest_trust_background.pdf
- ⁸ See, eg, 1992 UNCED Statement of Forest Principles: <http://www.un.org/documents/ga/conf151/aconf15126-3annex3.htm>
- ⁹ eg Godfray, H.C.J. et al. 2010. Food security: the challenge of feeding 9 billion people. *Science*, 327(5967): 812–818; Garnett, T and Godfray, C. 2012. Sustainable intensification in agriculture. Navigating a course through competing food system priorities. Food Climate Research Network and the Oxford Martin Programme on the Future of Food, University of Oxford, UK. 54p. Garnett, T. et al. 2013. Sustainable Intensification in Agriculture: Premises and Policies. *Science* 341(6141): 33–34; Campbell, B.M. et al. 2014. Sustainable intensification: What is its role in climate smart agriculture? *Current Opinion in Environmental Sustainability* 8: 39–43; Titttonell, P, 2014. Ecological intensification of agriculture — sustainable by nature. *Current Opinion in Environmental Sustainability* 8: 53–61; Rockström, J. et al. 2016. Sustainable intensification of agriculture for human prosperity and global sustainability. *Ambio* 46(1): 4–17; Pretty, J. et al. 2018. Global assessment of agricultural system redesign for sustainable intensification. *Nature Sustainability* 1: 441 – 446.
- ¹⁰ See, eg, Drahos, P. (ed). 2017. *Regulatory theory*. ANU Press. <https://press.anu.edu.au/publications/regulatory-theory>
- ¹¹ See in this context, for example, Rockström et al 2016 and Pretty et al 2018, *ibid*.

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