

SKELLERUP HOLDINGS LTD is the parent of a large, New Zealand based, group of manufacturing companies largely involved in the fields of manufacture of natural and synthetic rubber products and plastic products and combinations of them.

Skellerup designs, manufactures and distributes engineered products. We are recognised for providing innovative solutions for customers in a range of critical and high-performance applications including dairy, potable and waste water, roofing, plumbing, sport and leisure, electrical, health and medical, automotive and mining.

We employ a diverse and highly skilled workforce of close to 900 people. Our ethos is to develop strong and deep relationships with key partners, in particular original equipment manufacturers (OEMs) and major distributors. Our customers see us as a key part of their R&D team and our branded products carry a strong and reliable reputation.

We are a global business with 80% of our revenue derived from international markets. We have manufacturing and distribution facilities and partners in New Zealand, Australia, China, Vietnam, UK, Italy and the USA.

Key to Skellerup's market penetration and strength is its ability to keep pace with new technology and embed it into innovative new business opportunities and so it has a strong vested interest in New Zealand's RSI system being strong, productive, and collaborative.

We believe that the Te Ara Paerangi, Future Pathways, process is very timely. New Zealand needs a more effective science system if it is to achieve its aspirations in terms of increased economic performance. It is important that the process delivers substantive good of all change, rather than just any tweaking to better suit any particular interest groups.

If we were to summarise what is the most important overall outcome, it would be that we shift our focus on the RSI system to one that celebrates immediate or near-term improvements in our exports, our employment, and the overall health and safety of the nation. We have a current system that is far too heavily biased to far horizon science with low probability of such successes.

RESEARCH PRIORITIES

It would seem difficult to determine scope and focus as a single scope and focus. We would see there being a need to think about Research Science and Innovation in terms of a number of sectors, each with its own determinates of what is "good" outcomes. Whilst it may not be an exhaustive list, we would see the list as including:

National Priorities in terms of risk mitigation and disaster response across areas like:- bio security, fire safety, seismic and volcanic events, major health risks and major safety risks. In this sector it would seem that the priority is achieving maximum affordable safety levels. This sector should be long term core funded through SSIF funding.

Core Primary Sector Research – across dairy, meat, wool, fishing, and viticulture. In this sector the objective should be maximising sustainable future economic impact of the sector. There should be some core funding for key longer-term deliverables to be completed by the CRI network. The balance should be funded by a contestable system where the key desired outcomes are defined, but collaborative science teams can pitch for being picked as the best available combination to achieve success in the desired timeline and budget.

Elaborate Transformation Industry Research – research that creates new “sticky” manufacturing opportunities for New Zealand, and research that enhances the market strength, sales, employment and profitability of existing New Zealand manufacturers, with the objective being to maximise New Zealand’s wealth and employment. This sector is difficult to cater for either with core funding, or the existing contestable Endeavour/Smart Ideas, style contestable funding. A revised contestable process where, again, the desired outcomes are identified, but it is up for science teams to pitch for involvement. Potentially this could be through an expanded Callaghan Project Grant scheme or through accredited existing collaborations like the Bio Processing Alliance and the N Z Product Accelerator.

Each of these focus areas needs an element of blue skies research and a mechanism for prioritising and funding it. Perhaps this could be way of pitches for funding from the Marsden Fund?

The Green Paper asks “what principles should guide a national research priority-setting process and how can the process best give effect to Te Tiriti? “

The start point is likely to be political settings for the balance between prosperity, welfare and racial harmony. The considerations of Te Tiriti should be a check list to ensure that all racial groups have equal opportunity and that any specific Waitangi Treaty commitments are honoured

It also asks “How should the strategy for each research priority be set and how do we operationalise them?”

Whilst, in our view, the Endeavour and Smart Ideas Funds have been ineffective mechanisms for delivering the science that New Zealand needs, much of this has been “creep” in the definition of “stretch” science. What started as a desire to see that what we did was not just rehashes of what we had done previously, has morphed to a definition of “good science” that virtually eliminates the science we need. By that we mean the science that builds on existing New Zealand expertise or market strength, or that creates new niche business in pre-recognised opportunity rich domains. So **our first priority should be to redefine the type of science we support and encourage.**

Whilst contestable science funds appear to offer a fairer platform for competing science teams to gain new opportunities to work and excel, this can be done, arguably better, by holding back some of previously contestable funding, and directing it towards known science gaps that have good commercial, or sociological, outcomes associated with them (as core institutional or collaboration funding). There could still be an element of contestability in determining that the best possible teams are assembled to address individual science targets.

As suggested above, there is probably not a “one model fits all” approach.

When it comes to social science that addresses risk (seismic, fire, bio security, pandemics etc), and social benefits there would appear, in the organisation, Science New Zealand, a ready made organisation to plan and prioritise desirable science working with Ministries on national priorities. This science would appear best core funded to allow an approach that saves CRI’s from directly competing, and that makes the most of their secular specialities. The major MBIE inputs being a national annual science budget allocation, and governance interaction.

There would then seem to be wisdom in developing two further science steering and governance organisations:- one for core primary industry science needs, and one for secondary (elaborate transformation) needs. With the National welfare priorities taken out as suggested above, and core

funded through the CRI's there is the opportunity to have each steering group allocate funding towards achieving desired, and prioritised, science outcomes.

The primary steering group should probably have senior Industry representatives across all primary Industries, plus CRI representatives from those CRI's in the primary space (however the representation could be channelled through Science New Zealand).

The secondary steering group could be an expansion of the New Zealand Product Accelerator (perhaps rolled up with the Bio Processing Alliance) as it would start with proven developed systems and governance. Governance and Management should be expanded to include successful NZ entrepreneurs and Frontier firm CEO's to make sure that the right opportunities are captured and prioritised. Perhaps this could be developed as an "**Innovation Council**"?

The key, in terms of the government's economic objectives, is to redefine what is "good" science. It cannot be science that challenges and stimulates scientists. The stakeholders for the New Zealand science system are the New Zealand tax payers and they must benefit from what is spent on science. There should be science agendas that unashamedly target known science needs for healthier, safer, and more prosperous life in New Zealand.

WORKFORCE

In conjunction with a rethink about New Zealand's Research, Science and innovation system, there needs to be a review of our education system and occupational training systems as these are not working in terms of providing the skilled work force that we need to apply the learnings from science and research. We have had a sustained period where there has been a desperate lack of skilled trades people, and this has been highlighted recently with Covid generated restrictions on travel and skilled migrant visas. Some trade training and some parts of the education system need to be prescriptive. Our literacy and numeracy levels have declined markedly in the past two decades and this has a serious impact not only on the quality of R & D achieved, but also on productivity. We need to get back to specialised central training of key trade skills. The idea of consolidating Industry Training Organisations to achieve economies of scale may have worked economically, but has had a very serious impact on number of trainees, and on the quality and appropriateness of training delivered.

RESEARCH INFRASTRUCTURE

New Zealand's Crown Research Agencies were developed as deep learning institutions in areas seen as of significant national importance. Their statements of core purpose should be reviewed to ensure that they reflect national priorities and are sensibly ambitious. Their research activities should then be limited to activity clearly within the umbrella of their core purposes, and activity not funded by commercial partners with vested interests in outcomes, should be core funded. The statements of core purpose should be examined for overlap, and overlaps eliminated. Where research activities require skill sets of more than one CRI there should be a lead agency clearly appointed.

The research infrastructure for each CRI should then be examined to eliminate infrastructure that has related in the past to non-core activity, with the intent of reducing the footprint of each CRI where that can be achieved. Where a CRI conducts the same research in more than one regional

centre, there should be thought given to removing the associated duplication of facilities. National standards should then be set as to how decisions on maintenance and expansion capital expenditure are made to ensure CRI's have consistently and sensibly modern infrastructure.

The passing on the Callaghan Innovation Act signalled a desire to catalyse and fund more innovative research projects likely to have substantive impact on the New Zealand economy. In many areas, particularly around student grant schemes, project grants, and incubation grants, this has been very successful. In this Te Ara Paerangi, Future Pathways, Review, there should be thought given to make Callaghan even more successful.

A greatly expanded project grant scheme would appear to be one of the best ways of reassigning some of the science spend that is allocated through contestable science schemes in a way that delivers much more effective economic impact. It could include 100% funded schemes where it is deemed that projects are of national importance, or are likely to be highly impactful, as long as the funding is used to support scientists in our institutions, and ideally where it is shown that the best possible science team has been assembled from across the country's institutions.