National Science Challenges

Centre for High-Value Nutrition

HIGH-VALUE NUTRITION

Ko Ngā Kai Whai Painga

National Roadshow

July 2015

John Smart - Challenge Director
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Host Institution

The University of Auckland New Zealand Te Whare Wānanga o Tāmaki Makaurau

University of Otago Te Whare Wānanga o Otāgo New Zealand

Massey University Te Kunenga ki Pūrehuroa University of New Zealand

agresearch

Plant & Food Research Rangahau Ahumāra Kai

Outline

- The National Science Challenges
- Context, overview and approach of High-Value Nutrition
- Science strategy and focus of High-Value Nutrition
- Request for proposals
- Q&A
- One-on-one sessions (PM)

> The National Science Challenges

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Foreword

The National Science Challenges

- Government initiative to focus public research investment on major New Zealand issues

- Cabinet has approved the formation of 11 NSCs

- Key characteristics
  - Mission-led
  - Nationally collaborative / Multidisciplinary / Best “team”
  - Stakeholder engaged (including Māori)
  - Transformational
  - “Additionality” / “Not business as usual”

> Context, overview and approach

The government's expectations

- Objective from the Gazette notice:

  To develop high-value foods with validated health benefits to drive economic growth.

The government's expectations

- MBIE Requirements (RfP)
  - Establishment of a virtual centre to become an authoritative voice on food for health claims.
  - Output must meet the requirements of the New Zealand regulatory regime for food health claims - FSANZ Standard 1.2.7 (Nutrition, Health & Related Claims).
  - 10 year research and business plan.

High-Value Nutrition – The vision

Growing New Zealand food and beverage export revenue through international leadership in the science of food and health relationships

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High-Value Nutrition – The mission

Develop high-value foods with validated health benefits to drive economic growth through research excellence in the following research themes:

- Clinical application;
- Biomarkers;
- Meeting consumer preferences;
- Food science and technology.

The aim is to increase the value of New Zealand food exports by improving the value proposition to consumers through a health claim on the food leading to increased premiums and/or increased sales volume.

High-Value Nutrition – Context

Alan Bollard says country misses vital returns by just upping primary production

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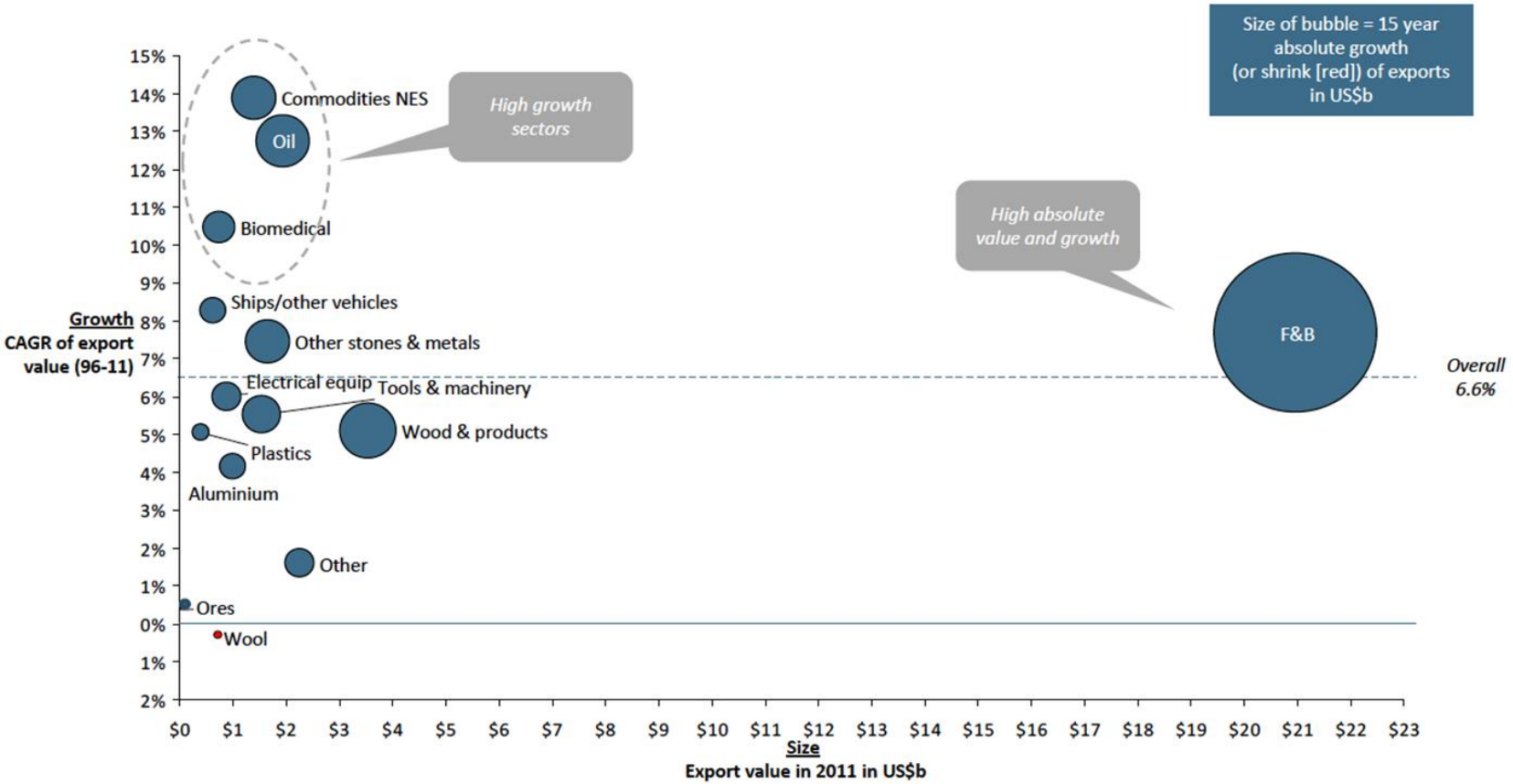
NZ Herald

High-Value Nutrition – Context

> A strong base to build off



Export value of key products in 2011 vs. 15 years CAGR of export value vs. 15 years absolute growth in export (US$b; FOB; nominal; 1996v2011)
Total value US$ 37b NZ$46b

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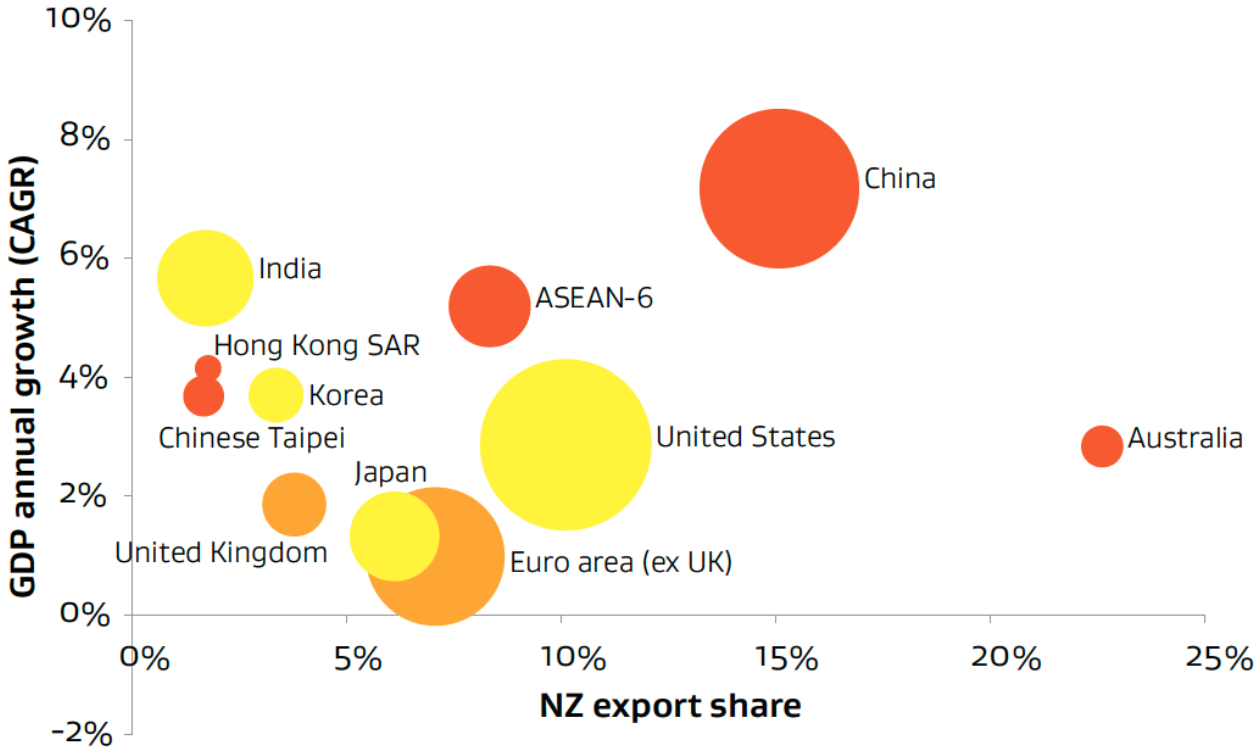
High-Value Nutrition – Context

> A changing export focus

Growth prospects of New Zealand's trading partners – 2013 to 2017
Source: IMF World Economic Outlook, Statistics New Zealand



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The Business Growth Agenda: Future Direction 2014. ISBN 978-0-478-43311-1 Online

> Leveraging off NZ's competitive and comparative advantages and positioning NZ Inc as leader in validation of food health claims or benefits

High-Value Nutrition – The target

> $1B p.a. additional F&B export revenues from funded, aligned and related research by CY2025.

> Support the creation of a horizontal sector of high-value health foods

High-Value Nutrition – The target

> Implications of the $1b p.a. target:

- Will require substantive businesses to be able to support the downstream investment and scale

- Returning value to New Zealand is critical
  - Will need to establish a proprietary position at point of sale
  - Food ingredients will struggle to capture value
  - Generic food category support will need an NZ Inc. angle
  - MNCs OK if the benefits come back to NZ

Approach to the challenge

- Investor
  - Have $30m to invest in research by 2019 and a further $53m after that to 2024
- Coordinator/Facilitator
  - Align research activities, capabilities and networks nationally to support F&B businesses
- Influencer
  - Lead the national agenda and bring others along
- Industry Engagement
  - Business Services/expert advice – national point of contact

Approach to the challenge

> Building towards the target

- Consumer insights
- Biomarkers
- F&B business engagement
- Product and market development
- Evidence of consumer health benefits
- Design of food for health

Vision Mātauranga

> Two foci re Vision Mātauranga policy

- Economic innovation (including indigenous innovation where relevant)
- Māori researcher capacity building relevant to HVN

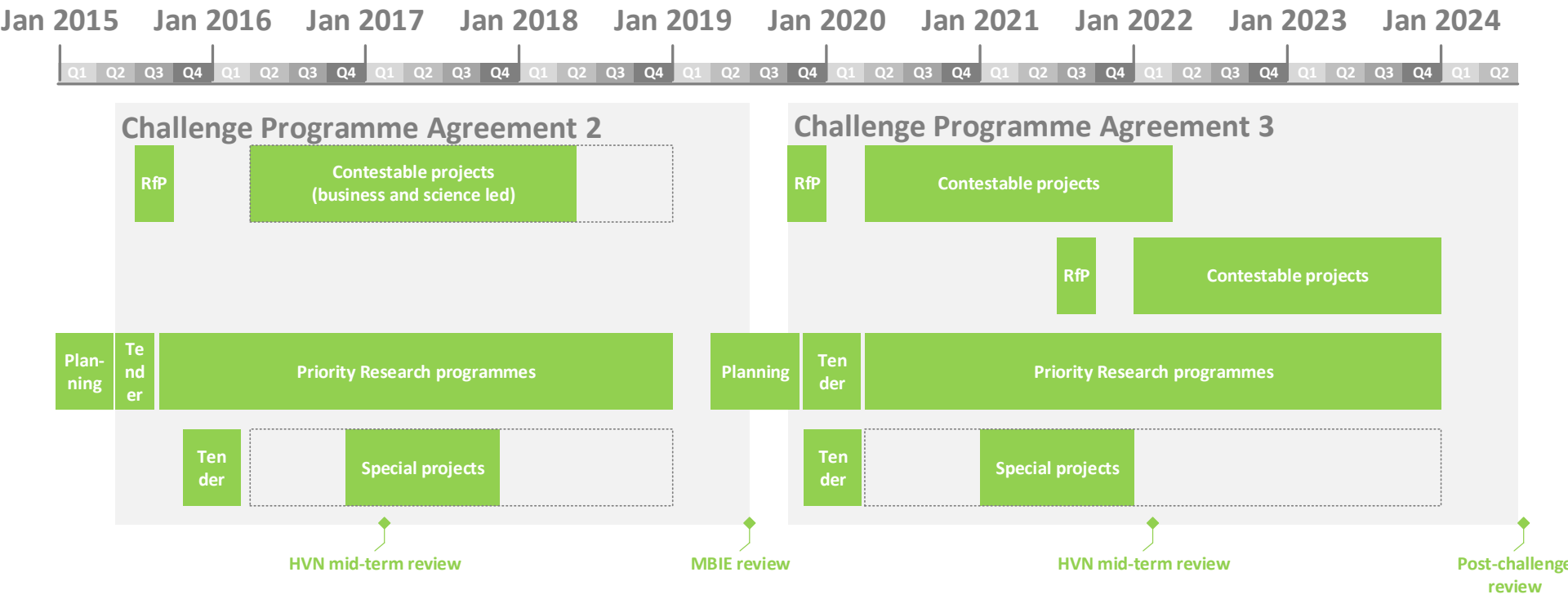
> Innovative Māori-owned F&B businesses

- Involve in research programmes alongside other F&B businesses
- Specific focus on cohort of innovative Māori businesses to explore opportunities relating to Māori ownership and distinctiveness

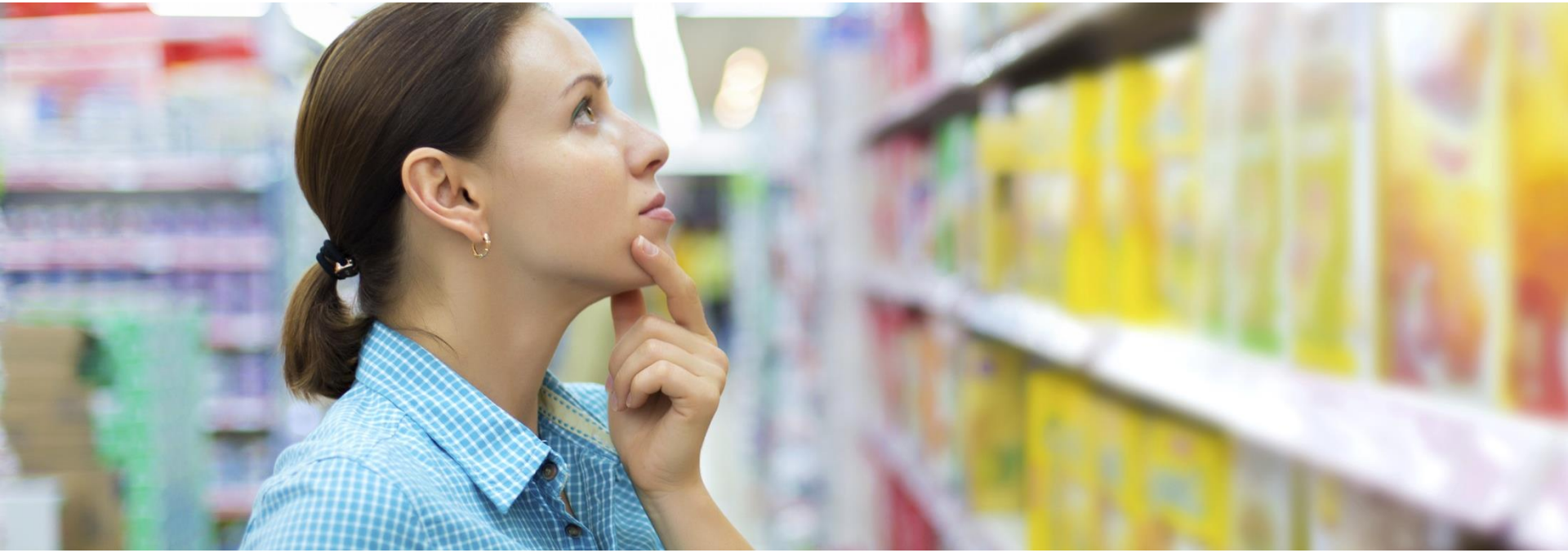
> Māori embedded in governance and leadership of Challenge

Approach to the challenge

> At the beginning of a 10 year journey

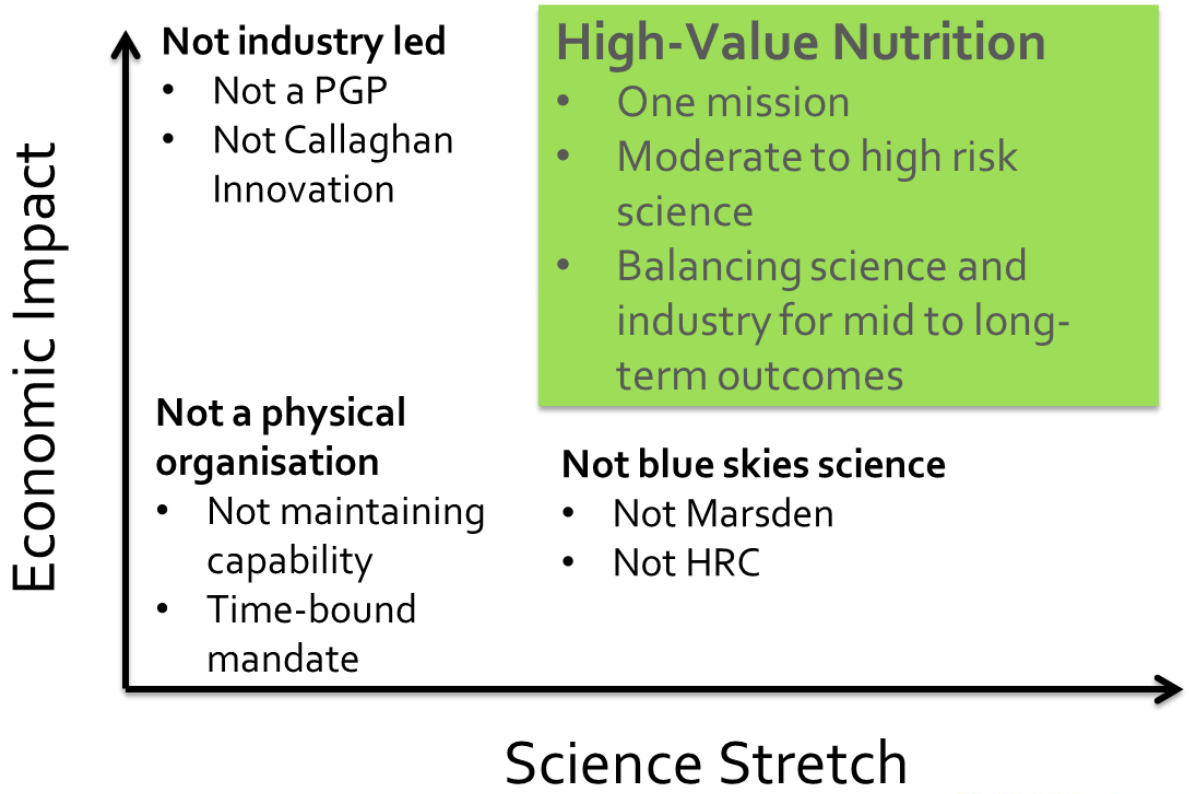


> Science strategy and focus



Positioning of the research

> A different way to invest in science, complementary to current investments



Research Plan

> Priority Research Programmes

Precompetitive research to build the science base and capability for future opportunities across multiple businesses (2015/2019)
Will focus more on human studies and product options to validate health benefits in 2019/2024

> Contestable Projects

Shorter term projects with a defined end point which leads to business investment in the next innovative step
First round this year (two further rounds in the 2019/24 period)

> Special Projects/Contingency

Things that need doing to advance the Challenge

Science Leadership Team

Dr Nicole Roy - Biomarkers

Dr Lisa te Morenga - Clinical application

Professor Sally Poppitt – Biomarkers / Clinical application

Professor Marlena Kruger – Biomarkers / Clinical application

Professor Harjinder Singh – Food science

Dr Roger Harker – Consumer science

Dr Lisa Houghton – Clinical application

Dr Roger Hurst - Biomarkers / Clinical application

Expert panels – 25 scientists including:

- 7 with clinical application expertise
- 12 with biomarkers expertise
- 4 with consumer science expertise
- 7 with food science expertise

Developing Priority Research Programmes

- Science Leadership Team
  - Expert Group development
- Industry Forum and Industry Advisory Panel
- Assessment against criteria (independent facilitator)
- Recommendations to HVN Board for inclusion in Research Plan
- Submission to MBIE for assessment by international panel
- Decision by government Science Board
- Investments approved by HVN Board

Priority Research Programmes and Projects currently being finalised

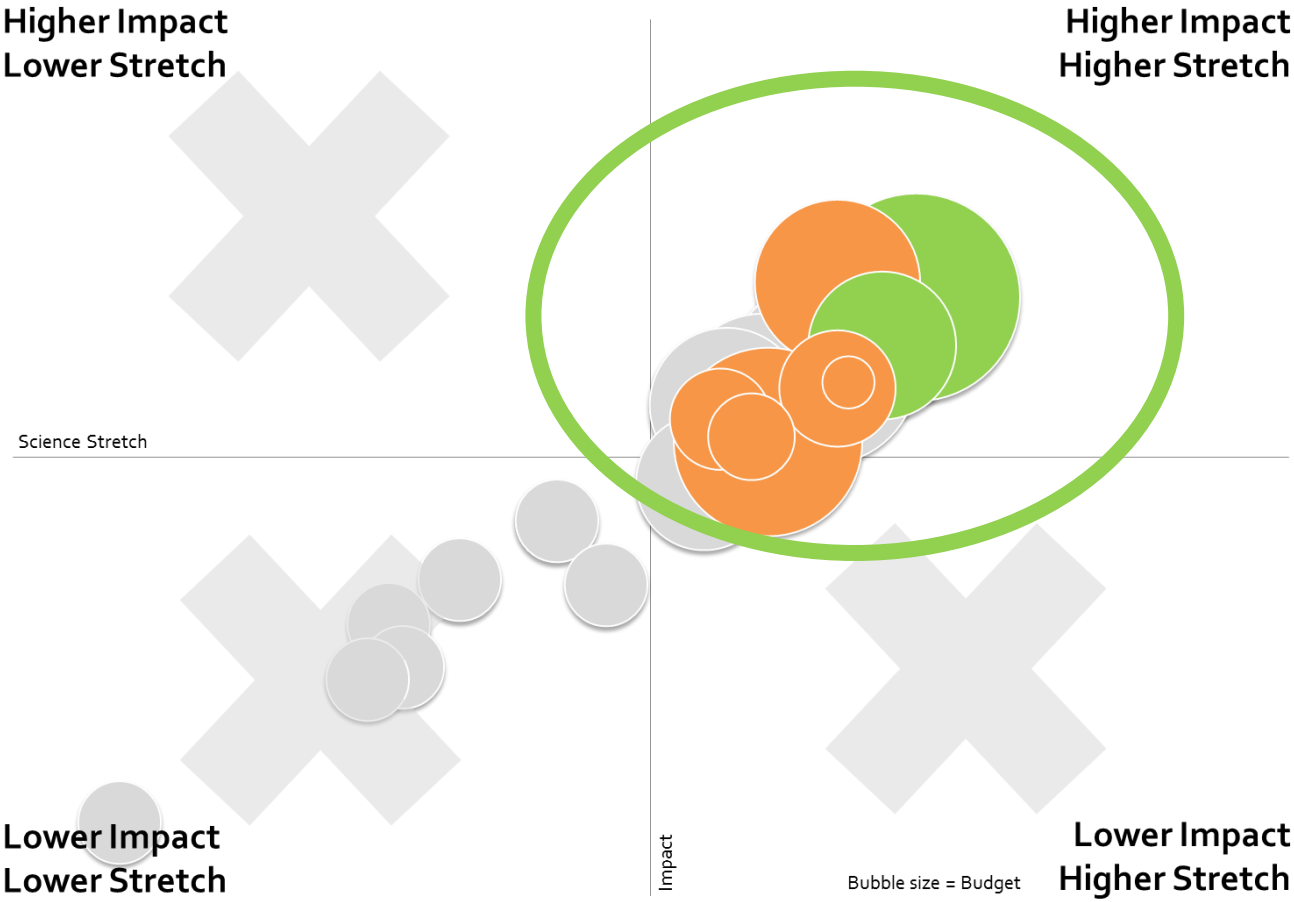
> Initiate by October
  - Establishing industry engagement
  - Linking to HVN KPIs

> Will review in 2017 and again in 2019
  - Consider options for 2019 to 2024

> Will also revisit overall HVN strategy and research plan in 2019
  - May open up new opportunities

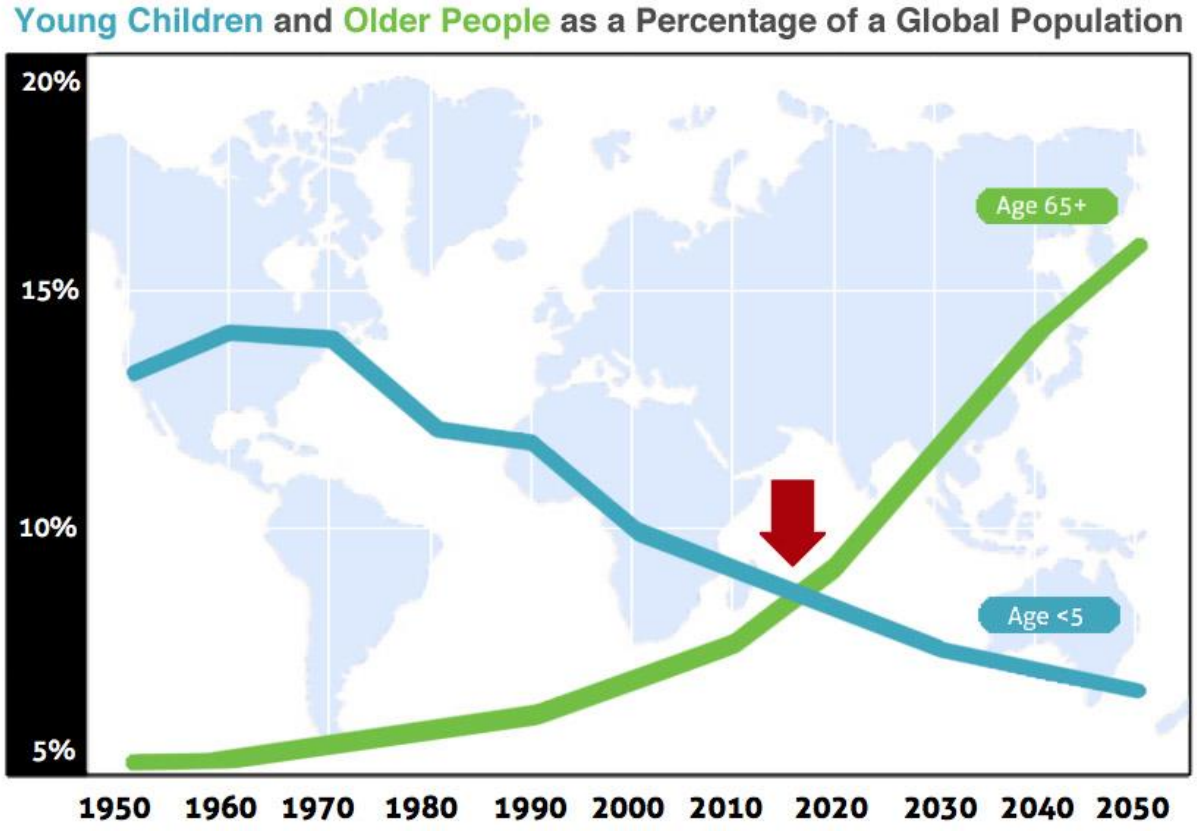
Assessment and selection

> A robust process



Defining the focus

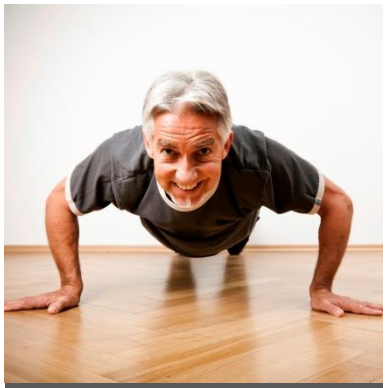
> Changing demographics, changing demands, export lead



High-Value Nutrition – Health Targets

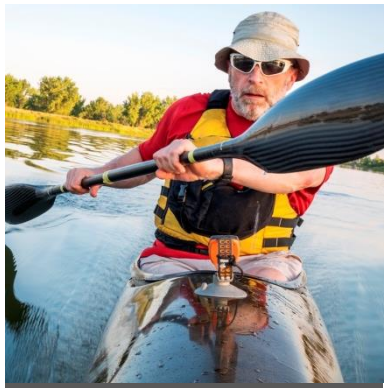
> 4 long-term opportunities being pursued
> HVN Priority Research Programmes for 2015 to 2019

Weaning foods for health



Gastrointestinal Health

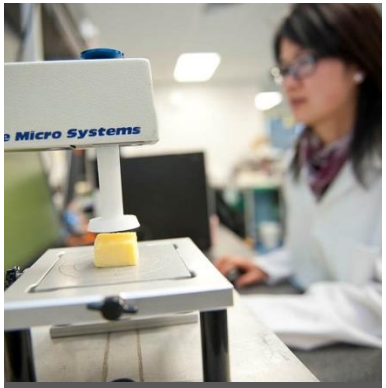
Immune health



Metabolic Health

High-Value Nutrition – Supporting Research

Consumer Science



Food Science

High-Value Nutrition – Weaning Foods for Health

> Have yet to confirm approach in this area

> Will hold mini symposia or workshop in November to revisit HVN positioning in weaning foods (or the broader maternal/child health opportunity)

Weaning foods for health

Regulatory framework

- Sets the standard for science evidence and validation of health claims
- Assumes that regulation of food health claims will get stronger (no soft claims)

FOOD STANDARDS
Australia New Zealand
Te Mana Kounga Kai – Ahitereiria me Aotearoa

Standard 1.2.7 – Nutrition, Health and Related Claims

The Board of Food Standards Australia New Zealand gives notice of the making of this Standard under section 92 of the *Food Standards Australia New Zealand Act 1991*. The Standard commences on 18 January 2013.

Dated 7 January 2013

Standards Management Officer
Delegate of the Board of Food Standards Australia New Zealand

Evidence based

> Consumer awareness and motivation

- Underlying health issue / awareness of symptoms / belief that foods can help
- Motivated to pay more for a food based solution

> Cause and effect relationship

- Define nutrition responsive measures of health and wellbeing (biomarkers)
- Mechanism of action
- Clinical validation of beneficial effect in target consumer demographic

> Deliver benefits through foods

- Enhance / maintain beneficial effect in food matrix and delivery to the consumer at point of sale

This means that the FOCUS is

1. On **health targets** most likely to provide strong health food development options
2. On markets and meeting **consumer needs**
3. On meeting **regulatory** standards.
4. Building on **prioritised** strengths and unique opportunities

- For NZ economic growth.

> Request for Proposals

HVN call for proposals

Timeline > Call open until August 31st noon

Scale > $7m to be invested in projects up to $1m for up to 3 years

Focus > Two pools: Business-led Innovation and Science-led Innovation
Both with Maori subcalls

Applicant > Must be submitted by a research organisation

RfP's focus

Seeking research proposals supporting potential added value food and beverage export revenues to New Zealand based on scientifically validated food health benefits that consumers want and need (ie consumer driven not product driven), via research on:

- **Clinical application** (demonstration of a health or wellbeing benefit from a food consumed by humans);
- **Biomarkers** (defining the biomedical mechanisms and indicators for the food health relationship);
- Meeting **consumer preferences** for and motivations to purchase healthy foods;
- **Food science** and technology (ensuring the foods deliver the health benefit to consumers).

Points of Clarification

> **“added-value food and beverage export revenues to New Zealand”**

- NZ origin products, potential to make useful contribution to the $1B pa target by 2025
- How this can be achieved is up to you
  - Most likely a branded consumer product
  - But could be an ingredient or…?
- Business ownership less important than how the value created at the point of sale is returned to New Zealand

Points of Clarification

> **“scientifically validated food health benefits”**

- Must ultimately meet the expectations of the regulators
    - Establish cause and effect relationship
    - Mechanism of action
    - Demonstrate clinical significance

Points of Clarification

> **“that consumers want and need”**

- Must be able to describe the target consumers and their health and wellbeing need
  - Demographics, health stats etc.
- But is it what they want?
  - Consumer insights of how they perceive the need and how they experience a nutritional solution
  - Evidence of what will motivate them to purchase a solution

Points of Clarification

> **“consumer-driven not product-driven”**

- The research must come from the market and meeting the consumer needs and wants
  - Design the solution from that understanding
- Avoid product-push approach
  - i.e. have product, find a compound in it, demonstrate it does something physiologically interesting then look for a market and consumer to sell it to

Priority Health Targets

Proposals are expected to address an opportunity within one of these broad health targets:

- Metabolic health (including obesity, diabetes and heart diseases);
- Gut and immune health;
- Foods for improved physical activity and mobility;
- Weaning foods for health;

Points of Clarification

> **“within one of these broad health targets”**

- All projects must be focussed to address a consumer need linked to these major health food trends
- Stand alone generic projects on food science or clinical validation or consumer insights or biomarkers will not be acceptable

Points of Clarification

> **“Weaning foods for health”**

- Have left this area very open
  - Post infant formula and not general foods for adults
- Any health and wellbeing benefit
  - Growth and development
  - Immune function
  - Brain development / mental function
  - …?
- As long as it is what their mums want

Opportunities for Collaboration

A central policy intent of the National Science Challenges is that they should be collaborative in nature

- To address issues that can't be readily addressed by narrowly defined and executed research
- Projects that integrate across the clinical, biomarker, consumer and food science themes will score strongly
- Stand alone projects won't

This extends to international collaborations

Eligibility

Must be primarily focussed on a food or beverage export product(s)

- but need not be exclusive

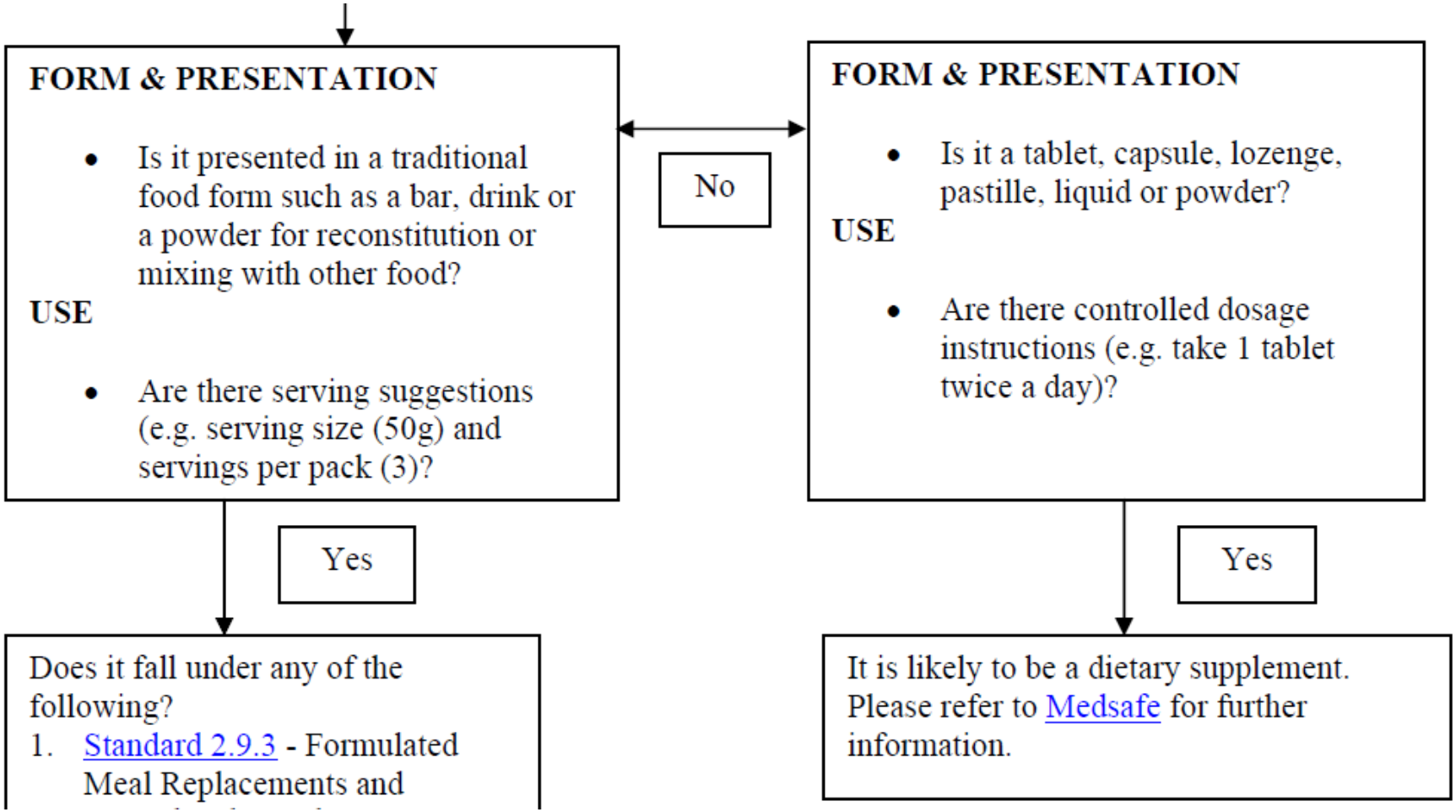
Should not be focussed on a therapeutic effect or be aiming to cure disease

- If you have something to do that then it's not a food

Long list of eligibility criteria

- Check if you are not sure

Is it a supplement?



Business-led Innovation

> Must be the business that is driving the proposal
  - Include evidence of senior sign-off in text
  - And the $100K cash commitment

> Must still meet all the criteria

> Must be a clear commercial arrangement re IP and a sound business case to take the concept forward if successful

Science-led Innovation

> Must be innovative in nature but still aiming to contribute to the $1B export revenue by 2025

- Can’t be blue sky

> Should involve an emerging researcher to build new capability for HVN

- With strong mentorship

> Must meet all the criteria and demonstrate a future path to market

Māori Subcalls

> Giving effect to the HVN approach to Vision Mātauranga policy

- Supporting innovation in Māori-owned F&B businesses
- Supporting the development of Māori researchers to build capacity for Māori business innovation

> Will hold back funds if we don't receive quality proposals in this space

- And try again

Application Process

> Template driven
  - Looking for substance and evidence not assertions
  - Some high hurdles
  - Include everything in the template and ensure it is signed off
  - No letters of endorsement

Application Process

> Must be submitted via an NZ research organisation
  - Not an individual
  - Not a business
  - Not an international business or corporation

> But all of these may be involved within the proposal
  - Work with your Research Office or equivalent

Assessment Process

> Based on the criteria
  - Ensure you use the right table for the two subcalls
  - Address all criteria – lack of information leads to a low score
  - Only need to address the VM criteria where relevant

> Eligibility screen
  - Will be rigorous – ensure your proposal is eligible

Supporting elements

> Methodology
  - For international peer review

> Business Case
  - For the industry reviewers

> Intellectual Property Plan
  - Must support achievement of the HVN mission and KPIs (i.e. F&B export revenue)

Assessment Process

> Value for Money
  - Not assessed but a consideration
  - Fully-costed budget (not seeking any cross subsidisation)
  - Ways to make the HVN $ go further can include
    - Aligned research to expand deliverables
    - Industry cash co-funding
    - Industry in kind support

Assessment Process

> Scoring

- By the Assessment Panel
- All other reviews are inputs to the Panel
- All criteria equally weighted within each dimension – need to score well against all
- Panel (via the Chair) will make recommendations to the HVN Directors
- Who will make recommendations to the HVN Board for decision

Assessment Process

> Multiple reviewers
  - Peer Reviewers
    - Self nominated and independent
    - No minimum required (will do the best we can but will proceed regardless)
  - Industry Advisory Panel
    - Selected review of the industry aspects
  - International Science Advisory Panel
    - Selected review of the science

Assessment Process

> HVN Assessment Panel
  - Chair Dr. Robin Olds (independent advisor)
  - Deputy Chair Dr. Kevin Marshall (IAP Chair)
  - Science Experts in
    - Clinical science
    - Biomedical science
    - Consumer science
    - Food science and technology
    - Vision Mātauranga
  - May co-opt others

Conflicts of Interest

> Will publish names of Assessment Panel members on web site before 31 August

> Proposals may also be viewed by the
- HVN Board
- HVN Industry Advisory Panel
- HVN Science Advisory Panel
- HVN Management staff

> Up to you to note conflicts

Submission

> Must be submitted as completed PDF template by email to hvn@auckland.ac.nz by noon on 31 August

- By your institutional office
- Signed by an authorised officer

> Also submit a PDF of collated CVs for all named researchers or key individuals using the MBIE format

Call for proposals – Q&A

> Any questions?

Thank you

> One-on-one sessions starting at 2pm

> Will publish this presentation and any clarifications to the RfP next week

National SCIENCE Challenges

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