

International Barley Hub (IBH)





What is it?

- A national and international centre of excellence in barley research and development
- A unique platform for the translation of research into commercial benefits for the entire barley value chain
- An internationally recognised centre for knowledge transfer, training and skills development
- A Hub to integrate research partners, industry and stakeholders

www.barleyhub.org

www.facebook.com/barleyplanet/

<https://twitter.com/Barleyplanet>

Why Barley?

Why Dundee, Tayside, Scotland?



- Scotland's largest and UK's second largest crop
- 20% produced in Tayside
- World's fourth largest cereal crop
- £20Bn whisky and brewing industries
- City of Discovery (life sciences employ ~16% of total population)
- CLS ranked best in the UK and top outside the USA for Biological Sciences in the QS World University Rankings,
- JHI – Already an International centre for crop and environmental research





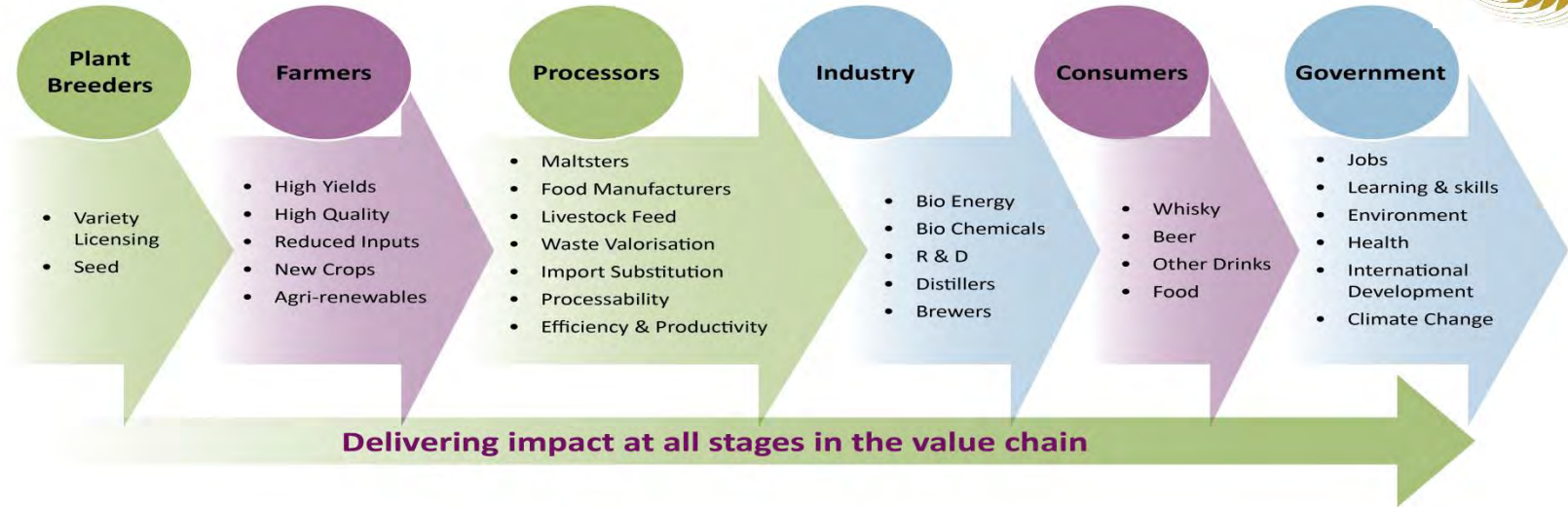
Development of the IBH Concept

- Emerged from JHI **science working group and capital investment** strategy
- Based on exploiting current areas of expertise and new opportunities emerging from ***world class agricultural bioscience***.
- Involved wide consultation with a broad range of ***stakeholders***
- Established that a key driver was the need to deliver **‘impact’ beyond scientific papers** and breeder interactions.
- Recognised a need to **extend current areas of expertise** beyond farm gate to end users
- Desire to **proactively engage the commercial sector**
- Built around 4 integrated strategies – Scientific, International, Business, Education – clustered around the ***translational pipeline***

Our Stakeholders



The Translational Pipeline



To better provide outcomes that make a difference along the supply chain we need to re-focus on the requirements of the end-users of our research



Key Objectives

To:

- Increase the economic impact of plant research and innovation
- Improve the skills, knowledge and integration of the research and innovation community
- Promote economic development
- Support the successful food, drink and biotech sector

www.barleyhub.org

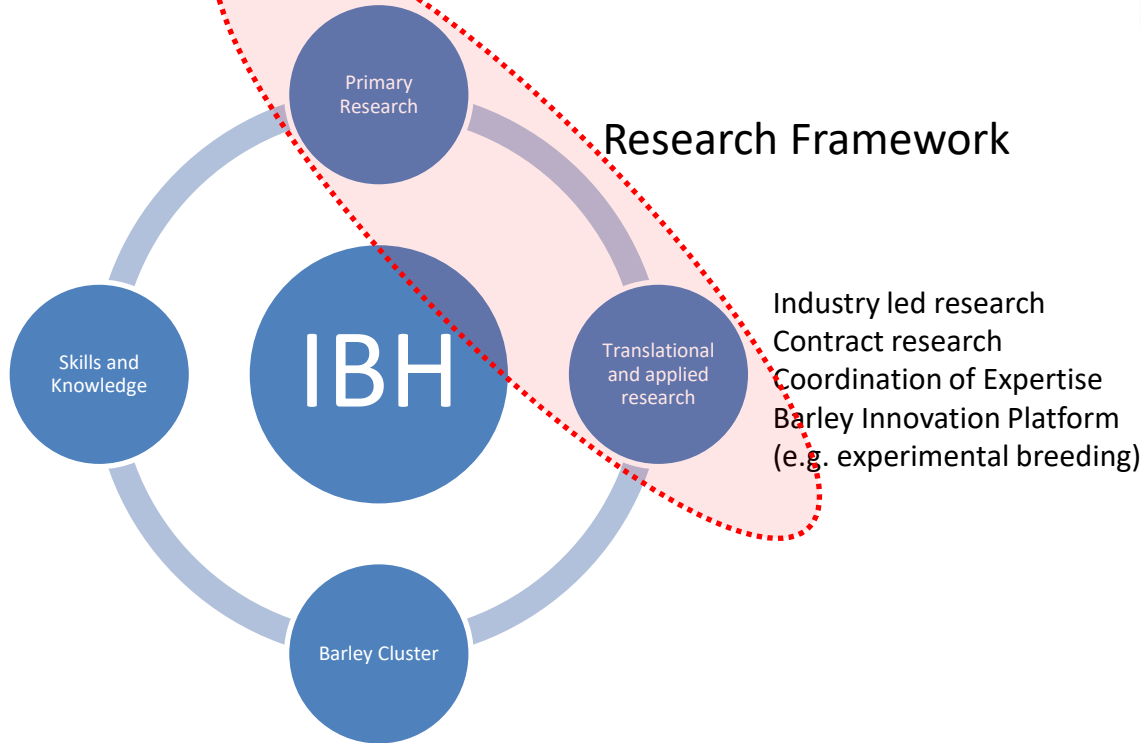
www.facebook.com/barleyplanet/

<https://twitter.com/Barleyplanet>

Structure and Activities



Researcher led, RC funded
Leading primary research & resource development
State of the art facilities and equipment
Globally collaborative research programs



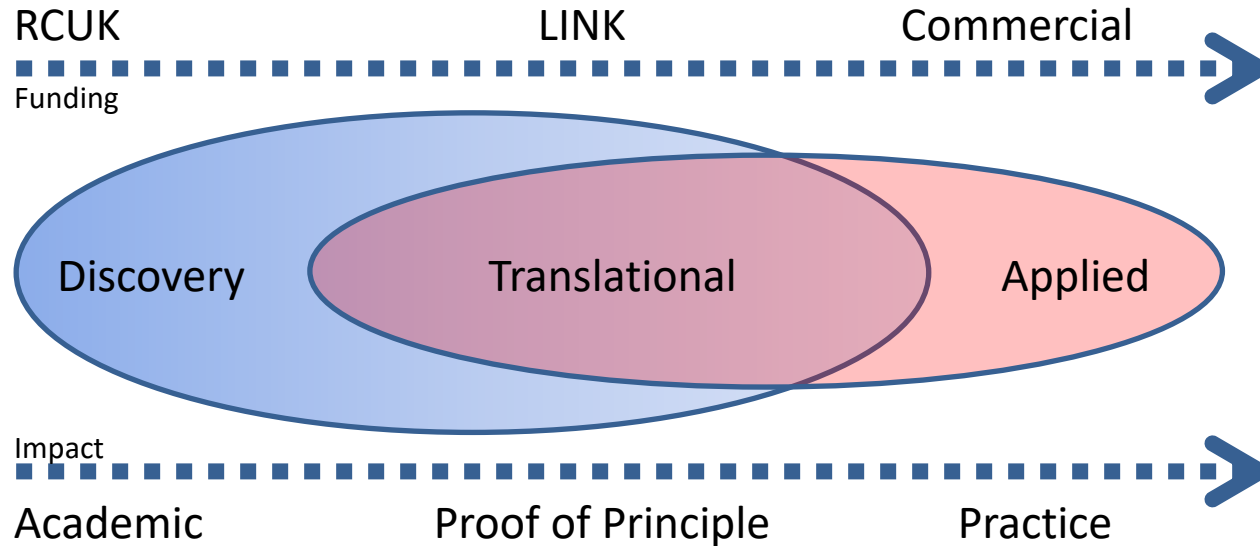
Research Framework

Chair of barley research
Developing future talent
Industry skills program
International exchange
Demonstration platforms
Seminars and conferences

Industry led research
Contract research
Coordination of Expertise
Barley Innovation Platform
(e.g. experimental breeding)

Industry networking, Incubation desk/bench space
Industry support programme, Open innovation,
Commercial accelerator, Internationalisation & inward investment

Research Framework



www.barleyhub.org

www.facebook.com/barleyplanet/

<https://twitter.com/Barleyplanet>



Research framework embraces four broad themes:

- Reducing the cost of production (including inputs) while maintaining premium quality
- Integrating resilience to climatic variation and disease pressures
- Reducing the carbon footprint of the entire supply chain - minimising waste and recycling nutrients
- Maintaining, improving or developing new processing characteristics for traditional and emerging sectors (e.g. industrial biotech)



To meet the challenges in these four research themes IBH will

- Maintain/extend internationally competitive capability in ***agricultural research*** and ***underpinning world class bioscience/informatics***
- Harness and integrate key areas of research excellence across the ***translational pipeline***
- Invest in ***people and skills*** increasing headcount to >100 (from ~60)
- A new ***whole cycle approach***

www.barleyhub.org

www.facebook.com/barleyplanet/

<https://twitter.com/Barleyplanet>



IBH will look forward, developing or leading:

- An information portal with fingertip access to state of the art information, resources and information
- Expertly curated and diverse natural and constructed genetic resources.
- Efficient and reliable traditional and transgenic gene editing facilities
- Capabilities in multi-scale modelling
- Data/information handling, including capabilities for storage, analysis, and presentation of increasingly complex data
- A new generation of researchers

www.barleyhub.org

www.facebook.com/barleyplanet/

<https://twitter.com/Barleyplanet>

How will this be achieved?

Infrastructure

A new £40M 5,000m² two storey building which will house the Hub's research staff and all necessary equipment/pilot plant.

Pump priming investment in Capital Equipment (laboratory and pilot) in excess of £5m



'Soft Start'

Identifying projects and funding streams we can progress to deliver impact quickly

Implementing an appropriate lean governance structure

Pursuing capital funding for facilities & equipment and raising the profile of IBH

Developing partnership arrangements with other research organisations

IBH Soft Start



Colin West has been appointed **Chair** of the IBH for an anticipated 18 month period

Colin joined the brewing industry after graduating in biochemistry from St Johns College, Cambridge. He worked at the two Ind Coope breweries in Burton on Trent and Romford, qualifying as a Master Brewer with the IBD

He worked for Albrew Maltsters (latterly Carlsberg UK) before joining Muntons plc to continue making malt as well as producing food ingredients from malted cereals. He was chair of the Malting Barley Committee, dedicated to ensuring the development of new and improved varieties of barley for the brewing and distilling industries.

Colin has been active in training throughout the malting and brewing industries, and acted as examiner for the Master Brewer and Master Maltster exams.

He has been Executive Director of the Maltsters' Association of Great Britain, co-ordinating the interests of the UK malting industry with stakeholders and government in Britain and Brussels for the last 10 years.

www.barleyhub.org

www.facebook.com/barleyplanet/

<https://twitter.com/Barleyplanet>

Business of the year



The James Hutton Institute on winning the ***Perthshire Business of The Year Award*** at the Perth & Kinross Chamber of Commerce Annual Event. This was awarded in recognition of the drive and leadership the Institute has shown and continues to show in relation to the Tay Cities Deal project, which centres around the ***International Barley Hub development***, Advanced Plant Growth Facility and UK-TASC proposals.



www.barleyhub.org

www.facebook.com/barleyplanet/

<https://twitter.com/Barleyplanet>



The James
Hutton
Institute



Unlocking Barley's Potential



What will the IBH do for you?

- Address community wide technical challenges and exploit opportunities (e.g. genome editing services)
- Train staff and increase the pool of appropriately skilled staff (e.g. by running international training programmes)
- Help secure funding for trans-national collaborative research (e.g. ERA-CAPS)
- Provide community resources for use in your labs (e.g. SNP platforms)
- Facilitate collaboration within the cluster to identify real problems and opportunities for how they can be solved (e.g. extended collaborations and workshops)

Robbie.waugh@Hutton.ac.uk

www.barleyhub.org

www.facebook.com/barleyplanet/

<https://twitter.com/Barleyplanet>