



PRIORITY AREA H
FOOD FOR HEALTH ACTION PLAN
JULY 2013

Food for Health (Priority Area H)

Context

Food for Health products or functional foods are foods or ingredients that provide health benefits in addition to providing basic nutrition. They are developed through identification, characterisation and evaluation of the health promoting properties of food. New high-value nutrition and wellness products, produced by re-formulation of existing products or through development of new functional foods, are an exciting new opportunity for Ireland's food sector. The discovery of new bioactive components from natural resources, functional ingredients and nutraceuticals is the key to the development of foods for health. There is a requirement for robust scientific research to underpin health claims, therefore access to a functional clinical and translational research system is essential to trial new products with added health and wellness benefit thus enabling a full understanding of the contribution of such products in promoting wellness and addressing the grand societal challenge of increasing levels of diet related chronic diseases such as obesity and Type II diabetes. Also, the identification and understanding of individual and population differences in gene expression in response to diet and dietary components, through population health research, will lead to food products customised for an individual's nutritional needs.

The increasing world population, the changing demographics of that population (particularly the increase in the ageing population), the increase in diet related chronic diseases and the demand for health and wellness food products across the lifecourse from childhood to old age are key drivers for growth of the agri-food industry. Additional drivers are technology innovation and technology convergence. A societal benefit of food for health related research is that it can support improved public awareness of the relationship between food and health. Consumers are willing to pay a premium price for food products with credible claims for health benefit. Both scientific and social marketing research will inform dietary habits and help advance national health goals by reducing public spending on chronic diseases with a dietary link (e.g. Type II diabetes and CVD). It will also inform policy-makers, health practitioners, and the food industry.

The global market for nutraceuticals was reported to be \$117.3 billion in 2007 and is expected to reach \$176.7 billion in 2013 (CAGR 7.4 per cent). The main areas of focus are dairy products, soft drinks, baby food, fruits and cereals with applications directed at improving digestive health, weight control, and bone and brain health. Demand for functional foods drives demand for bioactive ingredients with clinically validated health benefits. The ingredients sector, rather than the consumer foods sector, is mainly responsible for innovative functional food products. Food and beverage conglomerates are reshaping to reflect the demand trends for functional foods e.g. companies with an agrifood business (e.g. Nestle) are moving to an R&D-driven nutrition, health and wellness business. In turn, major pharma companies are looking towards the functional foods sector (e.g. Abbott).

The agri-food industry is the largest indigenous industry in Ireland and accounts for 8 per cent of GDP and employs 150,000 people, which is over 7 per cent of national employment. The food processing sector employs 45,800. It sources 71 per cent of its raw materials in Ireland, compared to 41

per cent for total manufacturing industry. Ireland has a dynamic dairy and food ingredients sectors and these companies are very aware of functional food opportunities. Current Irish manufacturing capability in functional foods is mainly linked to dairy companies (e.g. Glanbia) and SMEs in the ingredients and beverages supply side. Ireland accounts for approximately 15 per cent of the world market in infant formula production.

‘Food Harvest 2020’ a strategy developed in collaboration with the food industry in 2010, sets out clear and achievable export targets for the sector. The report also emphasises the importance of research and innovation as a prerequisite to achieving the growth targets for the Agri-food sector. In November 2011, DAFM launched the National Food Research and Innovation Plan (*Food Research Ireland*), based on a robust stakeholder consultation, which defines six key research areas, of which one is Food and Health. While the Government’s Integrated Marine Plan (*Harnessing Our Ocean Wealth*) advocates research that seeks to support the targeting of the lucrative global market for functional foods and ingredients derived from marine sources (fish, shellfish and seaweed).

Research in this general field is underpinned by a wide range of skills in nutrition/dietetics, microbiology (where probiotics are involved; gut health), human and agricultural genetics and clinical medicine related to the particular area of intended health impact. A major focus of Irish research activity in the food for health area is in nutrition, probiotics and generation of novel bioactives / functional ingredients. In addition, there are four Irish universities in the Irish Universities Nutrition Alliance - they carry out national nutrition surveys and develop databases which address both nutrition and food safety issues of relevance to development and implementation of public health policy as well as the needs of the food industry. Public funding of Food for Health is in the region of €50 million. The major R&D funders are DAFM, SFI, HRB, EI, Marine Institute and industry.

Publicly funded research may provide the basis for new enterprises, or the technological enhancement of existing Irish enterprise. Background medical, population and nutrition research will enable functional food research activities. It is also an opportunity to apply some of the expertise developed within the Pharmaceutical sector to a new area of Irish enterprise.

Development of novel high-value nutrition and wellness products and functional ingredients is an exciting new opportunity for Ireland’s food sector. Ireland is uniquely positioned in this area with the natural resources, reputation, research strengths and enterprise base and to develop foods for health. The challenge is to ensure full integration of the research base and enterprise. Robust scientific data is required to underpin health claims; therefore access to a functional clinical research infrastructure is essential to trial new products.

Acknowledging that research in health can benefit both the economic and societal/health agendas, it is clear that the realisation of the full potential of Food for Health research and commercialisation requires the engagement of the health system. While continued investment in research in population health sciences, health services research, integrating clinical infrastructure and translational research will be required, it is important to recognise that this investment has a dual purpose. On the one hand, these research areas enable the generation of evidence to inform policy and improve clinical practice, create opportunities for improved healthcare delivery and better health outcomes. At the same time, research in these areas can benefit the wider economic agenda which aims to further develop the healthcare industry in Ireland for the domestic and potentially

international markets. It can do so by strengthening the infrastructure, capability and capacity that will enable, inter alia, the identification, development, validation and potentially the adoption of enterprise outputs within the health system.

Food for Health

Vision/opportunity: Invest strategically in Foods for Health research to drive innovation and enable the food sector to achieve its full potential in a sustainable manner thereby contributing to the achievement of the overall Food Harvest 2020 Vision of Acting Smart, Thinking Green, and Achieving Growth, increasing public awareness of the role of nutrition, thereby supporting population health.

<p>Objective 1</p>	<p>To develop a Strategic Research Agenda which is informed by the needs of all relevant stakeholders to facilitate growth within the Irish food sector on the one hand, and at the same time to contribute to the mutual goal of improved population health through improved diet, nutrition and lifestyle strategies, and facilitate active participation in EU and International research activities.</p>
<p>Objective 2</p>	<p>To ensure that the skill sets of graduates, postgraduates and researchers are relevant to the needs of the stakeholders and ensure that a critical mass of researchers is in place to deliver on the Vision.</p>
<p>Objective 3</p>	<p>To ensure that research outputs from State funded research are exploited, in accordance with National IP Policy for the maximum benefit of the State, society and enterprise.</p>
<p>Objective 4</p>	<p>To ensure existing infrastructure is fit-for-purpose and managed appropriately and that future infrastructure needs are identified</p>

No	Action	Deliverable	Benefit	Lead	Support	Timeline
Pre-existing action						
H0.1	Appendix 1 lists a range of relevant actions deriving from Food Harvest 2020 that are already underway. Their implementation is being closely monitored by the High Level Implementation Committee chaired by Minister Coveney.	Based on Food Harvest 2020 actions, an up-to-date list of research related actions available	Alignment of all relevant and related research actions arising from Food Harvest 2020 and the NRPE.	DAFM	Teagasc, EI, MI, Bord Bia, BIM, AHI, ICBF, Industry	Q4, 2012
Objective 1	To develop a Strategic Research Agenda which is informed by the needs of all relevant stakeholders to facilitate growth within the Irish food sector on the one hand, and at the same time to contribute to the mutual goal of improved population health through improved diet, nutrition and lifestyle strategies, and facilitate active participation in EU and International research activities.					
H1.1	Funding Departments and agencies to work together to define and implement a strategic research agenda aligned to the NRPE Priority Area “Food for Health”, taking account of relevant ERA-NET and JPI SRA’s., through coordinated funding	Streamlined, integrated, co-ordinated and focussed publicly funded competitive Calls for Research Proposals for both basic and applied research.	Maximum value is gained from State investments. Investments are focussed on the needs of the sector and other stakeholders. Increased interaction	DAFM	All relevant funding departments & agencies	Q2, 2014

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	instruments.		<p>between academia and industry and between academia and health practitioners/policy makers.</p> <p>More efficient use of researchers time.</p> <p>Active participation of Irish researchers within EU and International Research Activities including the JPI “A Healthy Diet for a Healthy Life”.</p> <p>Enhanced ability to leverage non-exchequer funding.</p>			
H1.2	<p><u>Interim Measure - until delivery of H1.3:</u></p> <p>Draw from the “Food and</p>	Research aligned to the needs of end users yielding knowledge &	Enable Ireland’s food sector to achieve growth targets set in FH 2020 in a	DAFM	Teagasc, MI, EI, SFI, HRB	Q4,2012

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	Health” section of <i>Food Research Ireland, Sea Change</i> and other relevant documents to guide the content of publicly funded competitive Calls for Research Proposals until the SRA has been developed.	technologies of practical use to underpin enterprise growth and public policy formation.	sustainable manner by addressing consumer needs for health and wellbeing Public policy in the area underpinned by robust science.			
H1.3	<u>Main Action:</u> Develop a National Strategic “Food for Health” Research Agenda , based on the Research Agenda for Food and Health outlined in <i>Food Research Ireland and Sea Change</i> , and other relevant documents, taking account of needs of all stakeholders. (See also Action H3.1). For example, the SRA should define / clarify the following needs:	<ul style="list-style-type: none"> Single unified up-to-date “Food for Health” SRA to guide public investment by all funding agencies and to further clarify research themes of relevance to end users. 	<ul style="list-style-type: none"> Consolidated blueprint for the on-going guidance of publicly funded research in this priority area and alignment with JPI HDHL SRA¹. Improved product, process and service innovation; 	DAFM	All other relevant funders & stakeholders	Q2, 2014

1 JPI HDHL SRA: Eu Joint Participation Initiative “Health Diet for a Health Life” Strategic Research Agenda

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	<ol style="list-style-type: none"> 1. Discovery of Nutraceutical / functional ingredient / bioactive. 2. Strengthen Ireland's capacity to screen bioactives for potential nutraceutical/functional ingredients/bioactive compounds. 3. Define a model framework to enable and support the development of new nutraceutical/functional ingredients/bioactives products to ensure Ireland realises its potential to be a leader in this area. 4. Create a responsive 	<ul style="list-style-type: none"> ▪ Strong research base in platform science and technology underpinning Food for Health. 	<ul style="list-style-type: none"> ▪ Increased competitiveness of the enterprise base. ▪ Improved population health in relation to nutrition and diet. ▪ Ireland remains competitive and well positioned to respond to (short), medium and long term opportunities and research demands arising through disruptive technologies and new direction. 			

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	<p>process that translates food for health research into commercial outcomes and products (including scale-up; formulation and validation of food health claims).</p> <p>5. Enable the development of clinical trial framework / human intervention study that supports the validation of “claims” for foods for health products.</p> <p>6. Lead development of regulatory framework for nutraceuticals / functional ingredients / bioactives by drawing from the pharma expertise in</p>					

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	<p>Ireland.</p> <p>7. Develop, maintain and link population health databases (e.g. related to interaction between nutrition and lifestyle); manage and facilitate access to data in accordance with National IP Policy.</p> <p>8. Strengthen Ireland’s capacity to conduct research into the determinants of diet and nutrition, including biological, psychological, social, environmental, cultural and economic perspectives, and to translate this knowledge into effective nutrition,</p>					

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	<p>lifestyle and policy interventions.</p> <p>9. Harmonise and standardise methodological, data collection and data management procedures for studying the determinants of diet, food choice and physical activity, and to drive better use of existing databases.</p> <p>10. Exploit synergies with other opportunity areas e.g. diagnostics research, to develop biomarkers for nutrition and for assessing personalised nutrition and Sustainable Food Production and</p>					

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	<p>Processing to ensure the supply of raw materials from which novel compounds can be extracted.</p> <p>11. Continue to fund excellent research underpinning Food for Health through bottom up calls.</p>					
H1.4	<p><u>Main Action:</u></p> <p>Develop a suite of funding instruments (new, existing or modifications of existing) across all relevant departments and agencies which will allow for the implementation of the SRA and facilitate the following objectives:</p> <p>1. Address ‘pain points’ in innovation pertaining to this PA</p>	<ul style="list-style-type: none"> ▪ Improved and/or new inter-linked & 	<ul style="list-style-type: none"> ▪ Improved product, process and service 	DAFM	Teagasc, MI, EI, SFI, HRB, Irish Research Council	Q2, 2014

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	<p>having regard to the respective remits of each funder.</p> <p>2. Incentivise researcher participation in non-Exchequer funded projects through use of uniform conditionality clauses in national research funding programmes.</p> <p>3. Develop best practice model to facilitate industry co-financing (including in-kind) at each step of the research continuum.</p> <p>4. Facilitate industry-academia exchange,</p>	<p>complementary R&I support instruments.</p> <ul style="list-style-type: none"> ▪ Increased involvement of Irish food for health researchers in international consortia. ▪ Burden sharing between the State and enterprise. ▪ Industry Masters / Ph. 	<p>innovation and societal benefits arising from research in this PA.</p> <ul style="list-style-type: none"> ▪ Improved reputation of Irish food for health researchers & increased draw down from external funding sources. ▪ Research specific to industry needs. ▪ Research relevant to public health policy and practice needs. ▪ Research students more 			

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	<p>including industry Masters and PhD programmes, but also short-term exchanges for qualified researchers in both directions.</p> <p>5. Provide overall framework to ensure that funding instruments are operated in a coordinated manner (including joint-calls), in terms of timing and policy with due cognisance of the JPI</p>	<p>D programme; Instruments to include option of short-term industry-academia exchange.</p> <p>▪ Co-ordinated, joined up, targeted Calls.</p>	<p>available to solve relatively low level but nevertheless very important technical problems for industry.</p> <p>▪ Improved interaction and flow of ideas between academia and industry.</p> <p>▪ Catering for</p> <ol style="list-style-type: none"> 1. cross-disciplinary research in food for health and 2. research continuum from basic through to commercial / 			

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	HDHL and relevant ERA-Nets.		translation.			
H1.5	Active strategic participation in relevant EU & international food for health research policy initiatives / funding vehicles e.g. ERAnets, JPI's, EIPs, Food KIC, etc.	<ul style="list-style-type: none"> ▪ Non-exchequer funding leveraged. ▪ Irish researchers leading research consortia. 	<ul style="list-style-type: none"> ▪ Increased funding leveraged from non-exchequer sources. ▪ Active participation in European Research Area. ▪ Leadership position in terms of specific research areas e.g. nutrigenomics, biomarkers of nutrition, dietary determinants of health. ▪ Excellent science base developed through 	DAFM	DJEI, Teagasc, HRB, EI, MI, SFI	Q4, 2012

No	Action	Deliverable	Benefit	Lead	Support	Timeline
			enhanced networking.			
Objective 2	To ensure that the skill sets of graduates, postgraduates and researchers are relevant to the needs of the stakeholders and ensure that a critical mass of researchers is in place to deliver on the Vision.					
H2.1	Revise third level curricula in line with the recommendations of: <ol style="list-style-type: none"> 1. The National Strategy for Higher Education to 2030. 2. Innovation Ireland. 3. Report of the Expert Group on Future Skills Needs “Future Skills Needs for the Food and Beverage Sector 2009”. 	Relevant skillsets identified and third level curricula revised.	<ul style="list-style-type: none"> ▪ Graduates with the required skillsets to work in enterprise sectors associated with this PA. ▪ Better alignment of skillsets with the needs of the sector to facilitate economic growth. ▪ Graduates with the skillsets required to address the 	HEA	All other relevant funders & stakeholders; Expert Group of Future Skills Needs	Q2, 2014

No	Action	Deliverable	Benefit	Lead	Support	Timeline
			societal challenges associated with diet related health concerns.			
H2.2	In the development of a self-sustaining Agricultural, Food & Forestry Graduate Development Programme ² , ensure modules related to “Food for Health” are developed / delivered in line with the needs of the sector and that the programme: <ol style="list-style-type: none"> 1. Ensures a broadened skills base. 2. Responds to the differentiated level of need by industry particularly among 	Postgraduates / researchers attain the required skillsets to work within the sector.	<ul style="list-style-type: none"> ▪ Improved competitiveness within the sector. ▪ Increased level of innovation in terms of products, processes and services. ▪ Postgraduates / researchers with the skillset to work in public health / healthcare 	HEA	All other relevant funders & stakeholders	Q2, 2014

² Building on the one already developed and presently funded by DAFM. See Action Plan for PA I.

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	<p>food SME's.</p> <p>3. Is part of a campaign to raise industry awareness of the benefits to be gained from the recruitment of skilled graduates.</p>		services.			
H2.3	<p>In line with Government Policy:</p> <ul style="list-style-type: none"> ▪ Identify key senior and/or permanent researcher posts in, RPOs (Teagasc & MI) and in the HEIs necessary to meet the vision of this PA. ▪ Develop a mechanism to fill these positions³. ▪ Identify and fill junior research positions 	<p>Critical mass of researchers to deliver on the Vision.</p>	<ul style="list-style-type: none"> ▪ Help deliver on expected increased outputs for the agri-food and fisheries sector under FH 2020 and other relevant sectors related to this PA. ▪ Research capacity that can be exploited by enterprise. 	D/EPR & HEA	Funding agencies	Q2, 2014

³ For example, a similar scheme could be developed along the lines of the protected Clinician positions funded by the HRB

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	where critical mass does not exist and is necessary to meet the Vision of the PA.					
Objective 3	To ensure that research outputs from State funded research are exploited , in accordance with National IP Policy for the maximum benefit of the State, society and enterprise.					
H3.1	Modelled on EU Bio-economy Strategy Panel & European Innovation Partnerships ⁴ , establish a single stakeholder Group to inform and monitor the outputs of the initiatives funded in line with the SRA ⁵ .	Discussion platform and flexible framework with a clear mandate in place to support interaction, strategic planning and implementation of the SRA.	<ul style="list-style-type: none"> ▪ Opportunity for all stakeholders to be involved in the discussion in relation to this PA. ▪ Assurance that the research is reflective of the needs of all 	DAFM	All stakeholders	Q2, 2014

4 EU Bioeconomy Panel will be composed of the relevant European Commission services, representatives from member states with responsibility for the bioeconomy, representatives of relevant stakeholder groups. The Panel will be chaired by the Commission. EIP on “Active and Healthy Ageing” and EIP on “Agricultural Sustainability and Productivity”

5 The Group should include representatives from key stakeholder groupings such as policymakers, funders, research performers, industry and end users and should build on the existing Advisory Groups (i.e. AREA, FREA, HRG, National SG JPI HDHL etc.)..

No	Action	Deliverable	Benefit	Lead	Support	Timeline
			<p>stakeholders.</p> <ul style="list-style-type: none"> ▪ Economic growth achieved in line with targets for the sector. ▪ Population health policy in relation to diet and nutrition cognisant of the needs of all stakeholders. 			
H3.2	<p>In line with National Intellectual Property Policy:</p> <ol style="list-style-type: none"> 1. Develop a dissemination strategy that is applicable and 	Technology and knowledge transfer initiatives relevant and appropriate to the needs of the sector.	<ul style="list-style-type: none"> ▪ Streamlined and more tailored communication. ▪ Improved competitiveness. 	DAFM/EI/HEA	All funders	Q2, 2014

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	<p>relevant for this PA.</p> <ol style="list-style-type: none"> 2. Develop / build on existing initiatives⁶ to facilitate technology and knowledge exchange between academia and enterprise. 3. Develop initiatives to facilitate knowledge exchange and transfer between academic and the health services / Government Departments / State Agencies. 4. Ensure enterprise is fully informed of the rules regarding technology transfer. 		<ul style="list-style-type: none"> ▪ Increased level of innovation in terms of products, processes and services. ▪ Improved knowledge of all stakeholders regarding the role of nutrition in health. 			

⁶ This could be based on the recently launched Teagasc Technology & Knowledge Transfer Strategy.

No	Action	Deliverable	Benefit	Lead	Support	Timeline
Objective 4		To ensure existing infrastructure is fit-for-purpose and managed appropriately and that future infrastructure needs are identified				
H4.1	Identify all research activities of relevance to this PA ⁷ with a view to facilitating collaboration; exploiting synergies and maximising impact.	<ul style="list-style-type: none"> Alignment of research activities which stimulates greater collaboration and eliminates unnecessary duplication of effort Rules of engagement to facilitate formal collaboration. Identification of industry relevant 	<ul style="list-style-type: none"> Maximum gain from State investments achieved. Improved and more efficient use of the critical mass. Platform technologies of relevance to enterprise identified. Exploitation by enterprise of the research base. Maximum impact on public health 	All funders & RPO's		Q2, 2014

⁷ Including for example Food for Health Research Initiative, Food Health Ireland, NutraMara, Alimentary Pharmobiotic Centre, Gylcoscience Research, Nutrition Databases / Surveys / surveillance studies; SLAN, Growing up in Ireland, Longitudinal Study in Ageing: Health and Well-being Survey (DoH)

No	Action	Deliverable	Benefit	Lead	Support	Timeline
		platform technologies.	and wellbeing goals.			
H4.2	<p>Plan to ensure access to necessary infrastructure</p> <ol style="list-style-type: none"> 1. Map large scale research infrastructure / facilities (>€500k) currently available in Teagasc, RPOs & the HEIs and develop protocol for shared access to it by other RPO's and industry. 2. Identify key major international research infrastructures abroad of strategic relevance to this PA & develop unified national plan by which all relevant / interested public RPOs can access it on 	Shared services protocol.	<ul style="list-style-type: none"> ▪ Ensure that research is not hindered by lack of access to necessary infrastructure. ▪ Better value for money. ▪ International linkages. ▪ Strategic focus to future infrastructure funding calls. 	HEA	All funders & RPO's	Q2, 2014

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	<p>preferential terms.</p> <p>3. Identify necessary research infrastructures that are not available to Irish researchers and industry either nationally or abroad (at a cost effective rate) and develop prioritised list to inform future infrastructure funding calls.</p>					
H4.3	Explore the possibility of Teagasc becoming involved in spin-out companies resulting from its research activities.	Technologies developed on foot of public funding commercialised.	<ul style="list-style-type: none"> ▪ Increased competitiveness of the sector. ▪ New products, processes and services delivered for the sector. 	Teagasc		Q2, 2014

No	Action	Deliverable	Benefit	Lead	Support	Timeline
Cross-cutting Generic Health Research Enabling Actions						
HRB1	Increase capacity for, and investment in, high-quality Health Services Research that examines how social factors, behaviours (patient and/or clinician), organisational structures, business processes and/or financing systems impact on access, uptake, use, quality and cost of healthcare (e.g. HTAs and services provision costs) and healthcare interventions.	Knowledge base around usability and barriers to uptake of new technologies in healthcare and evidence around quality, cost and implementation.	<ul style="list-style-type: none"> Uptake and implementation considerations built into product development and evaluation. Opportunity for improved healthcare delivery and better health outcomes. 	HRB	DOH/HSE, other relevant funders and stakeholders	Q4, 2016
HRB2	Continue investment in Population Health Research that focuses on behaviours and lifestyle factors, and on prevention and health promotion strategies for specific populations or	Knowledge base around the needs, behaviours and lifestyle of specific population groups (e.g. older people, people with	<ul style="list-style-type: none"> Generation of an evidence base for prevention and health promotion strategies. Opportunity for 	HRB	DOH/HSE, other relevant funders and stakeholders	Q4, 2016

No	Action	Deliverable	Benefit	Lead	Support	Timeline
	groups.	disabilities).	better input into product development for targeted groups.			
HRB3	Build capacity within the health research system to address specific skills deficits in population health sciences and health services research.	<ul style="list-style-type: none"> ▪ National structured PhD programme investment in relevant disciplines. ▪ Investment in post-doctoral research capability at trainee, fellow and senior fellow levels. ▪ Investment in new senior research leadership capability. ▪ Investment in 	<ul style="list-style-type: none"> ▪ Timely and relevant research evidence to address cost, quality, effectiveness and implementation issues. ▪ Increased capacity in the health research system from current very low base. ▪ Development of multi- and inter-disciplinary approaches to health 	HRB	DAFM, HSE, DOH, HEIs, HEA, Medical Charities	Q4, 2016

No	Action	Deliverable	Benefit	Lead	Support	Timeline
		projects, programmes and centres.	<p>challenges.</p> <ul style="list-style-type: none"> Health system partnerships provide greater opportunities for evaluation and commercial exploitation of a range of health care interventions. 			
HRB4	Establish (T1) and implement (T2) HRB funded CRF activities at Galway (not including building), Cork and St. James Hospital.	CRFs in academic teaching hospitals.	<ul style="list-style-type: none"> Research infrastructure in health care settings supporting health research, and including medical devices, therapeutics, food for health, diagnostics and connected 	HRB	DOH, HSE, funding agencies, industry and other non-exchequer funding sources	T1 = Q4, 2014 T2 = Q4, 2016

No	Action	Deliverable	Benefit	Lead	Support	Timeline
			<p>health.</p> <ul style="list-style-type: none"> ▪ Access to research for patients. 			
HRB5	Establish a collaborative network between HRB-funded and other existing CRFs.	Provide a national point of access to, and coordinated support for, multi-site health research projects for investigator-led and industry-led studies.	<ul style="list-style-type: none"> ▪ Efficient supports for multi-site studies delivered through the CRFs. ▪ Access to research for patients. 	HRB	EI, IDA, SFI, HSE, academic medical schools, DAFM	Q4, 2016
HRB6	Establish health research networks to increase capacity for collaborative working within and between health specialisms.	<ul style="list-style-type: none"> ▪ Health research networks established. ▪ Access to large-scale and multi-site patient cohorts for 	<ul style="list-style-type: none"> ▪ Increased capacity to generate research evidence to clinical practice. ▪ Access to research for patients. 	HRB	HSE, EI, IDA, SFI and other relevant stakeholders	Q2, 2014

No	Action	Deliverable	Benefit	Lead	Support	Timeline
		health research.				
HRB7	Take steps to establish a national biobanking system and support infrastructure	<ul style="list-style-type: none"> ▪ Governance Board established. ▪ National Biobanking core support infrastructure established. ▪ Nationally agreed processes and standards to assure quality of biobanks and associated datasets developed. 	<p>National Biobanking System will enable:</p> <p>research activity across the entire spectrum of health research (basic, applied, translational, clinical, population health).</p> <p>-seamless access to national biosamples/associated datasets.</p> <p>the quality of biosamples/associated datasets in Ireland are to the highest international standards.</p> <p>improved efficiencies,</p>	HRB, SFI, EI	IDA/DAFM, Academic medical schools, CRFs, industry	Q4, 2016

No	Action	Deliverable	Benefit	Lead	Support	Timeline
			<p>effective cost management and reduced fragmentation of biosample collections/associated datasets.</p> <p>Ireland to be more competitive for industry and international research endeavours</p>			

Appendix 1 Relevant Actions from Food Harvest 2020

References to recommendations below relate to FH2020

Food Harvest 2020 - Farm Level Challenges	Lead	Support	Progress to Date	End Date
3.1.1 DAFF should continue to promote active involvement of researchers from institutes and industry in relevant international research projects consortia and initiatives including, in particular the EU's Framework Research Programme	DAFM	Teagasc	Up to date progress in attached link - recommendation 15 refers http://www.agriculture.gov.ie/media/migration/publications/2012/FH2020230812.pdf	Ongoing
Food Harvest 2020 - Industry Level Growth				
3.2.1 Industry investment in R&D should be doubled as % of turnover by 2020 in line with the following targets: Sector : Current Average: 2020 Target Beverages/Bakery : 0.5% : 1% Dairy Functional Foods : 0.5% : 1% Consumer Foods : 1.1% : 2% Primary Meats : 0.5% : 1%	EI		This recommendation is primarily addressed at industry. Up to date progress described in link above - recommendation 37 refers	Ongoing
Food Harvest - Customers				
3.4.1 An industry-led focus on research and innovation in areas of health and wellness as a means for growth in a mature EU market.			Up to date progress described in link above - recommendation 57 refers	Ongoing
3.4.2 Complete DAFM, Enterprise Ireland and Bord Bia scoping exercise on the market potential for delivery of new food and nutritional products and models of service to older people.			The tender for a consumer research project has been awarded and a facilitated workshop took place to raise awareness of the role of nutrition in ageing .	Complete
3.4.3 Teagasc-led scientific research which underpins Ireland's sustainability claims and validates the environmental and nutritional benefits of grass-based rain fed production.	Teagasc		Up to date progress described in link above - recommendation 55 refers	Ongoing

Food Harvest - Value Added Food & Drink Sector				
3.5.1 The Committee endorses the recommendations in the Report of the Innovation Task Force and underlines their particular relevance to the food industry.	EI	Bord Bia	Up to date progress described in link above - recommendation 72 refers	Ongoing
3.5.2 Substantial research to underpin and substantiate sustainability claims that will assist the Brand Ireland concept.	Teagasc		Up to date progress described in link above - recommendation 83 refers	Ongoing
3.5.3 Industry must prioritise investment in consumer focused innovation, new product development and development.	Industry	EI	This recommendation is primarily addressed at industry. Up to date progress described in link above - recommendation 73 refers	Ongoing
3.5.4 Actively pursue the establishment of 2 new industry- led research centres.	EI			Completed
3.5.5 To build on the work of the existing industry led food research committee, inter-agency collaboration is required to formalise strategic, commercially focused research. [Basically anticipating action needed after publication of NRPE]			Up to date progress described in link above - recommendation 74 refers	Ongoing
3.5.6 Relevant bodies should focus on the improvement of commercial orientation by better targeting of research on emerging market opportunities and developing consumer trends.			Up to date progress described in link above - recommendation 77 refers	Ongoing
3.5.7 Linkages and collaboration between research institutes and industry organisations, such as Food for Health Ireland must be developed so that the activities of research institutions are grounded in the downstream requirements of a competitive food and drink industry.	EI		Up to date progress described in link above - recommendation 78 refers	Ongoing
3.5.8 Research and innovation resources in different institutes (state agencies, and universities) should work closely to maximise their synergies and increase overall effectiveness. This is currently exemplified through the recently announced Teagasc - UCC Strategic Alliance in Food Research.			Up to date progress described in link above - recommendation 79 refers	Ongoing
Food Harvest - Beef				

3.6.8 The positive environmental, human-health and animal-welfare attributes associated with grass-fed beef and sheepmeat should be credibly established with a view to building them into marketing opportunities for Ireland. In addition, environmental criteria should be built into Quality Assurance schemes.	DAFM, Teagasc, Bord Bia		Up to date progress described in link above - recommendation 114 refers	Ongoing
Food Harvest - Dairy				
3.7.1 The processing sector, supported by Enterprise Ireland, Teagasc and third level institutions, must develop an investment strategy that will facilitate more commercially focussed R&D.	DAFM, EI	SFI, all other RPOs	This is primarily directed at industry . Up to date progress described in link above - recommendation 128 refers	Ongoing
3.7.2 Launch the IDB Dairy Innovation Centre in collaboration with Teagasc to generate a pipeline of branded milk-based consumer products.			The new Dairy Innovation Centre has been launched and is currently developing four new value -added cheese products, which will be commercialised and marketed internationally by IDB members	Ongoing
3.7.3 Teagasc will integrate a facility for Dehydration Technology into its existing research programme on ‘Smart’ dairy ingredients that have built-in functionality for food applications worldwide.			Industrial clients are working to develop a new ingredient/ process, building on their existing use of Teagasc’s integrated dehydration pilot plant facility.	Ongoing
Food Harvest - Horticulture				
3.10.1 Relevant state agencies should foster product and production innovation, the adoption of emerging technologies and plant breeding.	Teagasc, Bord Bia	EI	Up to date progress described in link above - recommendation 146 refers	Ongoing
Food Harvest - Organic Production				
3.11.1 Teagasc should continue to carry out specific research, innovation and product development.	Teagasc		Up to date progress described in link above - recommendation 156 refers	Ongoing
Food Harvest - Cereals				
3.12.2 Research should be undertaken into high value areas such as biopharmaceuticals, bioplastics and bioremediation.	Teagasc		Up to date progress described in link above - recommendation 175 refers	Ongoing
Food Harvest - Seafood				

<p>3.14.1 The development and research strategies for seafood, Food Harvest 2020, "Sea Change, a Marine Knowledge, Research and Innovation Strategy for Ireland 2007-2013" and Food Research Ireland, supported by DAFM, BIM, Marine Institute, Bord Bia, EI and industry, should continue to guide immediate seafood research priorities, consistent with available resources.</p>	<p>DAFM, MI</p>	<p>BIM, Bord Bia, EI</p>	<p>Up to date progress described in link above - recommendation 185 refers</p>	<p>Ongoing</p>
<p>3.14.2 Support the development of innovative, consumer oriented seafood products through the BIM Seafood Development Centre and Teagasc Ashtown Food Research Centre.</p>	<p>BIM</p>	<p>Teagasc</p>	<p>Up to date progress described in link above - recommendation 187 refers</p>	<p>Ongoing</p>
<p>3.14.3 Continue and intensify the R&D programmes on marine biotechnology development and marine functional foods.</p>	<p>MI</p>	<p>Other funders</p>	<p>Up to date progress described in link above - recommendation 188 refers</p>	<p>Ongoing</p>

Forfás



An Roinn Post, Fiontar agus Nuálaíochta
Department of Jobs, Enterprise and Innovation