	Desired high level strategic goal relevant to the "Food for Health" and/or "Sustainable Food Production and Processing" research priority area.	[1]Outline of the proposed research that will help achieve the strategic goal	Rationale / Justification ……. i.e. how will this research help achieve the goal and why should it be publicly funded.	Expected result / what will success look like. Also, what metrics can be used to measure degree of success.
1	**1. Reserch into Natural and Sustainable Farming Systems**	To research and develop existing alternatives to the dominant industrial energy and oil dependent farming system. Investigation into the best methods for Application of natural farming principles to Irelands existing farming practices. To establish specify research and resources for the future development of Organic Farming Systems, Agro-forestry Systems, Permaculture systems, Mixed multi product farming systems, Biodynamic Systems.	A re-examination of traditional and existing naturally sustainable farming systems through the eyes and experience of modern farming research models and tools will provide Irish farmers with alternatives. Providing a future for the Irish family farm and food Sovereignty for Irelands people. It will lead to the development of resilient, sustainable, productive, local and environmentally based farming methods.	More independent, sustainable Irish farms, requiring less inputs. Farms producing more natural and nutrient dense foods. Greater Irish food Sovereignty and Security. Greatly improved environmental awareness and engagement. Irish farmers can provide real social, economic, environmental and long term gains for their communities if they can be supported in returning to more
2	**2. Intensive Urban Food Production Systems**	Investigation of urban food production systems that are sustainable and economically viable.	Demonstrate working models of local urban based food production systems.	Engagement of Urban populations in food production and sustainability. Improved health from local nutrient dense food and working with the land. Improved food sovereignty and security for Irish people.

[1] This description should not be so specific that it amounts to an actual individual project but, rather, sufficiently broad in concept that it could be used as a basis for inviting a number of applications in a competitive research Call process. Equally, it should not be so broad as to be meaningless.

				Reducing food poverty and increasing availability to fresh local food.
3	**3. Seed Saving Methods**	Investigation of best methods for seed production, saving and storage systems relating to food crops. Investigation into existing processing equipment and adaptions for small scale production and storage. Collaborate with existing Irish Seed Guardian Network, established by the Irish Seed Savers Association.	Protection and further development of a living and evolving seed bank. Improved seed saving skills Increase network of seed savers nationally	Increased seed sovereignty and security. Increase the geographical dispersion and suitability of seed stock. Maintain and Increased the genetic / cultural diversity of seeds. Improved adaptability of seeds to local environments and changing climate.
4	**4. On farm instant Digital analysis Methods.**	Research existing multi use digital nutrient analysis meters which give instant (short time) feed back on major nutrients in the soil. Research and promote the use of Brix meters for tissue analysis on farm for nutrient dense food / Grass high in sugars and minerals. Research the use for on farm use of EC meters for the	In order for farmers and growers to have a better control and management of the nutrient level in soils, they need to be able to measure them cheaply and regularly. These digital on site meters can be used throughout the year in addition to the expensive in-depth labs tests. This maintain and improve soil health and productivity.	Digital meters will give farmers a better idea of what is happening in their soil through out the year. Increasing their output and soil condition. They will reduce the amount of nitrates and other run offs which cause pollution by giving farmers the ability know what is happening under their feet. Their decisions will be based on real time information not

		management of conductivity and hence productive potential. Develop Track and trace APPs for smart phones that will allow farmers track the inputs and crops / Stock. Allowing them to easily input information by scanning, taking a picture or manually inputing the data. Looking at APPS for Horticultural producers, Live stock / Milk (Grass), Free ranging / Organic Poultry etc.	The development of APPs smart phones that will take the hassle and time of keeping records and information for farmers will. Help them be more efficient and less stressed. It can also allow for much larger and detailed records and information to be collected. It will make this kind of information more accessible to all growers / farmers. It will also enable better flow of information for farm inspections and departmental requirements.	historical data, It will also allow for better mapping of soil samples trough out the farms. Existing methods prevent this due to their costs. The development of suitable software to go with existing hardware will help farmers know exactly what is happening on their farms and be able to look back at what happened in the past to make informed decisions. It will reduce the time and cost associated with inspections. It can form the basis of greater environmental tracking and recording methods that can feed back into national strategies and plans.
5	**5. Compost Production and Application methods**	Research On Farm composting methods using Mycelium for digesting and braking down organic matter into soil. Research Ramial chipped Wood (RCW) as an alternative to compost for improving soil	Mycelium can recycle green and other waste streams on the farm , creating soil, improving biodiversity and creating another potential income stream from mushroom production.	Sustainable on site integrated fertility improving and maintenance systems. Improving soil stability and durability because they contribute to the soil structure and to the

		condition. Develop a successful composting process for poultry offal to produce finished on farm compost that is environmentally sound, economically feasible, and returns nutrients to the farm. Research compost application methods, Direct spreading and compost tea production.	The Ramial chipped Wood method RCW have nothing in common with traditional organic matter such as compost. RCW have an impact on the short, medium and long term structure of the metabolism and of soil biology. The soils components (minerals, distribution of energy, biochemical, chemical, and biological components) are integrated with the microorganisms in such a way that nutrients are available to the plant request but firstly ruled by fungi instead of bacteria. RCW are made from tree parts, branches, twigs and leaves rich in nutrients, sugar, protein, cellulose, and lignin, which all play a precise and specific role in the formation and maintenance of fertile soils. This is not the case for barks, trunk wood, sawdust, wood shavings, and all industrial	main biological characteristics. Reduction of inputs into farming and food production systems, Improved sustainability , Improved environmental benefits. Recycling of nutrients on farm and less vulnerability to oil prices connected with conventional fertilizer.

			waste material, etc. Small-scale poultry production can be profitable for farmers if they can return the nutrients back to the land, but they need to deal with the slaughter waste (offal, guts,feet, heads, and feathers) .	
6	**6. Irish honey production using natural methods / Systems**	Investigation of sustainable small scale commercial honey production, in both urban and rural locations. Research into the native Irish Bee genetic strain, leading to improved hive health and vigour. Increase support mechanisms for existing and start up bee keepers.	Increase the the amount of local Irish honey production. Increase the availability of other honey / Bee related products Increase the amount of geographical dispersed colonies.	Products for improved health , related to local pollen and allergy resistance. Increased pollinators improving pollination rates of local food crops. Increased bio diversity and environmental benefits.

7	**7. Sustainable production of Herbs for traditional herbal uses.**	Investigation of sustainable herb production systems. Identification of relevant herbs providing health benefits	Providing Irish herbs for Irish herbalists and herbal health products. Replacement of imported herbs with locally produced sustainable herbs.	Commercially viable and sustainable herb production systems Geographically and culturally appropriate. Herbalists have access to a local supply for their products.
8	**8. Natural plant based rooting hormone replacements.**	Investigation into sustainable replacement of chemical rooting hormone powders with natural plant based locally available plant alternatives, ie. Willow, Fuchsia, etc	Replacement of chemical rooting hormone with natural alternatives for organic and natural food, fruit and tree production systems.	Use of naturally available resources to improve nursery stock production. Increased efficiency of natural and organic growing methods of stock, using locally available resources.
9	**9. Myco- remeadation, Use of Mycelium / Mushrooms for improving Agricultural production & Environmental Health.**	Create Irish research based on the work of Paul Stamates. Looking at the potential of mushrooms and mycelium for. Production of Compost as a primary or secondary product of mushroom cultivation using wood chips. Examination of Mycelium's ability to capture and digest	Modren industrial agriculture has broken the natural cycles of mycelium reproduction. Essentially removing them from our farming environments. Reintroduction will kick start natural cycles for nutrient uptake and immune resistance for our crops and environment in general. Myco- remeadation (Running /	Once methods are established. It will reduce input costs for farming. It will improve our environment, It will provide a health enhancing and veried food source. It will recycle nutrients and improve biodiversity. It will kick start natural ecological cycles damaged by pollution.

		bacteria and other pollutants resulting form housing animals and waste storage facilities. Research verifying the huge potential to increase production of crops, grasses, trees and fruit due to the symbiotic potential . (Their ability to increase the effective area of the plants root mass to a multiple of hundreds. Research into mycelium's ability to digest / convert and deliver unavailable phosphorus and other minerals in the soil. Making them available for higher larger crops, higher quality and healthier plants.	Growing Mycelium) will provide us with natural and cost effective tools to restore and improve our polluted environments.	
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Please **briefly** outline up to 10 **high level goals**[2] that you believe can and should be progressed through publicly funded research under the "Food for Health" and/or "Sustainable Food Production and Processing" priority areas of the National Research Prioritisation Exercise together with (i) a description of the nature of the research required to address the goal(s), (ii) the justification for publicly funding that research and (iii) an outline of what a successful outcome from such research would look like and how it might be measured.

[2] Please note that in this context "high level strategic goal" means some development, innovation, or way of overcoming a persistent growth impediment that would have an impact of economic value.

End Note.
Please acknowledge receipt of this submission.

This submission is a collaborative work between Transition Kerry and The Organic Growers of Ireland.
www.transitionkerry.org & http://www.organicgrowersireland.org
We would like to be informed in any further consolation processes involving food production and sustainability.
If you have any queries on the above research areas. Please contact Thomas O Connor (organicfarmerthomas@gmail.com) who can furnish addition information / references which can help in the structuring and direction of the proposed research.

Submitted by: Niamh Ní Dhuílll **On behalf of:** Transition Kerry (Food Group)