SUSTAINABILITY HUB – RESEARCH FUNDING CALL

Hub Leaders: Prof Michael Grubb (UCL) and Dr Tiago Cavalcanti (Cambridge)

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Rebuilding Macroeconomics (RM), funded by the Economic and Social Research Council (ESRC) and hosted by the National Institute of Economic and Social Research (NIESR), is inviting calls for research proposals under its Sustainability Hub. The long-term aim of the RM project is to transform macroeconomics back into a policy-relevant social science. As an intermediate step, we will provide recommendations to the ESRC on our suggestions for the future shape and direction of research in Macroeconomics. We are looking to support projects that aim to identify promising areas for future research (on a 'proof of principle' basis), rather than seeking to obtain definitive answers from what will inevitably be limited project budgets.

The Sustainability Hub

Problems related to macroeconomics and sustainability encompass different aspects of social sciences and the environment. Understanding such problems and addressing them require a deep knowledge on fundamental issues in macroeconomics and the interactions between natural and social systems.

The Sustainability Hub of Rebuilding Macroeconomics is looking to fund pilot research projects that address questions on how we evaluate and achieve a sustainable economy and the importance to taking into account the degradation of our natural capital and the risks associated with climate change into macroeconomic frameworks and models. In a workshop held in September 2018, we presented problems related to mainstream macroeconomics and sustainability and a background paper, written by Nicolas Cerkez on sustainability and growth (available here), was discussed by participants. Possible approaches and modelling strategies to address related issues on macroeconomics and the environment were suggested.

Through this research call, we seek to initiate a conversation between teams of researchers, each working on issues around sustainability and macroeconomics but perhaps using different approaches. We hope to generate a collaborative and productive dialogue between these teams by holding regular meetings in which the participants present their ideas to each other, learn from and challenge each other's assumptions and ways of thinking and consider possible new methods of investigation.

We are looking for genuinely fresh and interdisciplinary approaches that open-up new avenues of promising research which further our understanding of economics and sustainability science. A number of themes emerged from the Hub's workshop which may be addressed in the research proposals:

- **Energy and the Environment in Macroeconomic Models:** The importance of addressing climate change and sustainability issues is reflected in a growing literature which integrates

the environment and the macroeconomy. Yet the majority of the papers do not address the heterogenous effects of climate change, how multiple environmental threats are shaping economic decisions, or explicitly the role of energy / physical resource inputs and hence abatement policies in economic development. How could we study and model the effects of these actions on the macro-economy? Proposals that address the distributional and allocative effects of climate change impacts and responses (including energy transitions), potentially (but not necessarily) including internationally, are invited. We would like to encourage research applications which explore such problems, perhaps building on insights from other scholarly disciplines and departing from existing models which typically do not consider tipping points, non-convex interaction of the environment and the economy, and associated uncertainties.

- **Decision Making in the Context of Planetary Boundaries:** Exceeding our planetary boundaries could increase the risks of catastrophic and potentially irreversible environmental change with implications for sustainability and wellbeing. Given the deep uncertainties and irreversibility of our actions, is there a particular role for macroeconomic and social resilience? It is important to study the relevant actions to mitigate such risks but also the decision-making frameworks, implementation and design of such policies at multiple levels, and potentially their representation in national modelling, when global cooperation is needed. We understand that there are no simple solutions but it is important to take into account strategic behaviour, coordination problems and political issues. Therefore, proposals that address problems of national decision making and sustainability in an inter-connected and uncertain environment are invited.
- **Useable and Relevant Metrics of Economic Wellbeing:** Given the importance to measure economic activity, sustainability and wellbeing, it is important to understand the main indicators of wellbeing (eg., Human Development Index, Comprehensive Wealth, Happiness Index, among others) and the relationship of such indicators with measures of sustainability. Given the number and diversity of metrics already proposed we are not necessarily interested in new metrics, the main objective in this particular area could be to test whether, when and why various proposed metrics may diverge substantially from traditional measures (notably, GDP), and hence provide alternate, objectively credible and useable (eg. In modelling) integrated indicators of environmental and social outcomes.
- **Evidence on large-scale Endogenous change in relation to sustainability:** We believe that more evidence is needed on how environmental risks, economic signals and policy choices related to sustainability affect long-run investment, innovation and structural change in economic systems. Projects in this area might provide empirical insights in relation to the long run impact and adjustment timescales in response to resource limitations, prices and various other signals relating to environmentally damaging components of socio-economic system; the research might also extend to consider the role of political economy in influencing path-dependence and resistance to environmentally-beneficial changes. This might in turn be useful to shed light on both costs and policy instruments for achieving sustainability.
- **Evolutionary approaches and Agent-based modelling in relation to sustainability:** As a potential modeling complement to some of the above areas, we are interested whether agent-based or other evolutionary forms of modeling could provide useful insights and

guidance for sustainability transitions, including the political economy of transitions. New models may be considered but likely emphasis would be on the potential insights, interactions and iterations between 'stylised' agent-based models and more traditional macroeconomic models, so as to inform potential future modelling-oriented research calls in macroeconomics. Such exploration could include consideration of the role of emotional and political preferences for sustainability in agents' behaviour and associated impacts on macroeconomic transitionsWe welcome cross-disciplinary proposal that combine insight and modelling approach of economics, political science, ecology and sustainability science.

We have no wish to be overly prescriptive and this list of ideas is not intended to be exhaustive. We welcome proposals which take a different perspective to our questions, and that we may have neglected, but please also refer to other RM hubs eg. for proposals on more generic issues such as the short-termism of financial systems. Only proposals that take fundamentally new approaches that are not currently being supported in other ways will be funded.

Process and criteria

We are looking to fund 3-5 projects likely in the range £25-£150,000, at 100% fEC, depending upon the scale and quality of proposals, within a *total* envelope of up to £300,000 in this call. Projects may be 1 or 2 years and we will consider a smaller call in Autumn 2019 to build upon some of the emerging results from smaller projects under this call, which could include follow-on grants for 1-year projects that show particular interest.

The application procedure will consist of two stages.

- For Stage 1, applicants should submit an outline statement of up to 1,000 words, using the form provided below. An indicative outline cost level should also be supplied, though a formal costing is not required at this stage. The application form is available below. Stage 1 applications should be submitted to r.arnold@niesr.ac.uk by 23.59 GMT on **9 December 2018**.
- Successful applicants from Stage 1 will be invited by Hub Leaders to proceed to Stage 2. They will be required to submit a more detailed version of their proposals, including: a Case for Support; a Justification of Resources; a Timetable; an Impact and Communications Plan; and a formal Budget.

Successful applications will be funded at 86% of full Economic Costing. RM will consider proposals which are genuinely innovative; which are oriented towards policy-relevant problems; which are rigorous; and may open-up new promising avenues for investigation but may be overlooked by traditional funding sources. We are particularly interested in interdisciplinary proposals and the introduction of new methods to macroeconomics. Please clearly indicate the goal of the project, methodology, expected outcomes and contribution. Please be also precise about how you plan to spend the money.

We are looking forward to your applications.

SUSTAINABLE GROWTH HUB HUB - RESEARCH FUNDING CALL – STAGE 1 APPLICATION

Name of Lead Applicant	
Institution	
Contact e-mail address	
Contact telephone number	
Title of proposal	
Outline of proposal (up to 1,000 words). Please explain the Macroeconomic question(s) which you are addressing; the methods you intend to use; the reasons why the work would be policy-useful; and the reasons why you believe the project to be new and interdisciplinary in nature.	
Outline cost (a formal budget is not required at this stage, but please provide an indicative total amount, at 100% fEC)	

Any questions about the call should be referred initially to Richard Arnold at r.arnold@niesr.ac.uk, tel: +44 207 654 1945. Completed applications should be sent as e-mail attachments to r.arnold@niesr.ac.uk by 23.59 GMT on 9 December 2018.