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FUNDAMENTAL AND REAL-WORLD CHALLENGES IN ECONOMICS

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In the same way as the Hilbert Program was a response to the foundational crisis of mathematics[1], this article tries to formulate a research program for the socio-economic sciences. The aim of this contribution is to stimulate research in order to close serious knowledge gaps in mainstream economics that the recent financial and economic crisis has revealed. By identifying weak points of conventional approaches in economics, we identify the scientific problems which need to be addressed. We expect that solving these questions will bring scientists in a position to give better decision support and policy advice. We also indicate, what kinds of insights can be contributed by scientists from other research fields such as physics, biology, computer and social science. In order to make a quick progress and gain a systemic understanding of the whole interconnected socio-economic-environmental system, using the data, information and computer systems available today and in the near future, we suggest a multi-disciplinary collaboration as most promising research approach.