Members of the COPIL of the INRAE BETTER Metaprogramme

Marc Barbier

I am Director of Research at the joint research unit LISIS (Interdisciplinary Laboratory of Sciences, Innovations and Societies) in Marne La Vallée (France). As a researcher in organisational science and the sociology of science and technology, I have been working for 20 years on the transformation of knowledge production and innovation in agriculture. This work has led me to follow configurations of transformation in agronomic research: environmental crises linked to nitrate and pesticide pollution, normative and performative deployment of sustainable development in the valorization of fibre plants, emergence of new fields of research around societal issues such as biofuels, biodiversity or ecosystem services. My recent work has focused on the analysis of the French agroecological project and on pesticide reduction, including preventive measures of emerging plant diseases. On the scientific front, I'm a member of the STRN (Sustainability Transitions Research Network) (www.transitionsnetwork.org), and I helped set up an international research cluster on agrifood system transitions (http://www.sad.inra.fr/Evenements/System-Innovation-towards-Sustainable-Agriculture). On the editorial front, I am co-editor of the Revue d'Anthropologie des Connaissances (http://www.cairn.info/revue-anthropologie-des-connaissances.htm), a scientific journal created in 2007 and published by the Société d'Anthropologie des Connaissances (http://www.socanco.org).

In 2010, I created the INRA Sciences en Société research unit on the campus of Université Paris-Est, and led the establishment of a strong INRAE scientific presence for the benefit of IFRIS (Institut Francilien Recherche Innovation Société) (www.ifris.org), of which I am now Director. I also managed the CorTexT platform (www.cortext.net), a research and design tool for renewing research in the humanities and social sciences based on the processing of digital textual traces. In connection with this investment, I am the designer and manager of the DIGIS Graduate Programme at the Gustave Eiffel University Graduate School. I regularly teach Masters courses in Science Studies and the Anthropology of Knowledge in the Sciences Innovation Techniques Agricultures specialisation (Master ACTES AgroParisTech, Univ. Paris Saclay and MHN).

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Sami Bouarfa

I'm an agronomist and hydrologist at the joint research unit G-EAU (Water Management, Actor, Territories) where I conduct research on water and agriculture issues, mainly agricultural irrigation issues. I have developed research on irrigation performance, in particular to reconcile the challenges of agricultural production and environmental conservation. I have also contributed to the development of participatory approaches to account for the constraints and viewpoints of different stakeholders in territorial water management. I developed this research in France and in three countries in North Africa. I am currently coordinating a large-scale research and expertise project on the renewal of irrigation policies in southern countries financed by the Agence Française de Développement. I am also General Secretary of a professional association dealing with agricultural water, the Association Française pour l'Eau, l'Irrigation et le Drainage (AFEID), and a member of Allenvi GT eau continentale.

By training, I'm a hydraulics engineer with a DEA (Diplôme d'Etudes approfondies) in agricultural hydraulics, I obtained my PhD in 1995 and my HDR (accreditation to direct research) in 2013 at Cemagref. I was scientific coordinator and Deputy Scientific Director of the Water Department at the time of the merger with INRA (now INRAE). I am currently Deputy Head of Department in INRAE's new AQUA (Aquatic Ecosystems, Water Resources and Risks) division, where I am in charge of the integrated and adaptive management of water resources and infrastructures at the urban-rural interface, which could contribute to the MP Better, particularly on the theme of the reuse of treated wastewater. I also contribute to the Accaf 2 MP research unit.

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Véronique Broussolle

I'm a microbiologist and head of the SporAlim team in the joint research unit SQPOV (Safety and Quality of Processed fruit and Vegetables) at the INRAE PACA (Provence, Alpes Côte d'Azur) in Avignon. The team belongs to the Microbiology and Food Chain (MICA) division. We work on food safety, with a particular focus on spore-forming pathogenic or spoilage bacteria. Our aim is to develop methods to control these microorganisms whose great capacity for resistance and adaptation extends throughout the food chain, from the environment to the consumer's digestive tract. My current research concerns the molecular mechanisms involved in the formation of spore forms and their resistance properties in response to the environmental conditions encountered in the food production chain.

Trained as an academic, I defended my PhD thesis in microbiology at the University of Clermont-Ferrand (France), then after a post-doctorate and an ATER contract, I was recruited as a Research Associate at INRA in 1997. I have been an elected member of the MICA department's Scientific Advisory Board since 2011, co-leader of MICA's "Food Quality and Safety" thematic field since 2014, and a member of the Microbiology and Food Safety evaluation CSS since 2011. I recently joined the RMT Qualima (Mixed Technology Network) and the RMT Alimentation locale (Local Food) to represent the MICA department.

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Philippe Delacote

I'm an INRAE Director of Research at the joint research unit BETA (Bureau d'Economie Théorique et Appliquée, Office of Theoretical and Applied Economics), Centre de Nancy) and head of the Agriculture-Forest research unit at the Climate Economics Chair. My work focuses on climate economics applied to agriculture and forestry, from both a mitigation and adaptation angle. My methodological approaches focus on applied microeconomics from a rather theoretical perspective. In particular, I am currently working on issues related to the fight against deforestation in the tropics and the conservation of ecosystems, as well as the adaptation of agriculture to weather shocks in southern countries. The case studies I'm currently working on are in the Brazilian Amazon and Colombia, the Congo Basin, and to a lesser extent in the USA and the Grand Est region of France. After obtaining my PhD at the European University Institute in 2007, I was recruited by INRA in 2008, in the Forest Economics Laboratory (now BETA).

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Sylvie Gillot

I am Director of Research in process engineering applied to wastewater treatment and reclamation, at the research unit REVERSAAL (Reducing, reusing and reclaiming wastewater resources) at the INRAE Lyon-Grenoble Auvergne-Rhône-Alpes centre. My research is focussed on gas/liquid transfers in complex environments and on modeling wastewater treatment and recovery systems, with the aim of optimising processes and channels, particularly from the point of view of energy.

Trained as an engineer at INSA-Lyon (Institut national des sciences appliquées de Lyon), I obtained my PhD in wastewater treatment in 1997, and did my postdoc at Ghent University (Belgium). I joined Cemagref in Antony in 2001 as a research engineer, and have been a director of research since 2012. From 2012 to 2019, I was also Deputy Scientific Director of Irstea's Ecotechnologies Department, in charge of activities dedicated to the treatment and recovery of wastewater, livestock effluents and organic waste. Lastly, I do consulting for both the public and private sector.

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Arnaud HELIAS

Since 2019, I have been an INRAE research director at joint research unit ITAP (Technologies et Méthodes pour les Agricultures de demain Technologies and Methods for the Agriculture of Tomorrow) in Montpellier, a joint research unit with the Agro Institute and attached to the INRAE AgroEcosystem and MathNum departments. I'm currently its director.

An agronomist by training, with a PhD in process modelling, I was previously an INRAE research engineer in modelling fermentative processes for food, and a lecturer in environmental assessment at the Agro Institute. With a background in biological systems modelling, my research now focuses on the environmental impacts of human activities, within the reference framework of life cycle assessment (LCA). I'm involved in modelling cause and effect relationships, from determining pollutant emissions and resource consumption to quantifying environmental damage. I am particularly interested in modelling and simplification to find a compromise between representativeness and operability. I have been responsible for environmental assessment in a number of collaborative projects. I am Chairman of the Scientific and Technical Council (CST) of the GIS (Common Interest Group) "Réseau pour l'Évaluation environnementale des produits agricoles et alimentaires - REVALIM" INRAE - Ademe - ACTA - ACTIA. The GIS develops methods and data to support actors in the agricultural and food sectors in their eco-design initiatives, and to develop media to inform consumers. I'm a government expert on environmental labelling of food products, and provide expertise for the scientific council of IFPEN (Institut français du pétrole et des énergies nouvelles). I am also co-leader of the INRAE LCA (Life Cycle Assessment) network and food editor for the International Journal of Life Cycle Assessment.

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Bernard Kurek

I'm a plant cell wall biochemist. I work on the biotechnological or physico-chemical transformation of lignocelluloses to valorize their biopolymers and plant fibres in composite materials.

I work in Reims at the joint research unit between INRAE and URCA ('Université de Reims Champagne-Ardenne) called FARE (Fractionnement des AgroRessources et Environnement, Fractionation of AgroResources and Environment), which I have headed since 2009 (https://www6.nancy.inrae.fr/fare/).

I very recently became involved in an EEC-Bio Based Industries (BBI) project on the valorization of lignins in biorefineries (WP leader - Zelcor), in a PIA (Programme d'Investissements d'Avenir, Future Investments Programme) project on plant fibres (SINFONI; action leader) and I am co-leader for URCA of a French Trans-Regional Grand Est project on the use of renewable C for agromaterials (3BR- Université de Lorraine, Université de Reims Champagne Ardenne).

I have directed and/or co-directed PhD theses on the oxidation of lignocelluloses for the production of nano-composites (Institut Carnot 3BCAR project with IJPB-INRAE), on the production of hemp concretes (ANR project with ENTPE, Lyon), on innovation for doubly green chemistry (Regional project with Unité SHS Regards, URCA).

I was president of the Réseau Français des Parois for 10 years (https://twitter.com/des_parois); I've been the bioeconomy theme leader in the CEPIA/Transform department since 2017 and a member of the "Bioeconomy" foresight working group of INRAE DS Alimentation et Bioéconomie (2017-2019).

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Florent Levavasseur

I am an agricultural engineer by training and have a PhD in landscape function modelling from the Agro Institute Montpellier. I have been an INRAE research engineer since 2015 in the joint research unit ECOSYS (Ecologie fonctionnelle et écotoxicologie des agroécosystèmes, Functional Ecology and Ecotoxicology of agroecosystems), in Palaiseau. My research focuses on optimising the use of residual organic matter on a territorial scale: livestock effluents, urban composts, methanisation digestates, etc. I consider both the agronomic benefits, such as increasing soil organic matter or supplying nitrogen to crops, and the environmental impacts on air, soil and water. To carry out this research, I rely on field trials, in particular the long-term trials of the SOERE-PRO network, of which I am gradually taking over the coordination. I also use crop system and territorial modelling. To this end, I am involved in both the AMG (soil carbon modelling) consortium and the STICS (Simulateur mulTIdisciplinaire pour les Cultures Standard, Multidisciplinary simulator for standard crops) crop model project team. Lastly, I'm interested in how recycling organic waste products fits farmers' cropping systems, and can modify them, particularly in the case of expansion of methanisation.

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Jean-Denis Mathias

I'm a modeler in the field of complex systems. I work in the research unit LISC - Laboratoire d'Ingénierie pour les Systèmes Complexes, Complex Systems Laboratory - at the INRAE centre in Clermont-Ferrand, in particular on modelling socio-ecological systems, based on the framework of controlled dynamic systems. Since 2017, I've been working on territorial bioeconomy issues, and led this line of research in IRSTEA's Territories department. My work on this topic currently focuses on the regulation of exploited ecosystems, using different theories and approaches (ranging from viability theory to the use of weak signals).

I completed my university studies with a DEA (equivalent to a MPhil in the British system) and then got my PhD at the University of Clermont-Ferrand. Before joining IRSTEA as a research fellow in 2007, and then research director, I was a lecturer. I spent 6 months as a visiting researcher at Arizona State University (2015-2016). For two years (2018-2019), I was deputy scientific director of the Territories Department at IRSTEA.

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Jean-Philippe Steyer

I'm a biological process modeller specialised in the treatment and recovery of human waste. I work at the Laboratoire de Biotechnologie de l'Environnement, Environmental Biotechnology Laboratory in Narbonne, an INRAE research unit that I headed from 2009 to 2016. Over the past 25 years, I have specialised in the use of microbial ecosystems to produce energy (particularly biogas via methanisation) or high-value-added molecules (via microalgae in particular). Environmental impacts and the development of sustainable industries are also at the heart of my concerns.

Trained as an academic and automation specialist, I completed my PhD thesis in Artificial Intelligence at LAAS-CNRS (Research laboratory specialized in system analysis and architecture) (The French National Centre for Scientific Research) in conjunction with INSA in Toulouse. I then did a postdoc in the USA (in fact, it was my military service) on coupled modelling between biological kinetics and hydrodynamics, and after working for SANOFI, I joined INRA in 1993. I chaired the specialised commission of IRSTEA's ECOTECH department from 2013 to 2019 and have been an elected member of INRA's scientific council since 2018. Since the merger, I left the AGROENV department to which I was attached to become deputy department head of TRANSFORM and I support Sophie Thoyer (see below) in setting up and leading our metaprogramme.

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Sophie Thoyer

I am an agricultural and environmental economist. I work at the joint research unit CEE-M (Center for Environmental Economics – Montpellier), notably on the design and evaluation of agri-environmental public policies, using experimental (laboratory and field) and behavioural economics methods. I am a specialist in the Common Agricultural Policy (CAP), on which I have published extensively. I co-host a website providing information, training and expertise on the CAP: https://www.supagro.fr/capeye. Since 2019, I've been working on territorial bioeconomy issues, combined with animation of the Allenvi group on "Territoires en Transition". My current work on this topic focuses on the role of the CAP in the development of the bioeconomy and the circular economy, the barriers and levers of peri-urban agriculture, and analysis of the economic and environmental performance of small farms.

I trained as an agricultural engineer, then went on to do a MSc and then a PhD in economics at the University of London, where I worked for a few years as a teacher-researcher before coming to Montpellier Supagro as a lecturer and then a professor. I joined IRSTEA in June 2018 to head the Territoires scientific department. Since the merger of INRA and IRSTEA, I have been deputy head of INRAE's EcoSocio division and in charge of setting up our metaprogramme.

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Anne Tremier

I'm a chemical engineer with a PhD in Environmental Biosciences from the University of Aix-Marseille (2004) and an HDR (accreditation to direct research) in Earth Sciences from the University of Rennes 1 (2015). I joined IRSTEA (Institut national de Recherche en Sciences et Technologies pour l'Environnement et l'Agriculture) in 2004, where my work initially focused on the composting process. Today, my research focuses more broadly on the understanding, design and technical and environmental optimisation of organic waste recovery processes. My projects address two main issues: (1) optimisation of organic waste recovery by anaerobic digestion and composting in the agricultural sector, and (2) management and recovery of urban biowaste. On this second theme, I have been able to develop solid expertise on the integration of domestic or proximity composting as a solution for the management of urban bio-waste. I am currently coordinating the European DECISIVE project (H2020 no. 689229), which aims to change the linear paradigm of waste management based on the import of goods and the export of waste from urban centres. The aim is to establish a more circular system favouring local management of bio-waste in conjunction with urban agriculture, with a view to producing energy and bio-products for local consumption.

Since the creation of INRAE in January 2020, I have been Director of the OPAALE research unit in Rennes. OPAALE is a multi-disciplinary unit comprising four teams, whose goal is to promote innovative technological and organisational solutions for the valorization of food materials, biomass and waste, as part of a regional bioeconomy.

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Julie Wohlfahrt

I'm an agronomist by training, and my research community is that of sustainability sciences. I work in the joint research unit LAE (Laboratoire Agronomie et Environnement), and am attached to the TERRA department. After foreseeing the location of perennial energy crops in territories, my research now focuses on characterising and modelling territorial bioeconomic systems. I want to understand how the management of different biomasses works in territories, and to determine the sustainability of different possible ways of organising biomass management, particularly with a view to developing the bioeconomy. My work is based on two types of methods, i) surveys of the various stakeholders in the bioeconomy in the territory cincerned, ii) conceptual modelling, simulations, and evaluations of prospective scenarios for the organisation of biomass management using the MAELIA platform (http://maelia-platform.inra.fr/).

Since 2018, I've been taking part in the INRA / IRSTEA forward-looking workshop on the bioeconomy, as well as the "bioeconomy and territory" working group in my TERRA department.

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