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AGRICULTURAL RESEARCH
FOR DEVELOPMENT

CIRAD's POSITION

Science with and for society



June 2022



CIRAD is committed to working with and for society

by Elisabeth Claverie de Saint Martin, CIRAD CEO

The planet and humankind face a range of increasingly dangerous challenges. More than ever before, it is absolutely vital that science be capable of tackling those challenges, the extent of which has prompted a number of debates, not just within but beyond the research community. Like health, environment, climate change and food issues, they concern each and every one of us.

High expectations

CIRAD conducts agricultural research for the development of tropical and Mediterranean countries, working on rural, farming and food systems and manmade ecosystems, in order to achieve sustainable, inclusive development goals. We are committed to science with and for society, notably via the “innovation and impact” and “training” ambitions set out in our strategic vision. This tallies with our core value of open, useful and inclusive science. Views expressed recently by our Science Council and our Ethics Committee have prompted a rethink of our relationship with society. They have confirmed the need for us to take a considered, explicit stance on this question. On a national level, in line with EU and global programmes, the 2021-2030 French research programming act (LPR) sees strengthening the links between science and society as a priority. In April 2022, the Minister of Higher Education, Research and Innovation presented the raft of measures relating to the topic of “science with and for society” set out within the LPR. In particular, the aim is to “fuel democratic debate and support public decisions, [...] and enable every citizen to understand the world around them and play a part in it”. CIRAD subscribes fully to that objective.

A dual-purpose document

This document is intended for both CIRAD’s staff members and its partners. In-house, we are keen to set out our position, provide tools for understanding, adopting and promoting that position, and mobilize our staff, encourage discussions and contributions, and gather ideas. Outside CIRAD, we have several target audiences: research partners in tropical and Mediterranean countries and in the global North, and our direct or indirect institutional targets (public institutions, local authorities, civil society organizations, socioeconomic players, students, etc).

Towards an action plan

This document is a summary of the one presented to the CIRAD Science Council in March 2022, resulting from an in-house study between 2019 and 2021 by an ad hoc working group. After a short presentation of CIRAD and its current stance as regards relations with society, it presents the seven priorities we are putting into practice to foster new links between science and society. Commitment, openness and exemplarity are not empty words for CIRAD; they are the pillars of our operations with and for society. They go hand in hand with certain key words that I would like to stress: responsibility, reciprocity and accountability. In response to the current over-abundance of information, which sometimes triggers suspicion, mistrust and confusion between research and society, I would call for a new climate of mutual confidence, to foster the co-construction of solutions in support of the sustainable development goals set by the United Nations. CIRAD is determined to do its utmost to build fertile, stimulating links between science and society, in the global North and in tropical and Mediterranean regions. An action plan is due out shortly, to translate our position into concrete operations.

Montpellier, 30 June 2022

An engaged targeted research organization

CIRAD, a French public targeted research organization, is the main establishment in Europe devoted to research for agricultural and rural development in the countries of the global South. It works in 50 tropical and Mediterranean countries with very varied, changing social, environmental and economic situations. Since it was founded in 1984, its central remit has been to contribute to rural development in warm regions, through research and skill-building operations, primarily in the agricultural, forestry and agrifood sectors. That remit was set by the French State, via our two line ministries: Higher Education, Research and Innovation, and Europe and Foreign Affairs. CIRAD's operations are guided by the United Nations sustainable development goals (SDGs) and the Paris Climate Agreement (2015), among others. The EU, our second biggest donor, has indirectly validated our remit and recognizes our capacity to fulfil it.

CIRAD's targeted research for development is conducted in partnership, against a backdrop of increasing globalization, with a view to and in line with the rules of scientific diplomacy, in which capacity building plays a major role. The establishment targets rural, agricultural and food systems, along with terrestrial ecosystems. It considers the economic, social and environmental aspects of development, as well as health, financial, food and nutrition, political and institutional aspects.

CIRAD's activities are guided by economic and development policies in the global North and South, by emerging crises and change, and by the main global and regional transitions under way. In this context, the establishment must now express itself fully and roll out operations across major global issues: food, poverty, biodiversity, health, land use,

climate change, etc. Society's expectations have changed, in the light of the adverse environmental and socioeconomic consequences of certain agricultural and rural development models. CIRAD thus finds itself at the heart of a range of sustainability and responsibility issues relating to the countries in which it works. It conducts its activities in line with the following values, which determine the choices it makes and the approaches it deploys.

Working together

Sharing and co-construction are founding principles for CIRAD, whose operations are consistently framed by programmes drafted and implemented with partners.

Useful, inclusive science

This requires a sense of responsibility, ethics and solidarity with local populations and partners, and inclusive research to benefit the world's most vulnerable people.

Open science

The aim is to boost our capacity to interact and work with every type of stakeholder, including those outside the scientific community. This means rolling out a range of geographical, cultural, scientific and disciplinary approaches and comparing perspectives on the issues. CIRAD is also committed to making its work and results accessible, in line with the principle of accountability.

Commitment to sustainable development

The aim is to contribute to achieving the SDGs and to systematically consider the different dimensions of sustainable development, to ensure maximum impact.



Research with and for society

While this document aims to give a brief outline of our position in terms of the relationship between science and society, CIRAD has in many respects already been conducting research with and for society for many years.

On a scientific and technical level, CIRAD has always worked to develop biological and technical alternatives and build the knowledge required to generate those alternatives. However, we have also expanded our offering, and are now developing organizational and institutional alternatives, along with a range of resources for decision-makers.

These different outputs are vital levers for innovation and change, enabling progress towards sustainable development. We now have the means to put them into practice. Our research is no longer confined to laboratories and experimental stations, and is more contextualized, inclusive and participatory.

The pillars of our position in relation to society

CIRAD's responsibility to society rests on three main pillars:

Commitment to sustainable development

Backed by our past achievements, our heritage in terms of interactions, our close links with various partners in the global South, and our knowledge of situations on the ground, CIRAD has embarked upon profound changes. We have committed to conduct science that supports public action for sustainable development, that is more aware of its societal impact, and whose actions serve its credibility, legitimacy and relevance.

Openness

It is vital that we be familiar with and adopt participatory research practices, as promoted by the open science movement, in order to contribute to the collective drive to make research results more reliable and reproducible, through transparency and openness. Dialogue between science and society is also built upstream, by sharing scientific and technical culture. In particular, the aim is to use the digital transition and the latest tools and instruments to facilitate open access to our outputs and measure the

implications in terms of how we conduct research. Moreover, CIRAD is moving towards science focused on society, by encouraging (i) interactions with non-scientific players, (ii) the dissemination of scientific culture, (iii) the explanation of our operations and results to citizens, decision-makers and policymakers, and (iv) debate on topics of general interest.

Exemplarity

This third pillar relates to the direct impact of our activities on the environment and on social wellbeing within our organization and its environment, and the ethical frameworks within which we conduct those activities, with a view to more sustainable, inclusive and ethical science. It also concerns the vigilance required in our research in partnership, particularly with the private sector, in situations in which the establishment's values and aims may be tested. Exemplarity also relates to the credibility of our organization and its capacity to act according to the principles it promotes. It requires in-house building of institutional frameworks, procedures, practical initiatives, and referral, control, monitoring-evaluation and regulatory procedures.

Towards concrete action

To structure, develop and sustain fruitful links with society, CIRAD has set seven priorities centring on those three pillars (see diagram below).

Two priorities centring on commitment:

- 1 • Research determined to assess its societal impact
- 2 • Science of use to public action for sustainable development

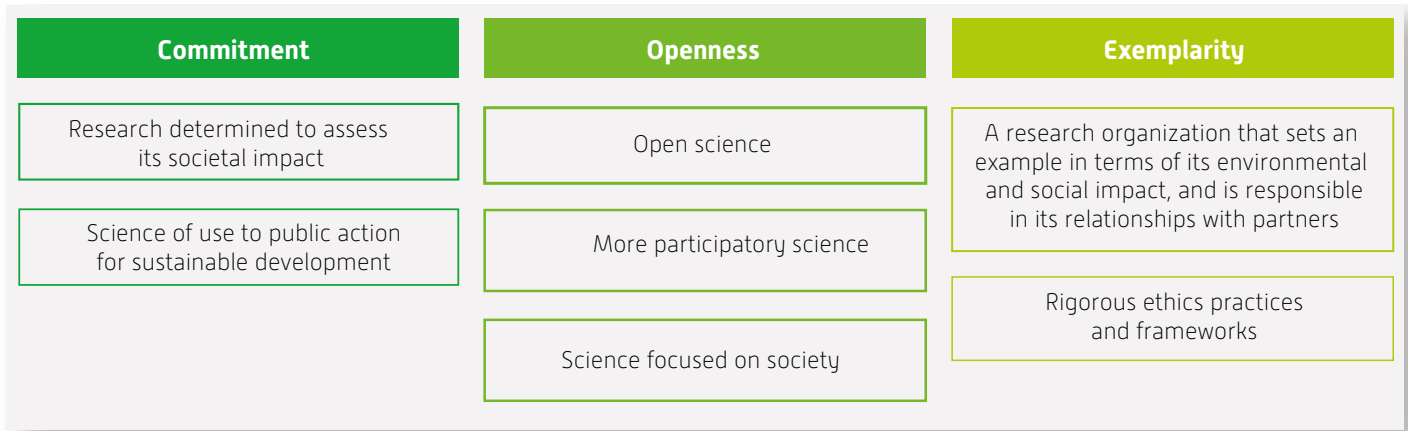
Three priorities centring on openness:

- 3 • Open science
- 4 • More participatory science
- 5 • Science focused on society

And two priorities centring on exemplarity:

- 6 • A research organization that sets an example in terms of its environmental and social impact, and is responsible in its relationships with partners
- 7 • Rigorous ethics practices and frameworks

These priorities will be put into practice through activities on various levels and by various groups within the organization, with significant interactions between them. Each priority is presented below via one or two concrete examples, chosen among other things for their innovative or emblematic nature, but the list is far from exhaustive.



Meeting of the territorial committee for Kairouan within the framework of the Programme of adaptation to climate change in vulnerable territories in Tunisia (PACTE project). CIRAD is promoting the co-design of sustainable natural resource management instruments and public debate on development issues



PRIORITY

1

Research determined to assess its societal impact

CIRAD is proud of its constant efforts and commitment to ensure impact: our science generates knowledge that serves to invent the farming systems of the future, feeds change processes and helps transform the lives of our target beneficiaries. This determination to

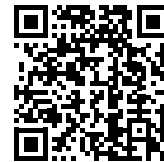
assess our impact (and our contribution to societal transitions towards sustainable agricultural and rural systems) is one of the organization's four main ambitions. We have a team devoted to this: ImpresS (Impact of research in the South).

The ImpresS method is central to CIRAD's impact culture

Since 2010, CIRAD has been working in-house and with its partners to develop an impact culture, built on a better understanding of the innovation mechanisms that fuel development. Impact is approached from two angles: the impact of past operations (ImpresS ex post) and programming of future operations to ensure impact and its assessment (ImpresS ex ante). The impacts of agricultural research for development are built over long periods, and the pathways that lead to those impacts are often complex and unpredictable. The overriding aim is to generate long-term societal impact. The approach also helps research to

communicate better with various types of players about its planned interventions: primarily research and development partners, but also public players and donors.

<https://www.cirad.fr/en/our-activities-our-impact/our-impact>



CIRAD helped to build CaribVET and One Health OI, two major health networks that have turned the One Health concept into an operational strategy on the ground. A "success story" on our website, cirad.fr, looks back at these networks, more than ten years after they were born



L. Balberini © Cirad

Science of use to public action for sustainable development

One of CIRAD's major roles is to inform public action, policies and instruments. That relies on scientific knowledge co-produced with partners in tropical and Mediterranean countries. Helping to shift public policy on food security, agroecological transitions, biodiversity, health or climate change is a powerful way of engineering the changes required on a larger scale. In terms of research, the organization has long been working on how public action is built, on agricultural and environment policies,

and on assessing their impacts. It also works on instruments and mechanisms to inform that action and those policies, to ensure sustainable, inclusive development. Numerous resources are available to decision-makers, in the shape of analyses, atlases and various pictures of situations, of current transitions, and of the risks incurred. Lastly, at the interface between research and political influence, the results of the various large-scale projects in which CIRAD is involved are relayed within policymaking forums.

The “Public policy and governance” platform in partnership for research and training (dP): understanding and analysing public action so as to play a part in it

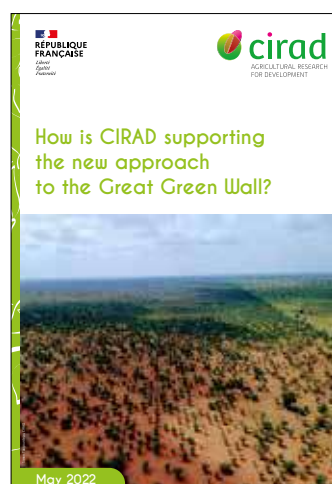
On the strength of its experience of working in some fifty countries in Africa, Latin America, Asia and the Pacific, CIRAD has drawn up a geographical partnership strategy, centring on the implementation of platforms in partnership for research and training (dPs). The “Public policy and governance in Africa” platform (dP PP&G), based in South Africa, in which CIRAD's partners are the University of Pretoria, the University of the Western Cape and the DSI/NRF Centre of Excellence in Food Security, aims to understand the changes in public action, the connections between the different levels on which decisions are made, the multiplicity of organisations and operators (public and private), and the historical and cultural links between institutional frameworks, modes of governance and the instruments associated with them in terms of rural development and natural resource management. The aim is also to engage discussion and contribute to the debate on governance issues in those fields.



Group of farmers in Zimbabwe

E. Torquebiau © CIRAD

<https://www.cirad.fr/en/worldwide/platforms-in-partnership/pp-g>



CIRAD has committed to the new vision of the Great Green Wall

The Great Green Wall (GGW) for the Sahara and Sahel initiative is an African Union programme aimed at turning the fight against desertification in the Sahel into an opportunity for local economic development, using solutions centring on sustainable natural resource management. CIRAD is fully engaged in the current vision of development driven by the Great Green Wall, which has been revived through a ten-year priority investment plan (2021-2030). We are currently working with some 50 partners in seven of the GGW countries, on targeted research projects covering every aspect of agricultural and rural development. CIRAD recently published a position paper on the issue.



<https://www.cirad.fr/en/content/download/6018/file/GMV%20ENG.pdf>

Open science

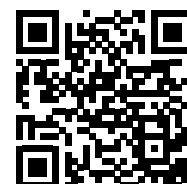
Using the opportunities offered by the Internet and digital technology, open science enables more cumulative science, backed by sharing of scientific content. This serves to accelerate innovation processes and develop new value-added services, the final aim being to enable societies in the global South to achieve the sustainable development goals. Since 2006, CIRAD has supported the principles of open access to knowledge. It has made an institutional commitment to share research results, expertise and training operations more widely with its partners

in the global South, in the fields of agriculture and sustainable development in tropical, subtropical and Mediterranean zones. This approach, centring on greater collaboration, transparency and openness, makes research both more rigorous and more reproducible, for the good of the scientific community, and beyond it, of civil society and the economic world, particularly when that research is publicly funded. Anyone interested can access the results of that research, take ownership of them and add further value. Open science breeds innovation and jobs.

A portal for “Sharing knowledge in sciences”

The CIRAD “Sharing knowledge in sciences” portal provides free, open access to the various platforms that disseminate the publications and research data produced or co-produced by CIRAD and its partners: publications, scientific works and journals, datasets, digital heritage collections, photographs and learning resources.

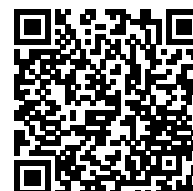
<https://partage-connaissances.cirad.fr/en>



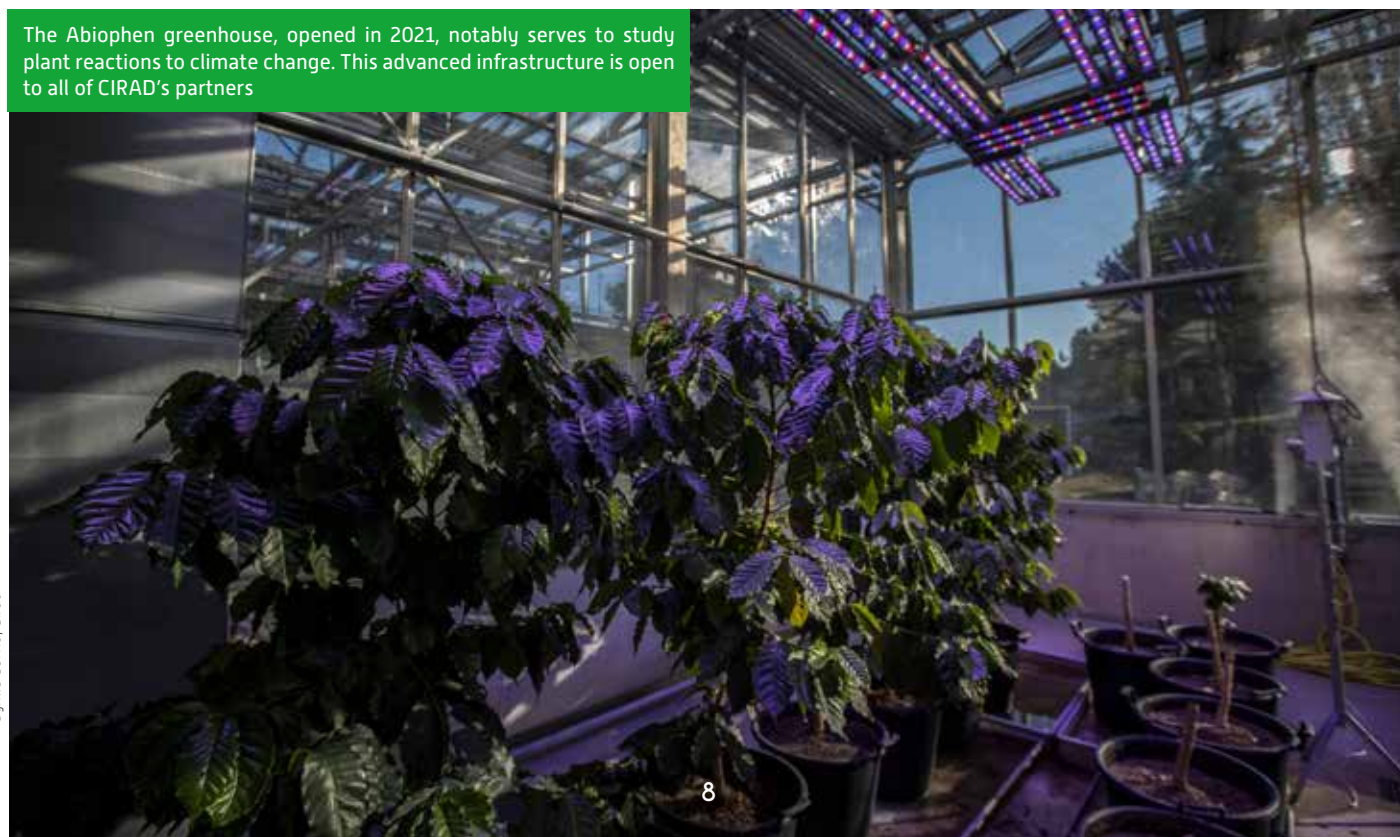
Open research infrastructures

Pooling of resources by CIRAD and its partners gives the scientific community access to unique, top-level biological, scientific and technical resources. Those collective tools, resources and infrastructures are open to all our partners, within the framework of joint projects or training operations. There is a specific page presenting what we offer on the cirad.fr website.

<https://www.cirad.fr/en/work-with-us/open-science/cirad-open-infrastructures>



The Abiophen greenhouse, opened in 2021, notably serves to study plant reactions to climate change. This advanced infrastructure is open to all of CIRAD's partners



More participatory science

In terms of participation, CIRAD has adopted the typology set out in the report on participatory science in France published by Houllier et al. in 2016. It distinguishes between:

- citizen science: using citizen knowledge and know-how to provide research with data. Such science also fosters citizens' understanding of scientific activities and awareness of contemporary issues, and multiplies sources and skills for research;
- participatory research on a community level. The aim here is to work with non-scientific players, in some cases the target beneficiaries (rural producers, as far as CIRAD is concerned), to develop technical, biological, organizational and institutional alternatives, in a participatory

way, on the ground (locally), and increasingly encompassing innovation systems;

- research on participation. The aim is to take a critical look at participatory practices themselves, their merits and their potential risks, to build on experience, to assess the genericity of such practices, and to develop new methodologies.

CIRAD has built up experience of participation in a range of fields. That participation, based on democratization of knowledge, now makes use of new approaches, such as those based on serious games (eg the TerriStories® participatory management game) or on crowdsourcing, like Pl@ntNet.

Pl@ntNet, when participatory science meets the general public

Pl@ntNet is a participatory science project accessible via a mobile and web app that serves to identify thousands of plant species using photos taken by members of the public. Anyone can send photos, which are automatically compared to thousands of images from the app's botanical databases. A list of possible candidates that correspond to the plant photographed is then suggested. Some 29 000 species are now listed in this scientific tool, which has been downloaded more than 16 million times worldwide.

<https://www.cirad.fr/en/our-activities-our-impact/our-impact/success-stories/pl-ntnet>



In addition to the mobile app, Pl@ntNet, co-founded by CIRAD, has given rise to some of the largest datasets and networks on plants in the world

TerriStories®, a participatory management game

TerriStories® is a scientific method that solves collective issues through a game. It was developed in Senegal, based on a board game, and aims to simulate environmental, economic and social uncertainties in order to encourage participants to build operational management rules in line with their own collective and individual requirements.

<https://www.cirad.fr/en/work-with-us/cirad-innov-solutions/success-stories/terri-stories-R-a-participatory-management-game>



TerriStories®: a board game based on CIRAD research

PRIORITY

5

Science focused on society

As far as CIRAD is concerned, communication cannot be restricted to merely “informing”, to disseminating its results, or to promoting itself. It is a real impact vector for its remit to contribute to development and disseminate scientific culture. To this end, CIRAD has been striving for many years to play an active part in major events open to all, in both North and South. Such events are an

opportunity to explain its activities to the general public. The establishment is also highly active on social networks and other new media (new website, launch of a series of podcasts, participation in the *The Conversation* website, etc), and regularly produces exhibitions that are shown widely, for the purposes of scientific mediation (eg the “African agroecology in motion” exhibition shown in several countries).

“Nourrir le vivant”, CIRAD’s first podcast, launched at the 2022 Paris International Agricultural Show



How can we feed ten billion people sustainably by 2050? “Nourrir le vivant” (“Feeding the living world”), the CIRAD podcast, sets out to discover places and people that are reinventing their farming systems, and in doing so, takes a fresh look at our relationship with the living world. It invites listeners to keep up with CIRAD’s research, following in the footsteps of our researchers and partners along the road to tomorrow’s farming systems.



The podcast is currently only available in French.

<https://www.cirad.fr/podcasts>

MOOCs, vehicles for transmitting the knowledge generated by research

CIRAD produces or contributes to MOOCs (Massive Online Open Courses), which are vehicles for transmitting the knowledge and know-how generated through the establishment’s research in partnership. These free online open courses are accessible via the French national FUN - *France Université Numérique* platform.

<https://www.fun-mooc.fr/en/courses/?limit=21&offset=0&query=cirad>



PRIORITY

6

A research organization that sets an example in terms of its environmental and social impact, and is responsible in its relationships with partners

CIRAD is convinced that the social and environmental aspects of development transcend economics. It has put sustainable development firmly at the heart of its remit, and strives to set an example in terms of its practices and their impact. From responsible business travel to

procurement procedures that promote the circular economy, through quality of work life and sustainable mass catering, it sees a range of social responsibility issues as levers for action.

CIRAD, a spearhead of the QuaRES association



CIRAD staff members are among the founders and active members of QuaRES (an association for quality in research and higher education). QuaRES links more than 3000 players in the higher education and research sectors, organizes seminars and training courses, publishes books, participates in EU research projects in the global South and is building a partnership with CIRSES, a network working to promote social responsibility and sustainable development within the higher education sector.



<https://www.cirad.fr/en/about-us/social-responsibility>

PRIORITY

7

Rigorous ethics practices and frameworks

There is growing demand from society for greater morality and transparency in public affairs. The fight against corruption, scientific integrity, the need for independent expertise in the fields of health and the environment, and personal data protection concerns all require us to strengthen our operational arrangements, communicate, and provide our staff and partners with training. CIRAD signed the French national charter for research integrity in 2015, before adapting it in 2017 to fit around the ethical issues surrounding research for development partnerships. The charter is backed by the raft of legislative, regulatory and institutional rules governing professional activities, in particular, for scientific activities, the French *Code de la recherche*, and by international standards of behaviour. The establishment began operational implementation of the charter in 2019, by creating an Ethics and Research Integrity Office and an ethics watch committee. The Office contributes to national and

international debate on the promotion of research integrity. CIRAD conducts contract-based and partnership operations with numerous partner entities: private industrial and commercial firms, including transnational firms, donors and operators. Those partner entities are often, under certain conditions, essential players in the changes required for sustainable development. However, the relationship with those entities, in terms of how it works and the underlying principles, may sometimes appear to be at odds with CIRAD's strategy, partnerships and values, and thus merit reflection. The CIRAD staff members involved in those partnerships regularly make specific requests for clarification of the criteria and rules of engagement. The keys to assessing and deciding on requests from partners seen as "sensitive" are generally found at the junction between three factors - risks, values and issues.

The INRAE-CIRAD-IFREMER-IRD Committee on Ethics in Agricultural Research, a vital compass for CIRAD

The INRAE-CIRAD-IFREMER-IRD Joint Committee on Ethics in Agricultural Research was founded in October 2007 by CIRAD and INRA (now INRAE), with a remit to discuss, advise, increase awareness and if necessary raise the alarm. It extended its activities to include IFREMER in April 2016, and IRD in October 2019. It examines ethical questions raised by research activities and the research process in

the fields of food, agriculture, the sea, the environment and sustainable development, particularly those that concern the relationships between science and society. It has published 12 statements, available on our website. The latest concerns genetic modification of animals in the light of genome editing.



<https://www.cirad.fr/en/about-us/organization-and-governance/governing-bodies-and-committees>



CIRAD is the French agricultural research and international cooperation organization working for the sustainable development of Mediterranean and tropical regions.

It works with its partners to build knowledge and solutions for resilient farming systems in a more sustainable, inclusive world. It mobilizes science, innovation and training in order to achieve the Sustainable Development Goals. Its expertise supports the entire range of stakeholders, from producers to public policymakers, to foster biodiversity protection, agroecological transitions, food system sustainability, health (of plants, animals and ecosystems), sustainable development of rural territories, and their resilience to climate change. CIRAD works in some fifty countries on every continent, thanks to the expertise of its 1650 staff members, including 1140 scientists, backed by a global network of some 200 partners. It also supports French scientific diplomacy operations.

CIRAD is a public establishment (EPIC) under the joint authority of the Ministry of Higher Education and Research and the Ministry for Europe and Foreign Affairs.



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CIRAD is a founding member of:

