

Social-ecological system health: promoting sustainable relations between biodiversity, agriculture and health in territories

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Studies of global change provide ample scientific proof and facts bearing witness to the links between human, plant and animal health, biodiversity and ecosystem services. Many health crises have been caused by human activity within ecosystems, and the growing number of pandemics – particularly the Covid-19 crisis – has triggered a call for **integrated, so-called One Health approaches**, aimed at promoting “healthy animals, plants and humans within healthy ecosystems”.

In the early 2000s, the aim of the One Health concept was the early detection of emerging zoonoses, but it subsequently broadened to encompass their prevention, by reducing the risks of spillover from animals to humans and adopting integrated approaches that go well beyond the medical and veterinary sciences alone. Those “One Health” approaches, which recognize that the factors behind disease emergence are not just biomedical but also social, ecological, economic and cultural, have changed significantly in the past two decades. Their very objective has gone beyond controlling pathogens (notably zoonotic ones), to **guaranteeing health and wellbeing within resilient, sustainable ecosystems**. The disciplines and sectors called upon have gradually expanded to take greater account of human activity and of the links between species (both human and non-human) and ecosystems when addressing health issues.

The countries of the global South are the most vulnerable to global crises such as climate change, biodiversity erosion and pandemics. The concept of **social-ecological system (SES) health**, which considers the relations between players within a given territory, their activities, and human, plant, animal and ecosystem health, is central to CIRAD’s operations in those countries.

Key messages

- Prevention and early detection of pandemic risks is one of the specific aims of the One Health approach. However, disease emergence and zoonotic risks are inextricably linked to the multiple environmental and ecosystem impacts of human activities. **As well as prioritizing diseases, preserving biodiversity and natural balances** is therefore crucial for community and ecosystem health.
- The notion of **SES health (SESH)** – in line with the One Health approach – **provides an operating framework linking health with SES management**. That framework emphasizes the capacity of the system to guarantee the health of its various human, non-human and environmental components (eg water, soils and forests), thereby helping to address a range of complex, interlinked issues (such as biodiversity conservation, farming and food production) in order to build sustainable pathways in territories.
- The SESH framework involves **a territory-based redefinition of the notion of health** – a key stage in a process based on the principle of “shared health”, addressed in an interdisciplinary, intersectoral way by and for communities and players within those territories. It also means making the **co-definition of a territory’s problems** a priority, before going on to **co-construct solutions**. Participatory engineering can guide those processes and, as part of action research activities, support desirable, realistic change pathways.
- The SESH framework means **major changes in attitude and practices** on the part of stakeholders, to ensure better consideration of i) the different biological, social, economic and cultural dimensions of health and ii) the various perspectives and knowledge systems underpinned by those dimensions.
- **Living lab-type experiments** offer real opportunities for dialogue between science, policy and society at local level, to benefit the health of those territories. Such multi-stakeholder local platforms foster a sense of joint responsibility among stakeholders, smooth power relations (between stakeholders, but also between North and South), and facilitate solutions that are both applicable and applied.
- Agriculture plays a central role in many rural territories, in both socioeconomic and environmental terms. In some contexts, agrosystems, which often occupy vast swathes of agricultural land or rangelands, are the main drivers of biodiversity erosion, and can no longer be treated merely as production zones with no consideration for the health of the ecosystems/territories they occupy. Managing them sustainably, by means of approaches such as agroecology or holistic rangeland management, has the dual advantage of being productive while conserving biodiversity.
- On an international and national scale, the environmental dimension has not yet truly been included in One Health policy and governance, due to reluctance on the part of certain stakeholders, institutional bottlenecks and operating difficulties. **Improved dialogue between policymakers and local initiatives** involving stakeholders on the ground should enable the development on those scales of means and resource policies better suited to territorial requirements and constraints.

Preserving biodiversity to reduce the risks of disease emergence

In its first global assessment report¹, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) documented the current biodiversity crisis in detail. IPBES analyses the links between biodiversity and health as ecosystem services or disservices or, as per their new definition, as Nature's Contributions to People (NCP). Those contributions may be negative, if biodiversity is only seen as a source of pathogens that are harmful to humans, or positive, if substances resulting from biodiversity are likely to heal disease. While this approach does look beyond economic aspects alone, it is not enough to address the complexity of the links between biodiversity and health.

Direct functional links have now been established between the level of biodiversity and the risks of disease emergence. Under certain conditions, the multiple, complex interactions between a large number of species within an ecosystem (such as inter-species predation, competition or symbiosis) reduce pathogen circulation and thus the risk of new disease emergence, a process known as the "dilution effect"². Conversely, in a degraded ecosystem partially depleted in terms of species, pathogens can benefit from imbalances between host populations, which increases the probability of new human, animal or plant diseases appearing, and fosters their transmission to new individuals.

IPBES asserts that the underlying cause of disease emergence at the interface between wildlife, domestic animals and humans is the **impact of human activity on natural ecosystems**. In particular, land use changes to turn natural areas into farmland, and excessive freshwater harvesting, are two of the main factors in emergence³. On a global scale, human activities such as deforestation, unsustainable farming practices and soil artificialization have gone far beyond planetary limits, resulting in climate change and biodiversity erosion. Impacts on human, plant and animal health are just some of the possible consequences. In ecosystems modified or managed by humans, or SES, disease emergence is often triggered by an imbalance or functional breakdown in ecological dynamics. **Practices or social organizations misaligned with ecological processes can create the conditions for pathogen transmission (spillover) between species, which results in disease emergence.** Through projects such as EBO-SURSY⁴ or B-COMING⁵, CIRAD is actively contributing to a better understanding of how inter-species mechanisms result in disease emergence, and how biodiversity influences zoonotic risks.

Human and non-human animal health therefore relies on healthy SES, and preserving vital ecological processes is essential for protecting living organisms and their health. These principles are central to the **One Health approach**, defined in 2021 by the One Health High-Level Expert Panel (OHHLEP) as "an integrated, unifying approach that aims to sustainably balance and optimize **the health of people, animals, and ecosystems. It recognizes that the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent**". This approach is now widely recognized internationally to be essential to preventing pandemics, and has been rolled out in many contexts worldwide.

The PREZODE initiative

To draw lessons from the Covid-19 pandemic, CIRAD, along with IRD and INRAE, launched the PREZODE (PREventing ZOonotic Disease Emergence)⁶ international initiative in 2021. The initiative set out to reduce the risks of zoonotic disease emergence by means of a One Health approach, and to this end, promotes intersectoral cooperation between the human and veterinary health and environmental sectors, from a local to a global level.

The first operational phase of PREZODE is PREACTS (PREZODE in action in the global South), co-led by CIRAD and IRD and funded by the Agence française de développement (AFD). PREACTS' objectives include characterizing risks, co-constructing prevention and risk reduction strategies, developing integrated monitoring systems from community to national level, building capacity, and supporting public policy.

Assuming that **pathogen transmission is not limited to sanitary and biological processes**, the biology of organisms alone is not enough to explain and prevent the risks of disease emergence and spread. Social, economic and cultural factors are fundamentally important, prompting scientists to look at every aspect of health issues (in particular ecological, environmental, sociological and political aspects) in order to understand the mechanisms of disease spread.

1. IPBES, 2019
2. Keesing *et al.*, 2015
3. IPBES, 2019
4. EBO-SURSY project impact report available [here](#).
5. <https://bcoming.eu/en/>
6. Peyre *et al.*, 2021

Point 2 •

Health beyond disease risks

Health is not limited to the simple need to prevent or treat diseases. The World Health Organization (WHO) definition of human health includes a biomedical component, focusing on the absence of disease in human populations, and a more holistic component, focusing on mental health and wellbeing. That same definition can apply to wildlife and domestic animals⁷. Likewise, within a territory, the risks of disease emergence (which remain limited and episodic), and chronic and non-infectious diseases, are just one facet of human and non-human animal health. **The notions of wellbeing, good quality of life and guaranteed decent living conditions are a major part of good human and non-human health**, albeit intrinsically linked to sanitary aspects. The emphasis placed on health monitoring systems as part of the anthropocentric and safety-centred vision of health often dictated by the global agenda does not make it possible to fully address issues relating to human and non-human health or to that of the ecosystems on which those populations depend.

Similarly, environmentalist and conservationist approaches are not enough to **reconcile biodiversity preservation and its sustainable use**: it is also important to untangle the multiple, complex interactions between living species, and to **take the needs of human communities into account** to maximize the positive impacts of conservation initiatives on SES health. For instance, certain projects centring on protected areas led by CIRAD and its partners, such as ProSuLi [Promoting Sustainable Livelihoods in Transfrontier Conservation Areas [TFCAs] through SES Health]

or OLOH [One Limpopo One Health – see box], focus on striking a **balance between biodiversity and community wellbeing**, to anchor local development in its various components⁸.

Lastly, numerous human practices affect the health of different components (human, non-human and ecosystems), hence the absolute necessity of decompartmentalizing the debate. The question of pesticides, for instance, is a good example of the causal links between some farming practices and health components. Inappropriate use of synthetic pesticides, and their increasing use in the global South in particular, has major, widely documented negative effects not just on the health of at-risk human population groups (people in surrounding areas), but also on local biodiversity and soil quality. The worrying situation in some areas should prompt stakeholders to work together to develop alternatives, to address the various issues at play as effectively as possible. Promoting overall agrosystem health by means of agroecology is therefore central to the strategies rolled out by CIRAD to leverage better SES health.

The idea is therefore to **go beyond an anthropocentric vision of health**, to reconcile health and biodiversity conservation within resilient SES. This means steering national and international health research and development efforts (which currently focus heavily on health monitoring and on diseases that affect human societies and livestock) towards more territory-based initiatives that embrace a holistic approach, **at the nexus between health and biodiversity**.

7. Goulet *et al.*, 2024, under revision
8. Caron *et al.*, 2022

Point 3 •

Redefining health on a local level, through the lens of the expectations of SES stakeholders

On a theoretical level, the notion of biodiversity is intrinsically all-embracing, insofar as it includes all living species, without any distinctions, and **considers that their very existence is enough to justify their conservation**. It is obvious that such a notion **cannot be limited to threatened species or to species that provide humans with services**. While the One Health concept is globally relevant for recognizing and addressing the interlinkages between health and nature conservation, it is essential to **operationalize it by means of interventions on a local level**, suited to the specificities of the territory concerned (in the sense of a physical space in which human and non-human stakeholders co-exist).

In fact, disease emergence and biodiversity erosion are complex problems, with no blueprint or silver bullet, due to i) the absence of a universally shared definition

of those problems, ii) their reliance on several disciplines, knowledge systems and socioeconomic sectors, and iii) the need to address them in context, in ways specific to each situation or territory. This is the very definition of a “wicked problem”.

How, in the light of the above and in concrete terms, can animal, plant, human, ecosystem and more generally territory health be addressed simultaneously? To meet this challenge, one starting point is to **task each territory with defining its own health issues**, based on cultural perceptions, local knowledge and the socio-ecological representations of players within the territory. This is central to the **notion of SES health**⁹ – a conceptual framework and an important epistemological reference for the approaches rolled out by CIRAD in terms of health in the global South – and fits neatly into the One Health approach.

9. De Garine-Wichatitsky *et al.*, 2021

The SES health concept has two direct implications: on the one hand, it considers the **territory scale** as the most appropriate one for deploying transformative One Health approaches. On the other, it recognizes the need to start from **concerns specific to local communities**, and to tackle those concerns by means of a territory-based health approach. This means **working collectively to redefine the health of a territory** and pinpointing problems hand-in-hand with local players, by balancing the different dimensions and disciplines involved while fuelling dialogue with every type of available knowledge (eg scientific or traditional).

This is central to the approach CIRAD is proposing in its "Health & Territories" and "OLOH" projects (see

boxes), which are testing the way in which different states of health interact within a given territory, in an attempt to **reconcile farming practices** (market gardening, rainfed crop farming and extensive livestock production), **other services rendered by nature, biodiversity conservation, and human wellbeing**.

In many of its projects and operations, CIRAD promotes sustainable agrosystem management as a way of fostering human and non-human health and biodiversity. By redesigning agrosystem management based on local agricultural knowledge and experience and mobilizing agroecology and holistic rangeland management, it is possible to set territories on sustainable trajectories that are mutually beneficial for human, animal, plant and ecosystem health.

Point 4 •

Changing attitudes, methods and concepts: a prerequisite for all stakeholders

Rethinking health as a fundamental issue for territories requires a substantial change in methods and attitudes, on various levels^{10,11}. Firstly, **territory health is necessarily built collectively**. Seeing it as a shared asset represents a paradigm shift that challenges the normative framework and stakeholders' reference points. Achieving tangible positive impacts on the various forms of health therefore requires all stakeholders to change their practices. **Participatory action research or co-creation** approaches, implemented at grassroots level, enable the emergence of jointly-built solutions that fit with stakeholders' interests, requirements and capacities and are therefore more likely to be adopted long term.

To further these processes, **scientists also need to change their attitude**, to take greater account of local priorities, capacities and perspectives, different systems of knowledge and know-how, and different levels of temporality, bearing in mind the need to experiment over the long term while providing concrete solutions to local problems along the way. This requires researchers to take a resolutely **interdisciplinary** approach, relying on social sciences (economics, sociology, anthropology, and sciences of resilience and of sustainability) alongside biology and ecology. Beyond the scientific aspects, co-constructing research and interventions and their monitoring with other non-academic players means taking a resolutely transdisciplinary stance that shakes up conventional research practices and attitudes.

There is also a need to reorganize the entire range of stakeholders, their practices and their interactions, on various scales, from local to global. In particular, it is important to revisit the **governance of funding agencies** (which, like many other organizations, still operate in silos) **and how they fund and support**

projects, in the light of i) the inter-sectorality intrinsic to the One Health approach, ii) the territory scale as the main level of action, and iii) participatory and interdisciplinary approaches, which take place over long timescales.

Participatory approaches offer a range of methodologies and tools to foster dialogue and mutual understanding between stakeholders keen to share their thoughts on how best to manage health and biodiversity^{12,13}. So-called "living labs", which are increasingly being used by development players, are ideal participatory action research instruments for building solutions in favour of SES health. As a forum for experimentation and social prototyping, living labs are a way of organizing all the relevant stakeholders within a given territory – including decision-makers (on various scales: village leaders, mayors, ministry representatives, etc) –, whose governance and agenda are designed to:

- Identify and prioritize the issues affecting the SES;
- Analyse the potential causes and contextual elements that should be considered in order to decipher those issues;
- Pinpoint collectively the problems and factors to which the living lab should be giving priority. Those choices and the methodology used to identify them are crucial, since while the vision of the issue under consideration must be holistic, it is impossible to integrate every parameter;
- Propose and select solutions to be tested jointly (avoiding the pitfall of researchers providing preconceived solutions);
- Encourage collective learning, by consistently reviewing the solutions adopted.

10. Binot *et al.*, 2015

11. Duboz *et al.*, 2018

12. Binot *et al.*, 2015

13. Duboz *et al.*, 2018

14. Without being exhaustive, those stakeholders include small-scale producers (crop farmers, transhumant pastoralists, livestock farmers), local communities, local authorities (village leaders, mayors, district leaders, etc), decentralized technical service managers and community human, animal and environmental health auxiliaries, NGOs, research organizations and local universities and, if there are any, One Health platforms or representatives from the country concerned.
15. The ImpresS (Impact of Research in the South) approach developed and implemented by CIRAD serves to co-build plausible impact pathways with the players involved in interventions, and to define change-oriented monitoring and evaluation systems for those interventions.
16. Bourgeois *et al.*, 2023

The Health & Territories project

Health & Territories, a project funded by the Agence Française de Développement and the European Commission, relies on living labs focusing on the rural world in four countries (Senegal, Benin, Laos and Cambodia). Its aim is to work with the entire range of local or external stakeholders involved in territories¹⁴ to explore the conditions and modalities for a concerted, realistic agroecological transition. The project has identified factors that limit agricultural production, allowing stakeholders to find levers for action and solutions likely to improve production and consequently the daily lives and wellbeing of local communities, hence contributing to the health of the SES.

The OLOH (One Limpopo One Health) project

The **OLOH project**, funded by the Agence Française de Développement and the Fonds Français pour l'Environnement Mondial, aims to promote the health of one particular SES in Mozambique: a buffer zone on the edge of the Limpopo National Park characterized by human/wildlife and human/human conflicts that significantly affect rural communities in the zone. OLOH is using anticipation to negotiate a vision of the territory shared by all SES stakeholders trying to reconcile biodiversity conservation and human wellbeing, and combining it with participatory approaches to support multi-stakeholder, transdisciplinary governance of the buffer zone, at the nexus of issues such as biodiversity, health and agriculture.

Along the way, such projects are revisiting the position and role of research in participatory approaches aimed at preserving positive links between health and biodiversity, and the compromises required. While research must adopt a neutral stance in the decisive stages

of prioritizing problems and identifying solutions, it remains important to fuel debate within living labs with **scientific knowledge and evidence** relating to the various issues addressed. This is one of the fundamental roles of research in an open science perspective. That knowledge provides factual elements for reflection, and supports the co-construction of solutions.

A long timescale is a prerequisite for living labs: it is essential for building **trust between stakeholders** and ensuring the **legitimacy of the process**. To guarantee a satisfactory level of participation and address in depth all the dimensions involved (technical, societal, cultural, economic and political), sufficient time must be allowed for consultation, in a transdisciplinary context, within long-term observatory settings in which stakeholders and researchers share both worksites and opportunities to interact. For example, in the Cambodia component of the Health & Territories project, the mobilization of stakeholders within a living lab, the formulation of the central issue (soil and water quality) and the definition of a related action plan represent the culmination of more than a year's co-construction work.

Successful transdisciplinary approaches rely on **using participatory tools and methods**, whether generic (eg role play or forum theatre) or specific to health, such as the "One Health fresco", which serves to illustrate the interlinkages between the various dimensions of health and helps stakeholders integrate those dimensions into their trajectories and practices. Lastly, since experimentation quickly proves to be both time-consuming and costly, scenario building approaches (eg foresight or companion modelling), including participatory exercises, and *ex ante*¹⁵ impact pathway construction are effective ways of exploring possible futures collectively and making informed choices, while strengthening the position of entities and individuals as major stakeholders in the future of their territory¹⁶.

Point 5 • The nexus between health and biodiversity: a question of governance

Within living labs, mapping the problems that players encounter (hence future actions) is highly dependent on their **system of representation: the choice of players and entities involved in the platform** is therefore key to the success of the participatory approach to be implemented. Furthermore, it must tally with the normative governance systems (from local to national) in a position to legitimize the process and the choices to be made.

Bringing participants together is merely the first step. Jointly embarking on participatory territorial health

management approaches then means co-constructing **harmonious governance modalities tailored to stakeholders' expectations and to the objectives being pursued**. This means defining operating rules between stakeholders, managing power relations, facilitating the inclusion of all, building and overseeing ad hoc governance structures, and working on their sustainability. Throughout those processes, it is essential to work on the place and empowerment of invisible or voiceless stakeholders and to recognize their traditional knowledge and knowledge systems.

In terms of governance, **data management and sharing** still raise sensitive issues. Questions as to the nature, quality, ownership and terms of use associated with these data often crystallize differences in vision, resources or capacity. This is particularly true and must be kept in mind in the case of interventions based on the One Health approach, which may involve the transmission of data between sectors and stakeholders (from small-scale producers to major pharmaceutical

groups) whose status, constraints and objectives are sometimes diametrically opposed. From living labs to major multilateral treaties, the role of each and every player in the data cycle (from collection to application) and the **conditions for sharing the corresponding benefits must be discussed up front, including co-building rules** that resolve as far as possible the tensions between treating stakeholders equally and guaranteeing environmental justice.

Point 6 •

From local to global: co-experimenting agro-ecosystem health and biodiversity to inform public policy and One Health governance

The operational rollout of One Health transdisciplinary and ecosystem approaches must avoid several pitfalls linked to systemic mismatches, as demonstrated by the malfunctions observed with certain community-based natural resource management projects¹⁷.

The first mismatch in terms of organizing One Health international governance concerned the lack of appropriate institutional representation on an international level to address environmental and biodiversity conservation issues¹⁸. CIRAD has been working for many years to **put environmental aspects at the centre of health issues** and to highlight the societal and political implications of underlying scientific evidence. As far back as 2020, a group of scientists led by researchers from CIRAD was already calling for an alliance between the United Nations Environment Programme (UNEP) and the tripartite coordination body formed in 2010 by FAO, OIE/WOAH and the WHO¹⁹, an alliance that was formalized in March 2022 following the Covid-19 pandemic. This expansion to a quadripartite alliance was rapidly followed by a new, fully integrative definition of the One Health concept, proposed by OHHLEP in 2021²⁰, and the drafting of a roadmap for the operationalization of the One Health joint plan of action (2022-2026).

On the national level, for reasons of historical contingency, the environment sector and issues relating to biodiversity conservation have not been (or have scarcely been) included in national One Health platforms. Without actually being absent, this key dimension has previously been largely overlooked – a challenge made all the greater by the fact that the diversity of stakeholders in the environmental health sector is far greater than in the human or animal health sectors. Through its second pillar, “Co-design solutions to reduce the zoonotic risk”, the PREZODE initiative (see box) is advocating for greater inclusion of the environmental dimension in international and national frameworks.

The COHESA project

The COHESA (Capacitating One Health in Eastern and Southern Africa) project being implemented jointly by ILRI, CIRAD and ISAAA supports the institutionalization on a national level of the One Health approach in 12 African countries. In particular, COHESA aims to work with stakeholders to build strategies for integrating the environmental health sector into national One Health governance²¹. Its work notably consists in mapping stakeholders in the national landscape, implementing a strategy for convincing them to join One Health initiatives, and persuading current stakeholders in One Health initiatives of the need to include them²².

However, the One Health approach is not yet sufficiently capacitated on a national level. The effective implementation of SES health approaches is likely to be dysfunctional, due to a **“scale mismatch” between the scales on which governance operates and that on which the ecological, social and epidemiological processes** those approaches are intended to control and regulate occur²³. Human and veterinary health services and pathogen surveillance systems are traditionally highly centralized, whereas the emergence and early control of pathogens happens, at least initially, on very local scales. This is why the territory scale is the primordial scale on which collective action in favour of SES health should be taken. In a truly integrative One Health approach, State support to help stakeholders with that implementation is a major prerequisite, which can take the form of decentralized services or merely benevolent participation in local initiatives such as living labs. The articulation between the territory scale and those leading up to the national scale therefore remains a key area for research, to strike a good balance between top-down guidance from international frameworks and guiding the national and local levels on the one hand, and

17. Cumming *et al.*, 2006
18. Essack, 2018
19. De Garine-Wichatitsky *et al.*, 2020
20. Mettenleiter *et al.*, 2023
21. On this topic, see also the contributions to the Hwange conference, which clearly illustrate the diversity of the environmental sector (Hwange Conference – YouTube)
22. Richards *et al.*, 2024
23. De Garine-Wichatitsky *et al.*, 2020

territorial experiments to fuel debate on the implementation of the One Health approach on higher levels on the other.

With the help of its expertise in this approach, its knowledge of the levers for its success, its limitations and the major challenges facing it, and of its experience of science-decision dialogue with countries in the global South, CIRAD aims to i) integrate the

environment and ecosystem dimension into territorial participatory action research conducted within the framework of SES health (Health & Territories, ProSuLi and OLOH projects – see boxes), and ii) promote its full institutionalization on a national (One Health platforms) and international level (pandemic treaty under negotiation).



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Recommendations

- 1 • Boost the participation and capacity of local stakeholders and local communities, and the involvement of the public authorities, in integrative “territory health” and “SES health” projects designed to preserve biodiversity and human-nature interactions while preventing epidemic risks.
- 2 • Allow for different timescales and attempt to reconcile them: while continuing to invest in the production of knowledge through research over the long term, the urgency of crises makes it necessary to design and roll out rapidly operational solutions, within territorial participatory action research initiatives. The success of such projects also relies on building long-term, trust-based partnerships sustained by effective intermediation and monitoring-evaluation systems.
- 3 • **For research:** Research must change its posture and abandon the comfortable position of providing unbiased expertise (from the global North) from outside the system it aims to guide, so as to reconcile a holistic vision of the problems, priorities and solutions with the expectations and requirements of those stakeholders most vulnerable to crises (eg pandemics, climate events and soil, air and water quality degradation).
- 4 • **For donors:** Accepting the SES framework and putting local priorities centre-stage is crucial to the impact of projects. To this end, resolutely participatory, adaptive and inclusive processes are key. Initiatives should therefore be built and structured gradually, and supported over the long term. Allowing for flexibility in terms of project appraisal schedules, funding allocation and disbursement would be decisive in fostering such approaches and tailoring interventions to territorial requirements and resources.
- 5 • **For decision-makers:** To achieve its full potential, the One Health approach must be tested on a territory scale and then implemented on other appropriate scales, according to the priorities, capacities and resources of the stakeholders concerned. To ensure greater inclusion of the environmental dimension in One Health policy, more sustained dialogue between local initiatives and national decision-makers should help to overcome any reticence and co-build suitable national and multi-lateral policies.

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Contributions (alphabetical order): Servane Baufumé, Aurélie Binot, Alexandre Caron, Raphaël Duboz, Michel de Garine-Wichatitsky, Jean-Paul Laclau, Thierry Lefrançois, Sélim Louafi, Antoine Lury, Marisa Peyre

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Contact

Servane Baufumé, International Affairs and
Science-Policy Officer – Biodiversity – One Health
servane.baufume@cirad.fr



42, rue Scheffer
75116 Paris
France

