



COMMISSION ON PHYTOSANITARY MEASURES

EIGHTEENTH SESSION

INTERNATIONAL PLANT PROTECTION CONVENTION (IPPC) ROLE AND CONTRIBUTIONS TO ONE HEALTH – HOW TO POSITION IPPC IN THIS SPACE?

AGENDA ITEM 16.1

(Prepared by a drafting group drawn from the Strategic Planning Group)

Introduction

- [1] The Commission on Phytosanitary Measures (CPM) and the Strategic Planning Group (SPG) have had ongoing discussions about the One Health concept over the last few years. To date, these have largely been exploratory discussions aimed at improving our collective understanding of what One Health is about and what role, if any, the IPPC community and plant health can or should play in the One Health paradigm.
- [2] Most recently the SPG considered the matter again and agreed that there were compelling reasons for the IPPC community to be engaged in the ongoing One Health dialogue and programme planning at the Food and Agriculture Organization (FAO). The CPM chair prepared an in-depth analysis of the One Health concept from a historical perspective and the ramifications of not getting involved from a plant-health standpoint (Annex 1). It was agreed that CPM should be briefed on this topic of One Health at its next meeting in 2024 and a specific proposal made about what, if anything, the IPPC community should do to position itself in the broader One Health space.
- [3] This paper provides some basic information to help inform the CPM about One Health and current IPPC Secretariat activity in this area, and suggests some potential actions, directions and objectives for the CPM to consider.

What is One Health?

- [4] The following points help define the One Health paradigm:
- One Health is a collaborative, multisectoral and transdisciplinary approach – working at the local, regional, national and global levels – with the goal of achieving optimal health outcomes.
 - One Health recognizes the interconnection between animals, people, plants and their shared environment, and the importance of this to the health of all components because of interdependencies.
 - Effective One Health relies on a cross-sectoral and collaborative approach, which means partnering with different governmental entities, research partners and private entities to protect agricultural and natural resources.
 - The One Health strategy is distinct in taking into account the interplay of humans, animals and the natural world; how a pathogen behaves and moves between environments, habitats, and commercial and other pathways; and what can be done to interrupt the chain of spread and impact of a given pathogen.
 - Health emergencies may include pest outbreaks, natural disasters, and cyclic peaks of pest prevalence.

How has plant health been considered within the One Health concept to date?

- [5] The attached discussion paper describes how plant health has, to date, not received the same high profile as animal and human health within the concept of One Health. More recently, the One Health community has brought the “environment” into the picture (but not plant health specifically). This paper, presented to the SPG in October 2023, elaborates on the reasons why. It also notes that this situation is beginning to change based on an increased awareness of those involved in One Health and in plant health and that, because of this changing position, it is advisable for the IPPC community to engage proactively at the present time. By engaging more actively in the One Health concept, the opportunity exists for the IPPC community to leverage resources and intelligence from the other disciplines, which may enhance the IPPC community’s capacity to achieve its overarching plant-health objectives.

Recent activities by the IPPC secretary

- [6] The IPPC secretary had the foresight very early on to recognize the importance of raising the profile of plant health and, through his leadership, several related activities have already taken place. The secretary has engaged with One Health representatives within FAO and in several other organizations. He has also arranged for a keynote IPPC presentation to be made at the Eighth World One Health Congress in 2024 and is exploring the option of adding a side session at the congress on plant health in the One Health concept. Going forward, the secretary will look to the CPM for assistance in defining the messaging and direction needed for his presentation and communications at the World One Health Congress.

What more is needed from an IPPC standpoint?

- [7] A key point of consensus so far, reached at the SPG, is for the IPPC community to avoid creating any new initiative or programme specific to One Health. Resources are too limited within the IPPC secretariat to embark on some new differentiated enterprise. This is not necessary. Rather, the approach that many prefer to see is that the IPPC community identify and communicate the work it is already doing that directly supports and contributes to global One Health outcomes. Examples of IPPC work include the following:
- Through the development and implementation of International Standards on Phytosanitary Measures (ISPMs), recommendations and guides, contracting parties and the rest of the IPPC community are in a position to prevent the introduction and spread of plant pests that could have negative impacts on human, animal and environmental health.
 - Implementing the IPPC Strategic Framework further augments the IPPC mission of protecting plant health and natural resources against plant pests and hence increasing agricultural productivity and food security, enhancing the production of animal feed, improving environmental protection, and ultimately contributing to One Health.
 - Conducting IPPC surveys designed to determine the extent of antimicrobial usage in the phytosanitary context will help to ultimately address potential antimicrobial resistance, thereby contributing to One Health.
 - Controlling certain pests, such as those that produce mycotoxins, can not only benefit plant health but also prevent or significantly reduce their transmission to animals and humans.
 - Activities aimed at preventing the introduction and spread of pests contribute to reductions in the use of pesticides, thus contributing to human and environmental health.

Potential objectives in the plant-health context

- [8] The overall objective of increased IPPC engagement within One Health would be to achieve recognition, through communication of a consistent message at the international and national levels, that the IPPC’s mission and goals are fully interconnected with the overall goal and principles of One Health. By safeguarding the world’s plant resources, the IPPC community (including the IPPC Secretariat, national plant protection organizations and regional plant protection organizations) are

contributing directly to ensuring global food security, feeding animals, protecting the environment and, in sum, fostering a safer, healthier planet and society.

- [9] **Coordination and collaboration** are key. Which are the most relevant partners and entities that have an overlapping interest in safeguarding plant resources from pest threats that may be circulating in the environment or emerging from the agricultural sector? In which areas could one discipline benefit from greater awareness of research already conducted in another area (e.g. splash-dispersal of pathogens, the role of vectors)?
- [10] An important objective of the One Health strategy is to build a comprehensive and effective One Health **early-warning system** to potentially prevent or limit the next adverse health event (e.g. outbreak and spread). What is already being done to strengthen global, regional and national surveillance systems? An early-warning system that comprises all component subjects of One Health (i.e. humans, animals and plants) would result in efficiencies, potential economies of scale, and consistent information flow, data management and analysis, such as through the evolving “artificial intelligence” machine-learning approaches, and would allow emerging linkages between the component subjects to be more readily identified.
- [11] One Health relies on the development and application of new innovation aimed at early detection of emerging pathogen threats and at enhancing preparedness and response to these events. What new tools and innovations are needed in the early detection and response toolbox? In particular, the rapidly developing technology of artificial intelligence may provide distinct benefits for One Health, particularly in supporting interaction among the different disciplines and in identifying emerging factors in one discipline that are important to others. Examples of activities could include rapid screening of bioactive plant compounds for potential pharmaceutical application, scanning for reports of antimicrobial resistance in all disciplines, scanning research papers and identifying papers of interdisciplinary application; scanning reports from a One Health early-warning system for potential implications of disease developments in other areas; linking environmental trends resulting in health changes in one area (e.g. plants) to the potential for health changes in others (e.g. animals); and accelerating literature reviews, cross-referencing for pest risk analyses and identifying cross linkages within One Health.

Decisions sought from the CPM

- [12] Based on the recent and current situation as described above and in the discussion paper in the annex, and the evolving viewpoints on the importance of plant health in the context of One Health, the chair of the CPM believes that the IPPC community should seize what appears to be a good opportunity to engage fully with the One Health leaders and to advocate for the importance of plant health for One Health. With this in mind, several proposed CPM decisions are presented below.
- [13] The CPM is invited to:
- (1) *establish* a focus group on plant health in the context of One Health to develop recommendations and outputs for CPM consideration in 2025, as described in the attached draft terms of reference found in CPM 2024/31_01.
 - (2) *agree* that the focus group, in the course of its analysis, consider the merits of:
 - devoting an International Day of Plant Health to One Health in the near future,
 - developing a One Health component to the IPPC Communications Strategy, and
 - options for appending a One Health component to the IPPC Strategic Framework;
 - (3) *approve* the terms of reference for this focus group found in Attachment 1 to this paper CPM 2024/31_01.

- (4) *note* the secretariat action to organize a CPM side session on One Health for CPM-19 (2025) to continue informing CPM members and soliciting CPM input and views towards refining IPPC plans and objectives in the One Health space; and
- (5) *note* the secretary's arrangements to represent the IPPC community and present a paper at the Eighth World One Health Congress in 2024, with the paper outlining the benefits and importance of developing a coordinated One Health early-warning framework that would include human health, animal health and plant health reporting and enable the identification of emerging pathogens of broader concern and the potential application of artificial intelligence in this regard.

ANNEX 1: UPDATED VERSION OF STRATEGIC PLANNING GROUP (SPG) 2023 DISCUSSION PAPER

THE FUNDAMENTAL IMPORTANCE OF PLANT HEALTH TO ONE HEALTH¹

(Original version prepared by the CPM chairperson; updated by the SPG drafting group)

Abstract

- [1] Linkages between One Health and plant health may be perceived by some members of the plant-health community with some uncertainty and a feeling that there may not be a strong relationship between the two. Zoonoses have been the key driver for One Health. However, if One Health is intended to maximize the health of all species, good plant health is a fundamental component of One Health.
- [2] The One Health definition makes direct reference to human and animal health but, for the most part, relegates other factors to “the environment” or “ecosystems, although more prominent references to plants are emerging in some influential areas. However, plants and plant health are most frequently not specifically identified. Yet the One Health community would benefit from enhanced efforts to protect plant health. Without plants there simply is no “environment”.
- [3] Plants provide nutrition and energy and are essential in reducing hunger. They capture carbon and provide oxygen, provide other key ecosystem services, and efforts to maintain plant biodiversity will support the maintenance of a range of antibiotics and other medicinal compounds in the future.
- [4] There is no drawback to identifying plant health more prominently as part of One Health. By doing so the One Health approach would be strengthened significantly, to the benefit of all. In addition, a more effective and innovative approach to One Health may be realized by capitalizing on collaboration by experts from diverse fields and interdisciplinary cooperation.
- [5] The general absence of specific inclusion of plant health in the One Health concept may result in limitations in related decisions. If the focus of decision-makers is increasingly drawn to One Health, and plant health remains a secondary consideration, decisions taken by those in key leadership positions may not fully take into account the importance and needs of plant health.
- [6] If plant health is to be positioned more prominently within the One Health concept, effective advocacy and communications must be developed, and intended recipients representing the key decision-takers must be identified. Based on recent work conducted by the governing bodies of the quadripartite partnership (Food and Agriculture Organization (FAO), World Health Organization (WHO), World Organisation for Animal Health (WOAH) and the United Nations Environment Programme), there currently appears to be a good opportunity for the International Plant Protection Convention (IPPC) community to engage more actively in One Health activities and related advocacy.

1. Emergence of the One Health concept

- [7] One Health is described by WHO 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 intricately linked and interdependent. (WHO, undated)
- [8] As the concept of One Health has developed since the 1990s, relevant linkages to plant health appear to have been perceived as tenuous and approached by some members of the plant-health community

¹ SPG participants may wish to review three discussion papers submitted to the SPG 2022 meetings, available at <https://www.ippc.int/en/core-activities/governance/strategic-planning-group/2022-spg/> and also the related components of the report of the 2022 SPG meeting, available at https://assets.ippc.int/static/media/files/publication/en/2022/12/SPG_Oct_Report_2022.pdf

with uncertainty, with some holding the view that there is not a strong relationship between One Health and plant health. This seems to have occurred because of the early and continued One Health focus on the relationship between animal and human diseases represented by zoonotic pathogens, coupled with the fact that plant-related pathogens directly equivalent to zoonotic pathogens are rarely identifiable (in a pathological and target-host sense). Although some opportunist human and animal pathogens that are economically important plant pathogens are documented by Thornton and Wills (2015), the authors also note that “of the 5.1 million species of fungi that are believed to exist, only a handful cause [both] human and plant infections”. More commonly, some plant pathogens such as *Fusarium* spp. and ergot (*Claviceps* spp.) may have toxic or carcinogenic effects on mammals that consume them and others may cause allergenic or immunological problems or result in enteric infections of mammals (Andrison, Montarry and Fournett, 2022). Linkages between the environment (in the direct context of plant health) and human health have begun to be identified (Council of Canadian Academies, 2022; Geoffrey *et al.*, 2013), although little work seems to have been conducted or reported on this. In addition, some comments have recently been made to the author by plant-health officials regarding potential allergenic aspects of plant pests (and some plants).

- [9] Evidently, the One Health concept has its origins in work involving human-health and veterinary practitioners but not plant-health professionals. Morris *et al.* (2022) highlight novel diseases that emerged in the 1970s, including HIV and SARS, that raised a focus on the conceptual framework for the emergence and dynamics of humans and animals. The avian influenza, and similar zoonoses of the late 1990s and early 2000s that developed into human-health threats globally, made it urgent for public-health and veterinary officials to work together to consider new strategies and a framework for identifying and containing diseases at the livestock and wildlife level in order to prevent their expansion into the human population (Greifer, personal communication). These zoonotic events are understood to have been a key driver for the emergence of the One Health concept at WHO and the Food and Agriculture Organization (FAO) at that time. In addition, WOA (then known as the Office International des Epizooties or OIE) worked closely with FAO and WHO to contribute expertise and provide global monitoring systems to help identify emerging disease risks in the animal sector.
- [10] In relation to this, it appears that the term “One Medicine”, representing a unified approach against zoonoses that involves both human and veterinary medicine, may have been one origin for One Health (Centers for Disease Control and Prevention, n.d.) and this is readily reflected in the current scope and definition for One Health. The recent COVID-19 pandemic and the potential linkages to animal origins may also increase the focus on zoonoses and diminish considerations of plant health.

2. Evolution of the One Health concept

- [11] The scope of One Health has since evolved further to include considerations related to risks to human and animal health from the development of antimicrobial resistance, particularly related to the use of antibiotics/bactericides. In order to consider the relevance of this to plant health, the IPPC Secretariat undertook surveys of contracting parties to the IPPC to determine the extent of antibiotic use in plant health. The findings confirmed that antibiotics are used only in very low comparative volumes, with a narrow spectrum of products identified.
- [12] Craddock and Hinchcliffe (2015) describe One Health as “an integrated response to shared or interspecies health concerns”. It appears, therefore, that One Health has evolved to encompass other critical dimensions of environmental life that are necessary for animal and human health and survival. That environment requires the presence of plant species and provides plant resources. If, as it seems, One Health is intended to be considered as a holistic approach to maximize the health of all species and not exclusively focused on zoonotic threats, it should be clear that good plant health is fundamental to human and animal health, not least because of the role plants play in converting sunlight energy, through photosynthesis, into important sources of staple foods for humans and animal populations. Human and animal life itself is fully dependent on plants and a corollary, therefore, is that human health may be negatively affected by negative impacts on plant health (Andrison, Montarry and Fournett, 2022).

3. Where is plant health positioned within One Health?

- [13] As noted by Gray and Wakie (2022), One Health is a collaborative concept that acknowledges that the health of people, animals and the environment are linked. This reflects the WHO definition, which focuses on “the environment” rather than making reference to plants and plant health specifically. In 2021, the WHO’s One Health High-Level Expert Panel defined One Health as “an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems”. The panel (OHHLEP, 2021) did continue to recognize that “the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent”. However, this definition, with such a broad reference to “ecosystems”, diminishes the key role that plants and plant health play within a One Health approach, as noted by Hoffman *et al.* (2022) and references cited in their paper. Loose definitions making reference to “the environment” or “ecosystems”, when included in statements containing direct identification of, and comparison with, humans and animals, are so vague that most readers are likely to focus on the identified organisms rather than considering what may be included in the terms “environment” or “ecosystem”. Realistically, both of these broad terms should be considered to include all living organisms within a given biological or environmental system (i.e. “ecosystem”) anyway. The outcome of these vague references is that plants and plant health are seemingly not specifically considered as a critical keystone component of “the environment” other than by those who work in plant health. As Andrivon, Montarry and Fournett (2022) noted, “the One Health framework as it now stands leaves no real place for plants as organisms with their own health concerns”. This missing reference to plant health equates to a missed opportunity for the One Health community to benefit further from enhanced efforts to protect plant health that could further support and advance a truly holistic and more effective approach to global health (Greifer, personal communication). In addition, as Morris *et al.* (2022) note, although there is very little overlap in efforts to control plant diseases and diseases infecting humans and animals, plant pathology has much to learn from One Health; the reverse may also be true as elaborated on by Andrivon, Montarry and Fournett (2022).
- [14] In considering further what is meant by “the environment” when used in such definitions, it appears that it is simply a catch-all term to express “everything else”, again suggesting that, in One Health, human and animal health are the key considerations and everything else is incidental. Yet humans and animals can only exist in a broader environment and their corresponding health is a result of the conditions that prevail in that environment. And any habitable environment is based on the presence of healthy plants; so the environment in which we live relies on the presence of plants. Without plants there simply is no “environment” and certainly not a sustainable environment.
- [15] At the Strategic Planning Group (SPG) meetings in 2021, a discussion paper provided by Argentina commented that it “would be important and fruitful to instill ... the notion that the concept of One Health should be understood from the health of its three main components: humans, animals, and plants” (Argentina, 2021). Plants have also been recognized more clearly in some emerging communications and related plans, most notably in the definition, vision, goals and related considerations put forward by the quadripartite governing bodies (FAO, UNEP, WHO and WOA, 2022). However, plant health as a specific consideration remains mostly absent from the high-level actions and “action tracks” presented. Nevertheless, this action plan clearly recognizes the significant interconnectedness inherent in One Health and is a significant advancement for plant health in that context. Not least, it suggests that we may be at a turning point and that the IPPC community should take this opportunity to engage fully.
- [16] It has become clear that One Health is the present *lingua franca* of decision-makers in several institutions, including FAO. Notably, FAO includes specific references to plants in its general definition of One Health on its website (FAO, n.d.(a)). However, the FAO’s publication *National framework for One Health* (Bhatia, 2021) refers to plants only twice in its 60 pages, and both these references are included in graphics only; there is no related discussion at all on plant health beyond vague references to “environment management” and instead a complete focus on zoonoses. The importance of One Health to such institutions is so significant that it is reflected in budgets and considerations for organizational structures in some cases and yet there is little to no regard for plant health in this

approach. Andrivon, Montarry and Fournett (2022) commented that, in their literature search on the subject of One Health, despite a large number of papers identified (3,841 papers), only two of these related to plant science and only one of 252 review papers taken from that group made reference to plant health at all. Plant-health management is largely excluded from One Health (Andrivon, Montarry and Fournett, 2022; Rizzo *et al.*, 2021). Even Craddock and Hinchcliffe's (2015) paper, despite appreciating "the will to address the complexities and interrelations that exist between human, animal and ecological health" and recognizing One Health as a "call for inter-disciplinarity, and the general alignment of health and other concerns", makes no reference to plant health at all. Tellingly, Craddock and Hinchcliffe also criticize the fact that their discipline of "social science is largely relegated to communication" and recognize the "top-down assemblage" of science expertise and disciplines which is founded in human and animal health, and which minimizes the importance of all other relevant disciplines.

- [17] Given all of this, despite the environment being one of the components of One Health as it is currently presented, the protective aspects of One Health focus only on the human and animal aspects, not the environmental ones, and so not only are plants not considered specifically as part of One Health for their benefits, they are seemingly not considered from a disease prevention (or plant protection) standpoint either. However, for One Health to be genuinely effective and encompassing, it must include plant health specifically as a core component.

4. Making the case for including plant health as a key foundation of One Health

- [18] The remainder of this paper argues that plant health should be included specifically and prominently in concepts of One Health, indeed on an equal standing with human and animal health. However, an important implication of the foregoing is that gaining appropriate recognition for the role of plant health in One Health will be challenging to say the least.

- [19] As Rizzo *et al.* (2021) note: "plant health is vital to sustain human and animal health and a critical component of the complex interactions among the environment, humans, and animals". Some salient points on plants and plant health and the dependencies of humans and animals on plants include the following key linkages:

- Over 80 percent of human food energy comes from plants (Rizzo *et al.*, 2021), whether directly as plant-based food and indirectly after being converted through digestion by animals. Crop losses to pests can therefore cause hunger and death through lack of food and also economic losses that may lead to reduced resources to produce, harvest, store or procure food. The need for plants is not limited to energy intake, but also includes nutrition in the form of essential vitamins and minerals which can be derived from ensuring that a diverse range of plants are included in food sources. The primary source of nutrition for livestock is plants (Rizzo *et al.*, 2021). Plant fibre also has an important use in clothing and timber for building materials.
- Some causal relationships between the environment in the direct context of plant health and impacts on human health have been determined. An interesting study of potential linkages between plant health and human health was conducted in Windsor, Ontario, Canada, to determine the causality of increased mortality of humans resulting from cardiovascular and lower-respiratory-tract illnesses based on the prevalence of emerald ash borer. The authors of the study identified a causal linkage (Geoffrey *et al.*, 2013) and communicated that this finding adds to the growing evidence that the natural environment provides major public-health benefits.
- Almost all oxygen is provided by plants. They also help regenerate soil, filter water, and fix carbon (Council of Canadian Academies, 2022).
- It is expected that numerous, naturally occurring, bioactive plant compounds – as yet undiscovered – that may help in the management of human diseases in the future reside in biodiverse plant settings (and advances in "artificial intelligence" may facilitate more effective, targeted screening of these).
- Similarly, the potential for transgenic plants to serve as "factories" for the production of biopharmaceuticals for human and animal use has been identified (numerous references, e.g. Giddings *et al.*, 2000; Kermode, 2006). If such approaches are used for large-scale

biopharmaceutical production, protecting the health of such crops will be a vital aspect in protecting the health of the humans and animals that may rely on those biopharmaceuticals.

- Plants provide a natural form of carbon capture and, particularly in young, forested areas, provide an important net carbon sink. These aspects are an essential component of efforts to limit the volume of carbon dioxide in the atmosphere;
- In a climate in a warming trend, the cooling effects of a healthy urban tree canopy will become more important. A healthy tree canopy will also support the Northern Hemisphere's albedo.
- As climate change evolves, the impacts on human and animal health are expected to increase in severity, increasing the importance of protecting plant health to mitigate such effects.
- The use of certain chemicals to control plant pests may have deleterious effects on the environment or mammals (Hoffmann *et al.*, 2022). It is also apparent that some treatments, such as fumigation, may be applied on a precautionary basis irrespective of whether the pest of concern has been confirmed to be present or not.

[20] Summarizing the above, the high-level linkages include the role plants play in providing adequate nutrition and reducing hunger. They capture carbon and provide the oxygen we breathe (which is of self-explanatory importance) and maintaining plant biodiversity will be key to maintaining an arsenal of antibiotics and other medicinal compounds in the future.

[21] An ironic aspect of One Health and its relationship to plant health is that impacts on plant health are mostly driven by human activities (Andrison, Montarry and Fournett, 2022), whether directly by spreading pests through international trade, the planting of susceptible or already infected crops (with some notable historical examples), reduced biodiversity, or more prevalent planting of monocultures, or indirectly such as through the impacts of climate change; and yet the more damage to plants that occurs, the more negative impacts on human and animal health that will arise on a compounding basis. Despite all the advances in modern plant pest and disease control, plant pests and diseases presently cause losses of up to 40 percent in growing food crops (Anon., 2021; Richard, Qi and Fitt, 2022; and numerous online sources), becoming more significant – up to 50 percent – when post-harvest losses are also accounted for (Thornton and Wills, 2015).

[22] Andrison, Montarry and Fournett (2022) point out that “there is no essential difference in the way animal/human health and plant health issues are dealt with”, with the implication being that including plant health specifically in the concept of One Health, on at least the same footing as human and animal health, will at the very least uphold the existing approaches to pest and disease prevention and management that are currently embodied in One Health. Therefore, they continue, there is no drawback to identifying plant health specifically and increasing the focus upon it; on the contrary, by doing so the One Health approach would be strengthened significantly, to the benefit of all. Such a relationship should be seen as a prerequisite for One Health (Andrison, Montarry and Fournett, 2022). Of interest is the observation cited by Hoffmann *et al.* (2022) that a more effective and innovative approach to One Health may be realized by capitalizing on synergies relating to plant health, not least through collaboration by experts from diverse fields. Andrison, Montarry and Fournett (2022) also identify the need for interdisciplinary cooperation as a factor in addressing One Health challenges, while noting that, despite the similarities in health-management solutions in many aspects of human, animal and plant health, the literature on these subjects is rarely cross-referenced. The application of expertise in plant pathology to human enteric diseases is outlined by Brandl (2006), who describes how plant pathology has helped to develop scientific methodologies and key concepts in microbial ecology that have provided a platform on which to formulate hypotheses on the ecology of enteric pathogens on plants. Such synergies cannot be realized without specific recognition of, and a higher profile for, plant health within One Health. Hoffman *et al.* (2022) include in their study the potential advantages of conducting a cost–benefit analysis on actions (in their example: public investments and regulatory changes) under consideration broadly (i.e. across multiple domains). Such broad cost–benefit analyses cannot be undertaken without specific consideration of plant health in conjunction with human and animal health.

5. Recent, related IPPC discussion and decisions

[23] It should be noted that some key points of discussion from the 2022 SPG meeting as contained in its report² are pertinent to and, to an extent, support the premise of this paper. Some relevant excerpts from the report are presented below.

[24] “The SPG considered their possible points of consensus, and the following points were suggested (in no particular order):

- The definition of One Health is problematic, but it also presents an opportunity for engagement on how plant health fits into One Health.
- The plant-health community is not yet well prepared to engage with One Health yet and so there is perhaps a need to equip the secretariat to engage more meaningfully.
- A short (two- to three-page) discussion paper or think-piece could be prepared for the CPM, outlining how the various IPPC activities contribute to the One Health agenda.”

[25] Subsequently, a paper to the Seventeenth Session of the Commission on Phytosanitary Measures (CPM-17) and the related discussion focused on One Health and antimicrobial resistance issues”.³ The report of CPM-17⁴ also includes relevant comments and related decisions.

6. Looking ahead

[26] The absence of the specific inclusion of plant health in One Health may become damaging to plant protection and pest and disease prevention efforts (or may already have become damaging). As noted above, there appears to be an increasing focus on One Health (in its current scope) along with related organizational structure and budgetary considerations. Competing for adequate resource allocations for plant health appears to be challenging in several institutions and organizations. If the focus of decision-makers is increasingly drawn to One Health, and if plant health remains a secondary consideration or is blurred into irrelevance by its absence as a key part of the One Health concept, it may equally lead to decisions being taken without the benefit of complete information relating to plant health.

[27] If plant health is to be positioned more prominently within the One Health concept as an integral, key component, effective advocacy and communications intended to position plant health more appropriately in the One Health concept must be developed and intended recipients representing the key decision-makers identified. In this regard, the One Health Commission appears to be one obvious candidate. Also, it should be noted that the Eighth World One Health Congress is taking place in September 2024 and so this presents a timely opportunity potentially to submit a paper and request an agenda item to be included on the importance of plant health to One Health. IPPC Secretariat staff, and perhaps some CPM Bureau members, could participate to emphasize this.

² 2022 SPG report: https://assets.ippc.int/static/media/files/publication/en/2022/12/SPG_Oct_Report_2022.pdf

³ https://assets.ippc.int/static/media/files/publication/en/2023/01/23_CPM_2023_One_Health_AMR_2023-01-10.pdf

⁴ https://assets.ippc.int/static/media/files/publication/en/2023/04/CPM-17_FINAL_REPORT.pdf

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