

Advancing sustainable and effective One Health action in the Asia-Pacific through partnership

Introduction

Two years into the COVID-19 pandemic, and with eight years remaining to achieve the Sustainable Development Goals (SDGs), the importance of harnessing partnerships has never been more important. The One Health (OH) approach can help to overcome inconsistencies and lack of systems connection within the SDGs.¹ Additionally, it is important to note that the majority of Asia-Pacific countries are off track to achieve the SDG targets² (Table 1) and, realistically, agencies of national, regional and global governance alone are not able to drive the changes required to place our global society on a sustainable footing.

Table 1. Overview of key SDGs relating to small-scale farmers and regional performance status as reported in the 2021 Sustainable Development Report.³

SDG	Status	SDG	Status
1. No poverty	Significant challenges remain	10. Reduced inequalities	Major challenges remain
2. Zero hunger	Major challenges remain	12. Responsible consumption and production	Challenges remain
4. Quality education	Challenges remain	13. Climate action	Challenges remain
5. Gender equality	Significant challenges remain	15. Life on land	Major challenges remain
8. Decent work & economic growth	Challenges remain	16. Peace, justice and strong institutions	Major challenges remain

Prior to the pandemic over 10 per cent of people globally were undernourished and approximately 30 per cent were deficient in key micronutrients. The COVID-19 pandemic has exacerbated the impact of long-term problems associated with global inequity and economic systems that favour extractive rather than regenerative practices.⁴ Malnutrition rates in the Asia-Pacific are amongst the highest in the world, impacting negatively on the immune system and placing the malnourished at increased risk of poorer outcomes when infected by diseases such as COVID-19.

Recent reports from FAO and UNICEF highlight that after decades of positive trends, food and nutrition insecurity is now increasingly real for approximately 800 million people. Significantly, food and nutrition security was also emphasised as a vital component of health in the 2019 United Nations Declaration on Universal Health Coverage. Malnutrition has multiple drivers,

¹ <https://www.nature.com/articles/s41564-022-01076-1>

² <https://www.thejakartapost.com/news/2020/03/26/asia-pacific-countries-not-on-track-to-reach-sustainable-development-goals-un.html>

³ <https://dashboards.sdgindex.org/map>

⁴ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7505605/pdf/main.pdf>

including poverty, climate change impacts, and food system failures to deliver safe, nourishing, affordable food.

Human health and wellbeing and sustainable development are intimately linked with the health of animals, plants, ecosystems and the environment. Redesigning global, regional and national systems to keep us safe, well-nourished, healthy and actively contributing to community and environmental well-being is a complex challenge. Ways of thinking that facilitate intersectionality and interdependence of systems-based approaches are required to achieve equitable and sustainable development to effectively tackle the existential threats impacting the region. It is essential that 'systems' thinking benefits from the perspectives and knowledge of small-scale farmers in relation to biological, cultural and ethical systems, including land and natural resources tenure and other rights.

'Systems' thinking is not new. Many traditional philosophies associated with indigenous communities who have lived in and managed ecosystems for thousands of years are based on understanding of and respect for the systems that sustain life in their local areas. In the Asia-Pacific region, thought leaders have engaged with a number of paradigms that facilitate 'systems' thinking, including OH⁵, Planetary Health⁶ and Ecohealth⁷. In addition, these paradigms align well with the principles and practices of agroecology.⁸ From a biological perspective, agroecological systems optimize the diversity and health of species and genetic resources with agroecological innovations that are based on the co-creation of knowledge, combining science with the traditional, practical and local knowledge of producers.⁹

This paper uses the term OH for brevity, while recognising that the greatest gains will be made by engaging with all groups employing collaborative, systems-focused approaches at the human, animal, and ecosystem health interface. The paper presents a vision for sustainable fibre and nutritious food systems in the Asia-Pacific and actions required to achieve them over the coming decade.

One Health action to reduce the likelihood of another pandemic of zoonotic origin

The Asia-Pacific region has been impacted by multiple pandemics over the past two decades, including Avian Influenza H5N1, Severe acute respiratory syndrome (SARS) and Swine Influenza H1N1. Countries in the region have supported intersectoral OH programs supporting integrated surveillance and control programs, however, small-scale producers and their organizations have rarely been effectively engaged in the design and implementation of these programs.¹⁰

⁵ <https://www.who.int/news/item/01-12-2021-tripartite-and-unep-support-ohhlep-s-definition-of-one-health#>

⁶ [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(15\)60901-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)60901-1/fulltext)

⁷ <https://www.sciencedirect.com/science/article/pii/S0160412019305409>

⁸ http://vsf-international.org/wp-content/uploads/2015/01/VSEF_Position_Paper_3_OneHealth_EN.pdf

⁹ <https://www.fao.org/3/i9037en/i9037en.pdf>

¹⁰ <https://pubmed.ncbi.nlm.nih.gov/24136383/>

An effective OH surveillance and control program is only as strong as its weakest link. Resourcing for disease surveillance and control within the environment sector is inadequate in most countries. The success of the FAO-led field training program that is under development for wildlife, ecosystems, biodiversity and the environment, stresses the importance of working collaboratively with those living and working at the livestock-wildlife-environment interface, in addition to the Ministries of the Environment, Health, Agriculture and Livestock.

Rabies control efforts in Indonesia provide an example of the benefits of a combined OH and One Welfare approach that brings the human, domestic animal and wildlife sectors together and also involves non-governmental organizations and communities¹¹. A OH approach that incorporates elements of community-oriented One Welfare and One Biosecurity will support risk-based assessments that generate robust evidence and understanding of livestock production systems and associated value chains of importance in the region.

It is also important to note that vaccine preventable diseases of livestock continue to cause high mortality either due to the absolute lack of access to appropriate vaccines or non-existent or unreliable cold chains that result in vaccination failure. For example, the identification of Nipah virus in pigs was thought to be delayed because it caused clinical signs that were not significantly different to other known, vaccine preventable pig diseases¹². Likewise, the rapid identification of highly pathogenic avian influenza is also frequently delayed in situations where vaccine preventable Newcastle disease is endemic and high mortality in chickens common¹³.

Support for public and private animal health services that efficiently and effectively control vaccine preventable diseases and employ participatory OH approaches to develop feasible and appropriate biosecurity practices in high-risk populations would yield significant return on investment. The multiple benefits of such an approach include: i) enhanced disease surveillance sensitivity across diverse livestock production systems as mortality becomes a rarer event and producer trust in animal health services increases; ii) decreased greenhouse gas emissions through improved livestock productivity; iii) improved household food and nutrition security due to increased income and improved access to animal-source food; and iv) decreased spread of disease from domestic animals to wildlife.

Recent experiences with Fall Armyworm infestations that led to increased maize prices in Asia and put pressure on the affordability of pig and poultry biosecurity is another example of the results of fragmented and poorly resourced biosecurity services.

Recommendations:

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<https://www.taylorfrancis.com/chapters/edit/10.1201/9781003218333-8/rabies-control-indonesia-andri-jatikusumah-wahid-fak-hri-husein-ahmad-gozali-ratmoko-eko-saputro-elly-sawitri-yuni-yupiana-pebi-purwo-suseno-james-mcgrane-luuk-schoonman-robyn-alders>

¹² https://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/3.01.14_NIPAH_HENDRA.pdf

¹³ <https://www.tandfonline.com/doi/abs/10.1017/S0043933910000516>

- Facilitate improved coordination between regional and international agencies and national public, private and civil society groups, and support the engagement of national and regional representatives at international decision-making forums;
- Encourage the formation of OH committees at state and district levels¹⁴ that involve relevant community representatives;
- Ensure that representatives of farmers, producers and local communities are involved in inclusive identification of priority animal and plant pests and diseases and the choice of feasible and measurable indicators in relation to their prevention and control; and
- Increase the efficiency of disease surveillance and control programs by adopting a One Biosecurity approach to biosecurity policy and research that enhances the interconnections between human, animal, plant, and environmental health to prevent and mitigate the impacts of invasive alien species.

One Health action to deliver equitable, safe, sustainable and nutritious food systems

As we emerge from the COVID-19 pandemic, it is important that we ‘build forward better’ by achieving inclusive, sustainable and resilient food and natural fibre systems. Many immediate issues must be addressed over the next two years while many others must be tackled over the coming decade to achieve the monumental transformations required to deliver the food systems and economies required to achieve a net-zero-carbon world.

Civil society can play a vital role in achieving functional linkages between those involved with: i) domesticated and wild terrestrial and aquatic animals and the plant-source food they consume; ii) the public health and environmental health sectors; and iii) allied sectors and professions associated with transport, food science and financial institutions. This active, participatory partnership will enable effective joint problem identification and joint agreements regarding options to resolve them.

Recommendations:

- Work with civil society to capture and learn from lessons emerging from the COVID-19 pandemic and other crises to build safe, equitable and resilient food and natural fibre systems that can prevent and better respond to complex emergencies;
- Conduct a regional, multisectoral review of food, health and economic systems through a OH lens to chart sustainable and resilient pathways for farmers, producers, civil society organizations, governments, the private sector and donors that paves the way for environmental recovery based on fair, sustainable and circular bioeconomies¹⁵;
- Facilitate services that provide family farmers and input suppliers with the knowledge and inputs to make their production systems more climate-resilient and sufficiently profitable so they can meet their nutrient requirements either directly through their own production

¹⁴ <https://pubmed.ncbi.nlm.nih.gov/33906990/>

¹⁵ <https://www.globalhungerindex.org/issues-in-focus/2020.html> and <https://www.fao.org/publications/card/en/c/CB5798EN/>

or indirectly through fair farm-gate prices that allow them to purchase safe and nutritious food;

- Document and disseminate information on plant and animal production systems that produce naturally nutrient dense food without requiring regular use of antibiotics, anthelmintics and pesticides;
- Encourage the implementation of formal and informal education programs that match people’s circumstances. School and training curricula should be tailored to local conditions, including local agroecological zones and marketing systems. The OH concept or use of local equivalents to the OH paradigm should underpin agroecological/regenerative and human nutrition capacity building activities; and
- Support regional trade initiatives that include social and environmental metrics rather than merely pursuing short-term economic gains.

One Health, digitalization and social and environmental justice

Delivering access to and facilitating the use of appropriate technology that drives improved productivity, animal welfare and environmental stewardship through effective access to information and services, tailored financial and insurance products and more diverse market options and offtake options are crucial aspects of agricultural development in the 21st century. Indeed, online marketing of agricultural produce has grown significantly across the region during the COVID-19 pandemic. However, it is essential that these innovations also be accompanied by rigorous investigation of human and environmental rights and frameworks concerning the ownership and use of the data generated.

Recommendations:

- Conduct a study of farmer, producer, fisher and other resource owner legal rights in relation to digital data pertaining to their resources.
- Promote transparent agricultural data governance that ensures equal rights for family farmers and fishers.

Potential One Health partners in Asia-Pacific

The adoption of and returns from systems-thinking and collaborative approaches to agricultural, ecosystems and human health can be accelerated by networking with existing groups in the region (Table 2).

Table 2. Examples of potential OH partners in the Asia-Pacific.

Association of Pacific Rim Universities Global Health Program	Clean Environment and Planetary Health in Asia (CEPHA) Network
International Planning Committee for Food Sovereignty	La Via Campesina Asia Pacific
Oceania Ecohealth Chapter	One Health Network South East Asia
Southeast Asia One Health University Network	Sunway Centre for Planetary Health, Sunway University, Malaysia

<i>Tadra Vanua</i> – Fiji Institute of Pacific Health Research and the Fiji National University	The Pearl River Declaration: fostering a regional one health collaboration in the Asia-Pacific.
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Moving forward together

A dynamic FAO-civil society partnership has huge potential to address gaps in current collaborative, systems-focused programs. The intimate knowledge of farmers and producers - and their communities and associations in the region - regarding what is required to achieve safe production that is also economically, socially and environmentally sustainable will play a crucial part in the development of sustainable and circular bioeconomies fit for purpose in the 21st century. Importantly, given the intimate links between local communities, cultures and ecosystems, a participatory OH approach can help to deliver equity in decision-making.