

# Agroecology and One Health

## Building a Solid and Lasting One Health on the Basis of Agroecology

- ▶ We believe the concept of One Health needs to be combined with agroecology in order to integrate local and traditional knowledge, experiences and practices developed over centuries by rural communities in accordance with their specific environment.
- ▶ Small-scale farming by an educated and engaged community, taking into account agroecological and ecosystem factors, can enhance food security and food sovereignty and promote adaptations to climate change, all of which are crucial to One Health.
- ▶ The many dimensions of agro-ecology need to be integrated into a holistic approach that takes into account the inter-relationship between humans, animals, and the Earth.



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### ONE HEALTH AND THE NEED FOR AN AGROECOLOGICAL PERSPECTIVE

The One Health concept explicitly links environmental health to animal and human health as part of a whole strategy to address disease not only through the use of drugs, but also by evaluating environmental, climatic, social and psycho-emotional factors. By recognizing that human, animal, and ecosystem health is inextricably linked, One Health seeks to promote and improve health by enhancing cooperation and collaboration between physicians, veterinarians, agronomists, biologists, and other professionals (Zinsstag et al., 2010).

VSF International, however, goes beyond this multi-disciplinary approach to include traditional farming knowledge and practices (Fèvre et al., 2013). Based on decades of experience, we strive to combine the concept of One Health with the agroecology methodology. VSF believes that the One Health concept, in which collaboration occurs mostly between experts, is too limited. We are convinced that a wealth of information and solutions to agricultural and breeding problems

are offered by local farmers on small farms who face everyday problems with their land and livestock.

Agro-ecology is a scientific discipline related to ecosystems and productive systems. It integrates a social movement, a strong cultural dimension (reclaiming traditional techniques, etc.), and a political dimension (human rights, the role of the peasantry, food sovereignty, etc.). As a social movement, agro-ecology provides a foundation through which people can know and control their economic development, and therefore their health and welfare (including animals). Without an extensive understanding of agro-ecology and its relation to the idea of ecohealth<sup>1)</sup>, we cannot reach a state of general and long-lasting health for all.

<sup>1)</sup> *Ecohealth (Ecosystem Approaches to Health)*, has been developed over the past few decades by networks of researchers and Communities of Practice. Ecohealth is comprised of a variety of systemic, participatory approaches to understanding and promoting health and well-being in the context of complex socioecological interactions. (VWB/VSF Canada, 2010).



Additionally, the One Health literature focuses primarily on zoonosis. Although we recognize the relevance of zoonotic diseases to One Health, VSF looks to agro-ecology and ecosystem approaches to health as the starting point for dealing with disease and environmental and social regeneration.

### EMPOWERING PEOPLE: A PARTICIPATORY APPROACH TO ENSURING POOR AND MARGINALISED GROUPS MAKE THEIR OWN DECISIONS ABOUT THEIR RESOURCES AND HEALTH

All around the world, traditional farming systems are complex and tailored to local situations, enabling family farmers to efficiently confront adverse conditions and meet their basic needs (Soliz et al., 2012). However, there is a serious risk of losing this indigenous knowledge and traditional agroecological practices that are at the basis of these systems. VSF uses participatory training techniques in order to integrate this important information into enhanced local farming practices. The “Campesino to Campesino” methodolo-



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gy promoted by several agro-ecological movements in Latin America is a great inspiration to VSF’s work in this field.

Another example is the Pastoralist Field Schools (PFS) promoted by VSF and FAO (UN Food & Agriculture Organisation) to empower participants and the wider community and to stimulate local innovation through participatory learning techniques.

In addition to recognizing the value of local and tradi-

tional knowledge, VSF also sees the need to tighten the link between farmers and consumers. Successful action will allow better marketing of products, generate sufficient income for family farms, and promote a more equitable and sustainable food system for all. Agroecology, as a social movement, raises awareness and promotes collective actions that lead to alternative models of production and consumption, where people who buy and eat local farm products are no longer just consumers but conscious citizens. For this reason, VSF is convinced that agroecology principles complement and should be integrated into the One Health concept in order to truly encourage sustainable development.

### MANAGE ECOLOGICAL RELATIONSHIPS AND MINIMIZE TOXINS

The maintenance of health is one of the three pillars of the One Health system, and agro-ecology represents a fundamental consideration in the relationship between the Earth, animals and humans.

VSF believes that a number of guiding principles can be applied – both in agriculture and in animal health and disease treatment and prevention – to have direct positive impacts on human health. These principles are:

- Re-establish naturally-occurring ecological relationships, instead of reducing and simplifying them;
- Use intercropping, cover cropping, mulches and perennials; integrate livestock and recycle nutrients;
- Manage pests, diseases and weeds, rather than “control” them; maintain animal health through healthy, balanced and continuous nourishment; increase biodiversity in order to better control parasites (through strengthening animals’ immune systems);
- Reduce or eliminate the use of drugs that can harm the environment or the health of farmers, farm workers or consumers; promote homeopathic and herbal remedies for livestock;
- Minimize toxins and stimulate the regeneration of organic soil fertility, structure and biology.

### USE RENEWABLE RESOURCES AND CONSERVE ENERGY

Energy security is a growing challenge for communities around the world. VSF considers that local production of energy from renewable sources is a fundamental

pillar for reaching One Health goals. Whenever possible, we support the development of affordable, safe, efficient renewable energies through a combination of innovative technical solutions (e.g. passive solar panels, photovoltaics, micro-hydro power, biogas, etc.) and traditional farming methods such as water mills, windmills, hand work tools and animal traction. Furthermore, we promote energy conservation and recycling through biological nitrogen fixation, recycling on-farm nutrients and using on-farm resources.

### CONSERVE SOIL, WATER AND GENETIC RESOURCES

Many agroecological practices, including agroforestry, promote improvement of organic soil fertility, and thus the soil's ability to retain water. VSF is committed to encouraging sustainable grazing and water resources use to improve long-term food security for local communities, as part of a conservation approach.

Similarly, the conservation of local breeds (and seeds), the result of centuries of selection and adaptation to local conditions, favours the acquisition of economic, social and cultural rights for small-scale farmers. Local breeds are typically multipurpose and smaller than breeds genetically selected for mono production.

They are usually more resistant to local diseases, food and water shortages, and extreme weather conditions. These characteristics translate into less need for veterinary care, preservation of the ecosystem, and a stable, balancing factor that is critical in achieving One Health goals.

### ECONOMIC WELL-BEING

The development of agro-ecology may depend in part on a reorganization of the supply chain and markets and enhancement of products. A strong local economy allows the maintenance of social welfare, which is a fundamental basis for the development of One Health. In order to promote economic well-being for local communities, VSF advocates:

- Avoiding dependence on single crops or products;
- Using alternative organic markets and short food chains (including Community Supported Agriculture);
- Adding value to agricultural products;
- Finding alternative incomes such as agro-tourism, re-



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sponsible tourism, and ethical tourism;

- Avoiding dependence on external subsidies;
- Using multiple crops to diversify seasonal timing of production throughout the year;
- Keeping bank debt to a minimum; using ethical banks instead of banks that invest in armaments or that make investments that generate higher inequalities.

### SYSTEMS APPROACHES

National or international laws dictated by economic objectives rather than by social objectives result in the failure of One Health for everyone. Climate change, the slow but continuous disappearance of small-scale farmers, and a more and more precarious economic situation are the result of social laws and market conditions that are enforced without collective participation. We need to leave behind the “one-size-fits-all” principle and adopt a systemic approach based on local specificities and on mobilization and participation of local communities.

Finally, VSF recognizes the need to study and quantify, especially in developing countries, the relationship between agricultural production patterns and animal/human health and welfare in order to highlight the effects of conventional agriculture in terms of negative externalities and reduced welfare for communities.



## CONCLUSION

VSF International believes that applied agroecology enhances animal and human health in the broadest sense, promoting the physical and psychological wellbeing of livestock that ultimately results in food security, appropriate breeding practices, and use of breeds and species suited to the local environment and culture.

Food security and food sovereignty for humans, animals, and the environment are the foundations for a stable One Health system.

VSF emphasizes the need to simultaneously support different components of agro-ecological farming in the context of a realistic and pragmatic approach to agro-ecological transition, resulting in a social, economic, cultural and political reframing of the current dominant system.

Only through an agro-ecological approach that recognizes the uniqueness of each local situation and starts with the experiences and solutions provided by local communities, will we be able to build a solid and sustainable One Health for all.



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