24. SMALLHOLDER EARLY WARNING NETWORK TO HELP PROTECT AGAINST ONE HEALTH THREATS

ACTION AREA	FOOD SYSTEMS RESILIENCE
SOLUTION CLUSTER	SYSTEMIC APPROACHES TO CRISIS MANAGEMENT
THEMATIC AREA	MULTI-RISK EARLY WARNING SYSTEMS AND ANTICIPATORY ACTIONS
SUBMITTED BY	FAO

WHAT IS THE RISK, SHOCK, STRESS THAT THE SOLUTION IS TRYING TO ADDRESS?

Small holder Early Warning network (SHEW- Net): small holder direct engagement in early warning systems to improve food security (plant and animal health) : crowd sourced data for context specific early warning and risk forecasts to prevent high impact crop, livestock and fish pests and diseases.

High impact diseases and pests are posing an ever-increasing threat to human, animal, plant and environmental health (i.e. One Health). Climate-driven changes to ecosystems and land use, intensified agriculture, increased travel and trade, conflict, natural disasters and other pressures are all facilitating the emergence and spread of One Health threats while also rendering global food systems increasingly less resilient to shocks. As a result, these systems are failing to deliver the food security and nutrition required by growing populations, especially in lower and middle-income countries.

Unfortunately, the early warning systems established to help protect against One Health threats and their devastating livelihood impacts are failing to keep pace. These systems lack the capturing of timely and accurate information required to forecast looming threats and launch early preventative actions. They also lack the local trust and community engagement required to mobilize effective local and national responses. As a result, food systems are caught in a cycle of increased threats, delayed responses and protracted crises, from which vulnerable, food-insecure and often smallholder communities suffer most. The total reported annual mean cost of biological invasions has been estimated at a staggering USD 26.8 billion (https://www.nature.com/articles/s41586-021-03405-6).

HOW DOES THE SOLUTION IMPROVE OR ENHANCE RESILIENCE OF FOOD SYSTEMS?

SHEW-Net will encourage and unlock crowd-sourced information. It will enable early warning systems to more effectively fulfil their function of warning against and preventing One Health threats. By engaging livestock, aquaculture, crop and other smallholders directly in community-driven and nationally supported networks built around approachable, digital tools and contextually appropriate communication channels to provide i information on best practices and comprehensive biosecurity (vaccination, hygiene, resistant cultivars/breeds etc.), SHEW-Net will provide authorities and private stakeholders alike with the timely, accurate, crowd-sourced data they require to warn against, prepare for and respond to looming threats.

In addition, SHEW-Net will inspire and empower action. By encouraging a holistic, agroecological approach to systemic threat assessment, prevention and response solutions, SHEW-Net will enable communities to mount shared disease and pest responses by both providing information sharing tools and culturally appropriate, collaborative solutions as well as enabling the participatory ownership and engagement required to use and embrace said tools.

Finally, SHEW-Net will promote best practices. It will link food producers across ecosystem interfaces and also create relationships and build trust with relevant authorities and private sector. This community ownership will be encouraged by the use of behavioral insights to harness behavioral drivers that make it easier to use digital tools and enact safer food production practices. This will foster the sharing and adoption of best practices for safer food production. This will in turn contribute to the reduction of One Health disease and pest pressures over time and in a sustainable manner.

IS THE SOLUTION RELEVANT TO BUILDING FOOD SYSTEMS RESILIENCE?

Anticipate shocks/risks/stress and/or reduce vulnerability, Manage risks, Prevent (reduce exposure), Adapt to shock-affected scenarios and evolving risk scenarios

IN WHAT REALMS OF INTERVENTION IS THE SOLUTION DESIGNED TO ACT ON RESILIENCE?

Individual, Household, Community, Institutional

WHO ARE THE MAIN ACTORS THAT WOULD PUT THIS ACTION INTO PLACE?

Policymakers (government), Private (businesses, etc.), Civil (NGOs, etc.), Farmers, Scientists, Indigenous groups

WHAT IS THE POLITICAL SUPPORT FOR THIS IDEA? DOES THE IDEA HAVE ANY MEMBER STATES OR POLITICAL INTERESTS? ARE THERE ANY STAKEHOLDERS WORKING ON IT?

FAO already supports countries in monitoring, detecting, forecasting and early warning against potential, known and emerging threats through established EWS for crop and animal diseases. These include the EMPRES, EMA-I, DLIS for desert locust and many other early warning tools used by government and institutional officers. The Tripartite Global Early Warning and Response System for major animal diseases combines and coordinates the alert and disease intelligence mechanisms of FAO, World Organization for Animal Health and the World Health Organization. FAO has also developed Agroecology-based initiatives/tools in the past at the bequest of member states through governing bodies and through negotiation.

Through COAG, there is support from member states to reduce the burden of animal and plant pests and diseases through the Emergency Prevention System (EMPRES), of which early warning and early response are key components. In 2018, Member States requested FAO continue applying agroecology as one of the approaches to implement the five principles of sustainable food and agriculture in support of the SDGs and to assist countries and regions to engage more effectively in the transition processes towards sustainable agriculture and food systems (http://www.fao.org/3/my349en/my349en.pdf). Members of the Committee on World Food Security are discussing agroecology to enhance food security and nutrition (http://www.fao.org/cfs/workingspace/workstreams/agapp/en/).

The Scaling up Agroecology Initiative brings together different UN Agencies and stakeholders to catalyse scientific evidence, knowledge and cooperation to support agroecological transitions at different levels (World Food Programme, International Fund for Agricultural Development, Convention on Biological Diversity, UN Development Programme, and UN Environment Programme, World Bank).

IS THE SOLUTION APPLICABLE AT GLOBAL LEVEL, OR SPECIFIC CONTEXTS & PARTICULAR COUNTRIES?

The solution is applicable at global level as a methodology to be tested, supported and promoted by the international community and adapted across nations. However, in terms of implementation and roll out, the solution is inherently context specific and most tailored to low and middle income countries. It should be piloted in a handful of target countries first in order to test foundational principles, agroecological methods, community engagement strategies and information technology infrastructure/computer literacy requirements before expansion and scaling up

HOW DOES THIS SOLUTION CONTRIBUTE TO (A) EMPOWER WOMEN AND COMBAT GENDER INEQUALITIES, AND (B) THE FULFILMENT OF HUMAN RIGHTS, ESPECIALLY THE RIGHT TO FOOD AND THE RIGHT TO WATER, (C) MAKE USE OF INNOVATIONS (TECHNOLOGIES, INSTITUTIONS, PROCESSES)?

Firstly, the project contributes to reducing gender inequalities by leveraging inexpensive and ubiquitous digital tools and social media and other communication channels where gender equity is already a social norm and women are just as likely or more likely to use technology than men. Furthermore, in many LIMCs, women-headed households, especially in livestock production contexts, make up a majority of agroecological units and will therefore be empowered to lead information collection and sharing, which may also enable women to take up more decision-making power in later group shared actions. Democratizing information across digital platforms and ensuring transparency between public and private sectors as well as freedom of information access will support the fulfilment of human rights, enabling network members as well as the general public to contribute risk information, access it and act on said information. Finally, by leveraging behavioural insights to understand the cognitive and contextual drivers of behaviour and then leverage these insights to nudge stakeholders to contribute regularly and transparently to SHEW-Net digital tools, the project will make use of both behavioural science innovations as well as the latest in accessible digital solutions. This streamlining of data sharing will also trigger institutional innovations in the sharing of information across national bodies, ministries, farmer associations and more.