

The Sowing Diversity = Harvesting Security Global Policy Agenda (Outline)

Summary

The goal of the Sowing Diversity=Harvesting Security (SD=HS) programme is to uphold, strengthen and mainstream the rights and technical capacities of indigenous peoples and smallholder farmers, and to influence local to global policies and institutions on access to and sustainable use of plant genetic resources for food and nutrition security under conditions of climate change .

This outline of the SD=HS Global Policy Agenda presents a multiple evidence-based and bottom-up approach to global policy engagement, which is based on a combination of concrete experiences from a number of countries, multi-stakeholder perspectives and the integration of indigenous and scientific knowledge. The local to global policy engagement is a key component of enabling SD=HS to scale up and mainstream our work in strengthening farmers' seeds systems. Central to this endeavour is the concept of food and seed sovereignty, which refers in essence to the right of indigenous peoples and smallholder farmers to participate in shaping and managing the policies and institutions that regulate the food and seed systems they operate in.

The SD=HS Global Policy Agenda focuses on the following six topics: (1) Farmers' Rights, (2) Seed Laws and Policies, (3) Intellectual Property Rights, (4) Corporate Concentration and Emerging Technologies, (5) Public Research and Access to genebank materials and (6) Policy Advocacy on Women, Seeds and Nutrition. This document briefly introduces each topic, with a particular focus on the most pressing and strategically important issues the programme aims to address. Some of the key objectives and activities are summarized below:

- Introduce and develop a roadmap towards a protocol or a set of (voluntary) guidelines for national Farmers' Rights policy formulation and implementation for the International Treaty for Plant Genetic Resources for Food and Agriculture;
- Promote on the national level the implementation of Farmers' Rights by mapping country experiences, sharing best practices and proposing language for introduction into related seed laws and policies that directly impact on the realization of Farmers' Rights on the ground, such as seed certification and variety registration rules;
- Monitor developments regarding intellectual property rights, emerging technologies and corporate concentration, and assess the impact of these developments on the ability of farmers and breeders to use, maintain and improve the world's agro-biodiversity and respond to climate change;
- Develop protocols that support community seeds banks and the establishment of partnerships between different farming communities and with (inter)national gene banks and research institutions in order to facilitate smallholder farmers' access to a portfolio of diverse crops and varieties and to stimulate participatory research;
- Strengthen a gender-sensitive evidence base for the role of biodiversity and neglected and underutilized species (NUS) in food and nutrition security and health, and contribute to

understanding the nature and coping mechanisms during seasonal hunger periods. This information will be used to inform decision making and support countries mainstreaming the sustainable use of biodiversity in national food and nutrition action plans.

The Sowing Diversity = Harvesting Security (SD=HS) Programme

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The SD=HS programme has four Pillars:

- *Scaling Up Models* is strengthening the adaptive capacities of indigenous peoples and smallholder farmers in seed conservation, access and sustainable use by scaling up innovative and engendered models of biodiversity management (Pillar 1).
- *Farmer Seed Enterprises* is enhancing the livelihoods and seeds security of indigenous peoples and smallholder farmers by producing and marketing a good quality and diversity of seeds through public-private partnerships (Pillar 2).
- *Women, Seeds and Nutrition* is empowering women as catalysts of biodiversity-based diets (Pillar 3).
- *Governance and Knowledge Systems* is strengthening the capacities and knowledge base of developing countries and their indigenous peoples and smallholder farmers in order to secure national and global legislation and policies for the full implementation of Farmers' Rights and the Right to Food (Pillar 4).

This document presents the outline of the Global Policy Agenda for the SD=HS programme. Central to the SD=HS is the local to global policy link from Pillars 1, 2 and 3, whereby concrete, on-the-ground experiences of indigenous peoples and smallholder farmers are the primary source of the SD=HS policy agenda. This is complemented by the baseline surveys on the farmers' use of plant genetic resources for food and agriculture (PGRFA) for climate change adaptation and the baseline surveys on household dietary diversity and use of NUS during sufficiency and hunger periods. In addition to this are the various trend analyses, horizon scans and policy engagement performed by the Pillar 4 partners in the programme¹; the Baseline Study on Global Policies and Seed Laws² and the corresponding multi-stakeholder, national and regional seed policy validation meetings in Zimbabwe, Laos and Peru; and the SD=HS Global Expert Meeting on Seed, which was held in Geneva during 9-11

¹ See for example: ETC Group. (2015). *Group Outsmarting Nature? Synthetic Biology and Climate Smart Agriculture*, available at: <http://www.etcgroup.org/recent-reports>; GRAIN. (2015). *Structural reforms, free trade agreements and the war on subsistence*, available at <https://www.grain.org/article/categories/14-reports>; South Centre. (2016). *Innovation and Global Intellectual Property Regulatory Regimes: The Tension between Protection and Access*, available at: <http://www.southcentre.int/category/publications/>; TWN. (2015). *Biopiracy Watch Briefing*, available at: <http://www.biosafety-info.net/bioart.php?bid=954>.

² Baseline on Global Policies and Seed Laws for the Management of Plant Genetic Resources for Food and Nutrition Security: Integration of Findings and Analysis, 2015.

March, 2016. The combination of concrete experiences from a number of countries, multi-stakeholder perspectives and the integration of indigenous and scientific knowledge comprises the multiple evidence-based approach of the SD=HS global policy agenda. International non-government organizations (NGOs) often alert social movements of developments that may impact farmer seed systems, assist in technical analysis and advocacy supporting national NGOs and regional networks. With the concrete experiences of partners on the ground as core basis of the policy agenda, the SD=HS is working on new models to improve and strengthen bottom-up global policy advocacy.

The local to global policy engagement is a key component of enabling SD=HS to scale up and mainstream our work in strengthening farmers' seed systems. The programme developed a scale-up pathway, which integrates policy influencing.³ The scale-up pathway analyzes a diversity of local experiences on how existing local, national and international policies and regulations negatively affect the functioning of farmers' seed systems, either intentionally or unintentionally, and how this may have a negative effect on food security. The policy engagement raises awareness among farmers and policymakers alike, and creates alliances for change that extend from local to global levels. It also creates opportunities for indigenous peoples and smallholder farmers to claim and establish a role in policy-making processes and to increase the impact of their efforts to understand, influence, contribute to and participate in the development of policies. By setting examples and making recommendations, the programme contributes to the development of evidence-based policies that are also grounded on the experiences of, and validated by, indigenous and farming communities. This provides models for other actors engaged in local to global and global to local policy influencing. Careful publicizing of the results of the efforts undertaken in this programme should guide other actors developing their own activities, thus creating a basis for wider collaboration beyond the programme boundaries.

Global Expert Meeting

The Global Expert Meeting in Geneva discussed the main trends affecting food, nutrition and seed security, with presentations and inputs from the programme partners and external experts. The main objective of the meeting was to identify knowledge and research gaps, provide options for policy measures (national, regional and global) to support farmers' seed systems and sustainable agriculture, and discuss possible strategies to advocate for and implement such policy measures.

The concept of food and seed sovereignty was considered fundamental to all activities undertaken within the SD=HS programme. While the word sovereignty usually refers to nation states, food and seed sovereignty refers in essence to the right of indigenous peoples and smallholder farmers to participate in shaping and managing the policies and institutions that regulate the food and seed systems they operate in. The importance of this right is paramount, in particular because most policies that govern the seed sector are exclusively aimed at supporting large-scale industrial farming systems to the detriment of smallholder farmers. This overall trend is confirmed by the various SD=HS global trend analyses on such issues as land grabbing and trade agreements, as well as the

³ Next to four other scale-up pathways on, for example, Farmer Field Schools and Climate Change Response. See SD=HS submission to GB6, available at: <http://www.planttreaty.org/content/farmers-rights-submissions>.

findings of the SD=HS baseline studies on the national seed laws in the original eight⁴ programme countries, which hardly recognize the existence and importance of farmer seed systems. This policy blind spot is highly alarming, given the fact that farmer seed systems, often referred to as the 'informal sector,' are by far the main source of seed for smallholder farmers and play a crucial role for seed and food security in the world. To correct this lack of recognition and work towards the realization of smallholder farmers' food and seed sovereignty, Pillar 4 of the SD=HS programme will continue to monitor global trends in the food system and expose threats that affect local seed systems, as well as raise awareness of alternative development pathways based on the principles of agro-ecology and the Right to Food. This will be done through various means⁵ and aim to increase understanding and capacity among farmer and civil society organizations, policy makers and the broader public to: (1) influence national, regional and global policies and laws related to seed systems; and (2) implement Farmers' Rights and Right to Food, using opportunities and addressing obstacles under national, regional and international laws and norms.

On the basis of the presentations and discussions during the Global Expert Meeting, six topics will guide the SD=HS Global Policy Agenda and the respective roles of the different partners in the programme. These topics are: (1) *Farmers' Rights*, (2) *Seed Laws and Policies*, (3) *Intellectual Property Rights*, (4) *Corporate Concentration and Emerging Technologies*, (5) *Public Research and Access to Genebank Materials* and (6) *Policy Advocacy on Women, Seeds and Nutrition*. Although listed separately, there is a significant overlap among the issues, particularly as seed laws and policies as well as intellectual property rights have a major impact on the realization of Farmers' Rights. Each topic will be briefly introduced below, with particular focus on the most pressing and/or strategically important issues that the programme aims to address and the rationale, including a brief overview of planned activities that is incorporated in a revised three-year logical framework, submitted to Sida on 14 June 2016.

1) Farmers' Rights

The realization of Farmers' Rights, as articulated in the FAO Treaty – more specifically in its Preamble and in Article 9,⁶ and more broadly in Articles 5 and 6 on Conservation and Sustainable Use⁷ – is central to the SD=HS programme. Until today, many countries struggle with putting this concept into policy, law and practice, and the full implementation of Farmers' Rights, which is one of the core objectives of SD=HS, remains a major challenge. The SD=HS programme has executed several activities to support the implementation of Farmers' Rights. On the global level, based on the experiences of over 90 Farmer Field Schools (FFS), SD=HS made a submission of recommendations regarding Farmers' Rights to the sixth meeting of the Governing Body of the International Treaty for Plant Genetic Resources for Food and Agriculture in October 2015, which was distributed by the Treaty secretariat as a working document. SD=HS also organized a side event on the same topic. In

⁴ Now reduced to five countries due to Sida budget cut and structural delays in three of the countries.

⁵ Ranging from publications and workshops to online course materials and negotiation assistance provided directly to policy makers in negotiation processes.

⁶ See: <http://www.planttreaty.org/content/article-xiv>.

⁷ At the Fourth Session of the Governing Body of the FAO Treaty, contracting parties recognized the link between Farmers' Rights under Article 9 and the provisions on conservation and sustainable use under Articles 5 and 6 of the Treaty.

addition, several SD=HS partners have been actively involved in discussions on the necessary improvements of the Treaty's Multilateral System and have submitted contributions on the interrelations between the Treaty, the International Convention for the Protection of New Varieties of Plants (UPOV) and the World Intellectual Property Organization (WIPO), as requested by the 5th Governing Body Resolution 8/2013. On the national and local levels, SD=HS partners organized meetings in the countries covered by the programme to build capacity on Farmers' Rights among farmers and policymakers, and to facilitate farmer participation in decision-making processes on the management, improvement and use of PGRFA.

The SD=HS programme will continue to undertake activities aimed at capacity building and policy engagement and advocacy in support of the implementation and strengthening of Farmers' Rights. In line with the programme's local to global (and vice versa) scale-up pathway, SD=HS will organize side events, produce policy briefs based on evidence collected from the other programme pillars and feed these into policy-making processes, such as the FAO Africa Regional Consultative Conference on Farmers' Rights to be held in Zimbabwe (June 2016), the Global Consultation on Farmers' Rights that will take place in Bali, Indonesia (September 2016), and the occasion of GB7 (2017).

The programme aims to introduce and develop a roadmap towards a Treaty protocol or set of voluntary guidelines for national Farmers' Rights policy formulation and implementation. On the national level, SD=HS will promote implementation of Farmers' Rights by mapping country experiences, sharing best practices and proposing language for introduction into related policies (discussed below) that directly impact on the realization of Farmers' Rights on the ground.

In addition, SD=HS partners will join civil society organizations to advocate for the realization of Farmers' Rights in relation to the implementation of other international treaties, such as the UPOV Convention,⁸ the World Trade Organization's Agreement on Trade-Related Aspects of Intellectual Property Rights (WTO-TRIPS Agreement),⁹ and the Convention on Biological Diversity (CBD) and the Nagoya Protocol.¹⁰ More specifically, SD=HS partners will focus on the following aspects:

- Actively participate in the discussions on interrelations between the FAO Treaty, the UPOV Convention and WIPO¹¹ in order to highlight the current inconsistencies between these international instruments and institutions, and to strengthen coherent policy implementation in recognition of Farmers' Rights;
- Contribute to the review and reform of the Treaty's Multilateral System through publications and direct participation in the relevant expert groups and meeting sessions, aiming to implement a functioning, equitable benefit-sharing system and strengthen Farmers' Rights.
- Support further development of the international human rights law and the realization of the rights of smallholder farmers and indigenous communities through publications and working meetings on the rights of peasants and other rural workers and related human rights.

⁸ International Union for the Protection of New Varieties of Plants: <http://www.upov.int/portal/index.html.en>

⁹ World Trade Organization: https://www.wto.org/english/tratop_e/trips_e/trips_e.htm

¹⁰ Convention on Biological Diversity: <https://www.cbd.int/abs/>

¹¹ World Intellectual Property Organization: <http://www.wipo.int/portal/en/index.html>

- Strengthen national and international legal frameworks for the protection of Traditional Knowledge and Access and Benefit-Sharing by, among others, collecting and publishing evidence on biopiracy cases, and by promoting and building capacity on the implementation of a disclosure requirement concerning genetic resources and associated traditional knowledge in patent and plant variety protection laws in support of the Treaty, the CBD and the Nagoya Protocol.

2) Seed Policies and Laws

Seed policies and laws are of crucial importance for the realization of Farmers' Rights and the Right to Food, as they directly impact upon farmers' ability to save, use, exchange and sell the seeds and varieties of their preferred choice. For example, seed certification and marketing laws may limit the selling of seeds to registered seed sellers and/or only allow selling of certified seeds of registered varieties (see the example in Box 1 below). Smallholder farmers often have difficulties with fulfilling the requirements for registration as seed producers, as well as for registering their new (farmer-bred) varieties. The strict Distinctiveness, Uniformity and Stability (DUS) requirements and the cost that many countries set for the registration of new varieties are particularly aligned to the needs and characteristics of large-scale industrial farming systems and do not necessarily fit the needs and interests of smallholder farmers, especially in developing countries. These difficulties are a direct consequence of the exclusive focus on the formal seed value chain in many national seed laws, as a result of which the operating conditions and needs of smallholder farmers are ignored. Some countries only allow exchange and trade in varieties that are registered, resulting in the outlawing of varieties of smallholder farmers.

Box 1: Global findings of the study on national seed laws

The SD=HS study on the national seed laws in the eight countries shows for example, that for Farmer Seed Enterprises (pillar 2) both registration of varieties and registration of the seller (legal or natural person), as well as certification of seed lots of registered varieties generally appear to be required. If such seed is sold in local markets only, meeting certification standards may be facilitated in some countries (e.g. Zimbabwe) but not in others (e.g. Vietnam), although some countries may tacitly accept such practice (Vietnam). Such policies limit farmers' options to market their seed outside the local community, particularly affecting the seed of farmers' varieties that are only maintained in small-scale systems and that contribute to a wider diversity in farming systems.

Some SD=HS partners have taken several initiatives to counter this situation and improve the recognition and support for farmer seed systems. One example is the development of GRAIN's

infographic ‘*Seed laws around the world,*’ which provides an overview of what farmers can and cannot do with the seed they produce and the seed they buy.¹²

In terms of realizing policy change, some SD=HS partners provided substantial inputs to the *Voluntary Guide for National Seed Policy Formulation*, which was endorsed by the FAO Commission on Genetic Resources for Food and Agriculture in January 2015 (CGRFA).¹³ This guide calls on countries to recognize and support both formal and informal seed systems when developing and/or reviewing national seed policy and legislation.

The SD=HS programme will continue to review and raise awareness on the options to change seed policy and legislation, including review of intellectual property laws and practices (discussed below), and to build capacity among farmers and civil society organizations (CSOs) to realize this. This is where the value added of the SD=HS programme and its closely interlinked pillars becomes most evident. For example, establishing a pilot Farmer Seed Enterprise (FSE) in Zimbabwe (Pillar 2) will allow testing and improving multiple aspects of the current seed law and how it affects farmers’ rights to produce and sell seeds in local markets. Although the FSE may not immediately be registering its own varieties, a revised policy of varietal registration will eventually be important for its business model. The current rules and regulations may be appropriate for national-level commercialization of varieties by large seed companies, but not necessarily for FSEs targeting small-scale farmers in micro-specific and marginal conditions.

As referred to above, an elaborate baseline study was undertaken in the eight countries initially covered by the SD=HS Programme, mapping the seed law provisions that impact on farmer seed systems and livelihoods. The studies have been validated and discussed at regional/national meetings organized in Zimbabwe, Laos and Peru in 2015 and 2016. These meetings brought together farmers, policymakers, the private sector and CSOs, and served as important events for awareness raising and capacity building on the topic. On the basis of the study and meetings’ outcomes, policy briefs will be developed that clearly indicate provisions in existing laws that warrant review, providing recommended language and options for revision. As part of the SD=HS local to global scale-up pathways, exposure visits of policy makers to, for example, farmer seed clubs will be organized to further enhance their awareness on the issues faced by farmers under existing seed laws.

For each country involved in the SD=HS programme, an action agenda will be drafted in collaboration with national partners aimed at advocating for policy change, in particular with respect to those policies impacting the work and objectives of the three pillars. In addition, and since windows of opportunity for realizing policy change are often hard to predict and dependent on many external factors, the programme will take up any serious opportunity for policy intervention in the countries where programme partners are active and collate these experiences for a more effective global level interventions.

Another important aspect will be tackling the trend of increasing investments in *regional harmonization* of seed laws (including intellectual property rights), which tend to again ignore the interests and special features of smallholder farmers. SD=HS will monitor these trends and, where

¹² Available at: <https://www.grain.org/article/entries/5153-map-seed-laws-around-the-world>.

¹³ FAO. (2015). *Voluntary Guide for National Seed Policy Formulation*. Rome: FAO. Available at <http://www.fao.org/publications/card/en/c/272c15fb-0949-479d-aba9-72d918891fc5/>

possible, aim to increase recognition for, and alignment with, the realities and needs of smallholders on the ground, again in close relation to the other pillar activities such as the operation of seed fairs, FSEs and nutrition programmes. For example, while Zimbabwe's Plant Breeders Rights Law of 1979 may currently be favourable to farmers exchanging and (locally) selling seeds, there is increasing pressure to harmonize the intellectual property rights (IPR) laws on varieties in the region through the Arusha Protocol (which is based on the more stringent UPOV 1991 Convention). The Arusha Protocol, if it enters into force, will raise issues for Zimbabwe such as whether or not to ratify the Protocol, its relationship with the national Plant Variety Protection (PVP) legislation that allows exchange and sale of protected varieties, and the impact on smaller-scale seed businesses and farmers. The situation will need to be carefully monitored. The FSE, in collaboration with other similar initiatives in Zimbabwe, will play a role in informing and influencing this process by questioning the suitability of the Protocol for Zimbabwe, highlighting the impact of the Protocol on smallholder farmers and, as necessary, proposing concrete recommendations grounded by their own experiences.

3) Intellectual Property Rights

As a subcategory of seed laws, intellectual property laws such as PVP and patents on plants have an increasingly important influence on the daily practices of farmers and breeders alike.

The PVP and in particular the UPOV 1991 Convention threaten the full realization of Farmers' Rights, because they may limit the rights to save, exchange and sell seed of a protected variety. Recent research¹⁴ has reaffirmed that smallholder farmers get their seed mainly from local ('informal') markets, next to using their farm-saved seed and 'over-the-fence' exchange and sales with neighbours. Very few smallholders in developing countries can afford to buy new seed from the formal sector every season. For this reason, modern varieties reach smallholder farmers mainly through the same 'informal' practices of exchange and local trade of farm-saved seed as farmers' varieties do. A PVP regime that renders these activities illegal criminalizes smallholder farmers and challenges an important component of Farmers' Rights. In addition, UPOV does not allow its member countries to add conditions that require an applicant of a plant breeders' right to show proof of legal compliance with Access and Benefit-Sharing regulations. This may facilitate the misappropriation of farmers' varieties and impede countries from adjusting their national PVP law to commitments made under other international treaties such as the CBD and the Nagoya Protocol. Furthermore, in the formulation of the PVP regime, the participation of farmers in decision-making processes is often lacking, although such participation is crucial for the realization of Farmers Rights.

Jointly with other CSOs, two SD=HS Programme partners published a PVP handbook to assist developing countries in formulating an alternative *sui generis* PVP system, which is fully compliant with the WTO-TRIPS Agreement, yet allows countries to balance their PVP legislation with the need to protect Farmers' Rights and comply with other relevant international treaties dealing with the protection of Traditional Knowledge and Benefit-Sharing.¹⁵ In order to improve the knowledge base

¹⁴ McGuire, S.J. and L. Sperling. (2016). *Seed systems smallholder farmers use. Food Security*, 8(1), 179–195.

¹⁵ Correa, C.M., S. Shashikant, and F. Meienberg. (2015). *Plant Variety Protection in Developing Countries: A Tool for Designing a Sui Generis Plant Variety Protection System: An Alternative to UPOV 1991*. APBEBES.

of policy makers and civil society on such *sui generis* systems, some of the programme partners will continue to build capacity and public awareness in this area, also with regards to the ongoing harmonization processes under the Regional Economic Communities and Free Trade Agreements. In general, in those countries that are already members of the UPOV 1991 Convention or regional instruments based on UPOV 1991, some of the SD=HS partners will (where appropriate) promote a broader interpretation and implementation of the legal exemptions available under the UPOV 1991 Convention, in order to protect the practices of smallholder farmers from being criminalized.

With regard to patents, the number of patent applications on plants is growing rapidly, although there is no international obligation to grant patents on plants. In Europe, the Enlarged Board of Appeal of the European Patent Office confirmed in March 2015 that while processes for conventional breeding (i.e. essentially biological processes) are not patentable, the plants (and animals) stemming from these processes are. In the wake of this court decision, many more patents in the field of conventional breeding (next to plants derived through genetic modification) are to be expected in Europe. The extent of patenting of plant genetic resources in developing countries is unclear, although increasingly North–South free trade agreements (e.g. the Trans-Pacific Partnership Agreement) seem to be requiring the patenting of inventions derived from plants. These developments endanger farmers and breeders, who by definition depend on existing varieties to cross and select new varieties, since patent law does not include the breeders’ exemption.¹⁶ In addition, it can seriously impact upon agro-biodiversity and, ultimately, food security as breeding materials are being privatized and put under control of a few multinational companies (see below).

The availability of a wide agro-biodiversity for farmers and breeders alike is critical, as it enables them to adjust to changing conditions due to climate change. The SD=HS Programme, through its partners and coalition with the *No Patents on Seeds!* initiative, is involved in several schemes that aim to raise awareness about these developments among policy makers and the general public.¹⁷ The programme partners will continue to do so in order to counter the expansion of patents on plants, including by providing technical expert support on processes for opposing such patents. In addition, a complementary strategy will be developed to expose and oppose recent patent applications on native traits that aim to monopolize the use of traits in public gene bank collections and in particular in their wild relatives. These gene bank collections have been established and maintained with public funding and are held in trust for the global community. It is deemed unacceptable that these materials are claimed and privatized by private companies through the filling of patents that cover the native traits contained in these public collections. These development undermine the entire ‘public goods’ mission and objective of these collections all over the world and threaten the accessibility of these materials for further breeding. SD=HS aims to strengthen and broaden the existing alliances by partnering with public and private entities that share the view that the public

Available at: <http://www.apbrebes.org/news/new-publication-plant-variety-protection-developing-countries-tool-designing-sui-generis-plant>.

¹⁶ The breeders’ exemption is one of the cornerstones of another intellectual property right - i.e. plant variety right or plant breeder right, allowing the use of a protected variety for the development and commercialization of a new variety. For more information see: South Centre. (2014). *Patent Protection For Plants: Legal Options For Developing Countries*. Research Paper 55. Available at: <http://www.southcentre.int/research-paper-55-november-2014/>.

¹⁷ See: <http://no-patents-on-seeds.org/>.

gene bank collections are not to be monopolized by any individual or corporation, and should be freely accessible to farmers and breeders alike. SD=HS partners will also continue to advocate for countries to exclude in their patent laws plants and parts thereof, biological processes, as well as inventions derived from plants from patentability.

4) Corporate Concentration and Emerging Technologies

Corporate concentration in the international seed and pesticides market has increased dramatically over the last decade, and this trend has recently become more alarming. Already, only 10 corporations own about 75 percent of the international seed market, with the three largest companies (Monsanto, DuPont and Syngenta) controlling over 50 percent of that market.¹⁸ At this moment, these three multinationals are exploring new mergers to even further increase their control over the global seed and pesticides markets.¹⁹ This development leads to greatly reduced competition in the market and reduced variety choices for farmers, as well as higher costs for seeds and chemicals. More importantly, each merger results in a bigger share of the world's plant genetic resources – maintained in the companies' private gene bank collections and/or falling within the scope of their patents – to be controlled by fewer companies. This effectively reduces the genetic material available for further breeding by farmers and breeders alike, and in that way threatens local to global food security.

Led by the ETC Group,²⁰ the programme has organized side events and published several reports on the issue of corporate concentration in the seed sector. For the remainder of the programme, SD=HS partners will continue and scale up its activities to identify developments in the seed industry – and, more generally, in the agricultural input sector – that encourage market monopoly, discourage innovation, or endanger the capacity of smallholder farmers to respond to climate change. SD=HS is strengthening and expanding its alliances in order to create awareness and build opposition, including through policy advocacy in multiple countries and fora (e.g. the working group on transnational corporations at the Human Rights Council). Special attention is given to so-called 'emerging market countries,' given their importance to the seed and pesticide industries. Should some of these countries decide to block or put up high barriers to new mergers, such deals may well become unattractive to shareholders.

In addition, SD=HS partners will keep monitoring and informing the public, CSOs and policymakers on the impact of emerging technologies on food and seed sovereignty and security. In the remainder of the programme, a report²¹ will be released describing the implications of gene drives and other new breeding technologies in agriculture, in continuation of the research already done on synthetic

¹⁸ No Patents on Seeds! (2015). *Patents on plants and animals - time to act for European politicians*. Available at: <http://no-patents-on-seeds.org/en/information/background/patents-plants-and-animals-time-act-european-politicians>.

¹⁹ DuPont with Dow and Syngenta with Chem China, while Monsanto is said to have started talks with BASF and Bayer. Source: ETC Group. (2016). *Merge-Santo - New Threat to Food Sovereignty*. Available at: <http://www.etcgroup.org/content/merge-santo-new-threat-food-sovereignty>.

²⁰ Action Group on Erosion, Technology and Concentration

²¹ In addition to workshops at relevant meetings of, for example, the Convention on Biological Diversity (CBD) and the World Social Forum.

biology and climate-smart agriculture. This will enable CSOs and governments to consider specific regulatory steps that will make it possible to either benefit from or reject each of the breeding technologies.

5) Public Research and PGRFA Access

Facilitated access to PGRFA is an important aspect of Farmers' Rights. Often the greatest impediment to well-functioning, farmer-managed seed systems is the lack of access to a portfolio of diverse crops and varieties. Access to gene bank materials and increased cooperation between local communities and the public research sector is an important strategy to increase diversity in farmers' fields.²² The FFS, established and supported under Pillar 1, form a useful vehicle for facilitating farmers' access to breeding materials and gene bank collections. They can also promote collaboration with public breeding programmes through participatory breeding and variety selection, and organize breeders and extensionists to support the farmers' management of a wider diversity portfolio. Collaboration creates a win-win situation, providing access to more diversity to farmers and a distribution channel of new breeding materials for public sector breeders. National policy should provide support to institutional policy, forging such forms of collaboration and providing a platform to jointly consolidate breeding goals responding to the needs of the small-scale production sector.

The SD=HS programme aims to promote such collaboration on global, national and local levels through various activities. On the global level, lessons and best practices derived from Pillar 1 will be fed into international policy-making processes informing, for example, programming activities in the context of the Treaty's Benefit-Sharing Fund and the UN Sustainable Development Goals (SDGs) agenda. On national and local levels, some SD=HS partners will work on the development of protocols supporting community seeds banks and the establishment of partnerships between different farming communities and (inter)national gene banks and research institutions in order to facilitate access to, and the repatriation of, crop genetic resources and participatory research. In addition, the programme will aim to involve and engage researchers in the FFS and provide trainings to researchers on participatory research methods.

6) Policy Advocacy on Women, Seeds and Nutrition

Despite the fact that the current global agricultural production is, in theory, able to feed the world's people, 870 million people suffer from hunger²³ and 2 billion are affected by one or more micronutrient deficiencies.²⁴ Moreover, more than 1.9 billion adults are overweight and over 600 million are obese.²⁵ Food biodiversity offers a nutrition resource that can adequately address the

²² In addition to farmer-to-farmer exchanges and barter markets, which are the predominant source of seed for most smallholder farmers.

²³ Food and Agriculture Organization of the United Nations (FAO). (2015). *The State of Food Insecurity in the World 2015*. Rome: FAO.

²⁴ FAO. (2012). *The State of Food Insecurity in the World 2012*. Rome: FAO.

²⁵ WHO. (2016). *Obesity and Overweight Fact Sheet*. Geneva: WHO.

multiple burdens of malnutrition by offering all dietary energy, macro- and micronutrients and other beneficial bioactive constituents.²⁶

Among the key strategies to combat hidden hunger, dietary diversification seems to have received the least attention in the past decades. However, other interventions such as nutrient supplementation and bio-fortification have occupied a more prominent role in global initiatives. These initiatives do not recognize the social determinants of preventable malnutrition and are unsustainable. During its Fourteenth Regular Session in 2013, the CGRFA highlighted the importance of biodiversity for food and nutrition, and noted that its potential role in nutrition is underexplored and undervalued. Subsequently, the CGRFA endorsed the *Voluntary Guidelines for Mainstreaming Biodiversity into Policies, Programmes and National and Regional Plans of Action on Nutrition* in 2015. The objective of the SD=HS global policy work on nutrition is to advocate for the implementation of these guidelines and thereby contribute to promoting the knowledge, conservation, development and use of varieties of food plants as well as NUS and other wild species, ultimately leading to improved nutrition, health and food security.

In addition to focusing on food biodiversity (especially NUS) to promote improved dietary quality and reduce the prevalence of micronutrient deficiencies, the programme will also focus on the role of food biodiversity as a safety net against **seasonal hunger**, which is cyclical, predictable and preventable, and yet still affects 600 million people every year.²⁷ In the global Pillar 3 baseline study, differences were observed between the coping strategies employed in two SD=HS project countries, reflecting divergent social relations and agro-environmental conditions, and suggesting that there is no simple fix to food insecurity. The SD=HS Programme aims to shorten the seasonal hunger period by improving the supply of staples (Pillar 1) and building on people's hunger coping strategies through diversification of crop production and introduction of more drought-resilient and nutritious food crops such as legumes.

To achieve the global policy objectives of SD=HS Pillar 3 – *Women, Seeds and Nutrition* – activities should follow a human rights-based and multi-sector approach, focusing on the following central aspects:

Health – The Global Nutrition Report 2016 concludes that *“The scale up of nutrition-specific interventions for undernutrition has been slow and uneven: implementation of fortification and supplementation programs—such as Vitamin A and zinc supplementation—has been stronger than health promotion-based approaches such as exclusive breastfeeding and dietary diversity promotion. Universalization of primary healthcare systems provides an opportunity to scale up these interventions further.”* The SD=HS programme will advocate at national nutrition and health forums for increased inclusion of plant varieties and NUS into food-based dietary guidelines and other nutrition education materials. The SD=HS programme countries will also advocate to link lessons and best practices on the ground regarding the contribution of food biodiversity in local/traditional food systems to nutrition and health, and incorporate this knowledge into curricula for health and nutrition workers.

²⁶ CGRFA. (2013). *Review of key issues on biodiversity and nutrition*. Rome

²⁷ S. Devereux, B. Vaitla, and S. Hauenstein Swan. (2008). *Seasons of Hunger: Fighting Cycles of Quiet Starvation among the World's Rural Poor*, London: Pluto Press.

Agriculture – In line with the CGRFA *Voluntary Guidelines for Mainstreaming Biodiversity*, the FFS (implemented in support of Pillar 3 will look at mechanisms to improve the seed production system of plant varieties and NUS with appropriate nutrient profiles. Similar to the activities described for the health sector, the programme will explore how local knowledge and lessons from the programme can be included in the curricula for community education (such as Healthy Harvest²⁸) and that of agricultural schools and universities.

Various activities will focus on consumer awareness of the value (in particular with relation to the nutrition and health attributes) of plant varieties and NUS by organizing food festivals, diversity fairs and awareness campaigns, and publishing recipe books. For these activities, synergies will be sought with similar initiatives through collaboration and networking.

Research – FAO, in response to the request of the CGRFA, conducted a review of the key issues on biodiversity and nutrition. The review concluded that in order to build a base of reliable reference evidence that allows food biodiversity to be acknowledged and valued for its actual and potential role in reducing malnutrition, three information gaps need to be addressed:

- Food consumption/dietary assessment to capture information on food biodiversity
- Nutrient composition data
- Characterization of food systems and ecosystems for their ability to provide sustainable diets.

The global framework for the Pillar 3 baseline was designed to capture women's diverse nutritional sources and food biodiversity both in hunger and sufficiency periods, the seed systems of traditional nutritious crops, including NUS, and the roles of women farmers in improving food biodiversity of the communities.

The findings of the Pillar 3 baseline study in Vietnam and Zimbabwe clearly showed that, in both countries, the communities rely on a number of collected wild food (and non-food) plants and minor food crops for households' food and nutrition security throughout the year. At the same time, increased consumption of a number of collected food plants (of which some appeared to be less utilized during periods of relative sufficiency) and parts of regular food crops was observed, particularly during the period of scarcity. In both Vietnam and Zimbabwe, women were responsible for the collection and utilization of wild food plants, and were known to possess knowledge on their perceived nutritional and/or health benefits.

The programme uses community-based participatory research methods and tools to capture and enhance local indigenous knowledge on food biodiversity. It will integrate these findings with scientific knowledge and explore ways to share this knowledge, for example, through FFS manuals, video films and events for women farmers. At the same time, SD=HS partners will collaborate with national research institutes to generate more data on the nutrient composition of local and traditional foods and NUS. The results will comprise essential input for existing food composition

²⁸ Food and Nutrition Council of Zimbabwe, the Food and Agriculture Organization of the United Nations (FAO), and the United Nations Children's Fund (UNICEF). (Undated). *Healthy Harvest: A training manual for community workers in good nutrition and the growing, preparing, and processing of healthy food.* [http://www.fao.org/fileadmin/templates/tc/tce/pdf/Healthy_Harvest_training_manual .pdf](http://www.fao.org/fileadmin/templates/tc/tce/pdf/Healthy_Harvest_training_manual.pdf)

databases. Research findings will be shared through semi-academic and a side event of a relevant conference (to be determined). New and improved gender-sensitive tools and concepts for the communities working on food biodiversity and seeds and nutrition will be used for local and global policy engagement and made available on the SD=HS website for other researchers and field staff.

Operational research conducted under the SD=HS programme will further contribute to filling the three gaps mentioned above, and strengthen the evidence base for the role of biodiversity and NUS in food and nutrition security and health. In addition, SH=HS will conduct research to contribute to the understanding of the nature and coping mechanisms during seasonal hunger periods, which tend to be overlooked by research and are not well captured in the relevant literature. This information can then be used to inform decisions at sub-national, national and global levels, and support countries mainstreaming the sustainable use of biodiversity in national food and nutrition action plans. To this end, the programme will develop advocacy materials and policy briefs tailored for policy makers and consortium partners and target beneficiaries will organize and participate in international, national meetings with action outcomes that promote biodiversity for nutrition and health.