



## The 2020 Svalbard Seed Summit

# Genetic diversity for more resilient food systems

*Summary of a summit held on Tuesday, 25 February 2020 at the Longyearbyen Cultural Centre*

The global community has committed to end hunger by 2030 and has identified genetic diversity as an important target. Most food production starts with a seed, whether the crop is consumed by humans or as feed to farmed animals. Major reports in recent years stress the need for genetic diversity.

The 2020 Svalbard Seed Summit highlighted the growing need for genetic diversity for more resilient food systems. The Seed Summit was organised by the Norwegian Ministry of Agriculture and Food, NordGen and Crop Trust on the occasion of the major seed deposit at the Svalbard Global Seed Vault the same day. After the Seed Summit, 35 institutions deposited an additional 65,119 accessions in 188 boxes into the Seed Vault. This brings the total to 1,050,000 accessions in the Seed Vault, which is the largest safety backup of the world's crop diversity.

**Grethe Evjen**, Norwegian Ministry of Agriculture and Food, chaired the two first sessions, while **Stefan Schmitz**, Crop Trust, chaired the last session. After the Seed Summit, all participants travelled to the Svalbard Global Seed Vault for the largest deposit since the official opening of the Seed Vault in 2008.

### SESSION I

#### CROP GENETIC DIVERSITY: WHY IT MATTERS

**Simran Sethi**, journalist and author, opened the Seed Summit with the keynote *From genetic diversity on farms to the food on your plate*:

*The staggering loss of most crop varieties has happened in the last 100 or so years, and the creation and consolidation of the modern seed market has taken root in the last 40 years. In the long trajectory of how we have fed ourselves,*

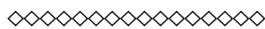
*these changes in biodiversity are quite radical and new. We must save biodiverse crops ex situ in stored collections, in situ in the wild and on farm and also in vivo, in life, on the plate by stretching our palates beyond the small handful of crops that dominate the global standard diet; by frequenting the markets where more diverse foods are sold; and by supporting farmers, seed savers, chefs, everyone who recognizes that if we increase diversity in all its manifestations, we become stronger and more resilient.*



Conference photos: Cierra Martin for Crop Trust

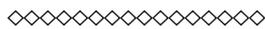
**Hannes Dempewolf**, Global Crop Diversity Trust, explained why the Svalbard Global Seed Vault matters to genebanks:

*The Svalbard Global Seed Vault provides an opportunity for seedbanks from all over the world to store a second-level safety back-up of their collections, as recommended by international standards. The Seed Vault is a safe and secure facility, soundly managed by a complementary partnership between the Norwegian Ministry of Agriculture and Food, NordGen and the Crop Trust. As figures show, an ever-increasing number of seedbanks are using the facility to deposit more and more seed samples. In addition, the Seed Vault has also become an important symbol for the whole genetic resource community.*



**Godfrey Mwila**, Zambia Agriculture Research Institute, suggested how linkages between genebanks and on-farm conservation could be advanced:

*Increasing support is necessary for in situ and on-farm conservation through expanded capacity building efforts of all actors, especially farmers and farming communities, and increasing support to sustainable use activities which emphasise participatory approaches and promote public-private partnerships. Global policy frameworks such as the Sustainable Development Goals (SDGs), Convention on Biological Diversity (CBD) and International Treaty for Plant Genetic Resources for Food and Agriculture (ITPGRFA) provide entry points for increasing this support.*



**Regine Andersen**, Fridtjof Nansen Institute, Norway, explained how the realisation of Farmers' Rights contribute to food security:

*Farmers' Rights are basically about enabling farmers to continue contributing to crop genetic diversity and to benefit from its utilization. As such, they are key to seed security and thus to food security. Research shows that there are significant potentials for improving food security among rural poor in realizing Farmers' Rights related to crop genetic diversity.*

International genebanks play a key role in the global conservation system. Three centres shared some of their experiences in exploring diversity, sharing for use.

**Martin Kropff**, International Maize and Wheat Improvement Center (CIMMYT):

*Maize and wheat are essential for livelihoods and nutrition, but population growth and climate change are putting pressure on these staple crops. Preserving their genetic diversity is an essential component of our work. CIMMYT's genebank allows scientists to make 10,000 years of genetic diversity available for future generations, through global seed distribution, breeding stress-tolerant and high yielding varieties, and responding to pests and diseases.*



**Marco Wopereis**, World Vegetable Center (WorldVeg):

*The World Vegetable Center works through the formal and informal seed sector to connect vegetable diversity with people for healthier lives and more resilient livelihoods. Vegetable diversity (including wild relatives) is threatened by urbanization and diet changes and requires urgent conservation, in particular in Africa. Vegetables in general deserve much greater attention in global R&D efforts.*



**Juan Lucas Restrepo**, The Alliance of Bioversity International and International Center for Tropical Agriculture (CIAT):

*Agrobiodiversity is a key resource and tool that connects the Alliance's work at the nexus of agriculture, environment and nutrition. We focus on conserving, using and mainstreaming agrobiodiversity to contribute to multiple Sustainable Development Goals. The Alliance holds and distributes the world's collections of beans, forages, cassava and banana. In Colombia we will soon open Future Seeds, an innovative genebank that expands our work on crop diversity, research, capacity building, and public engagement. Our genebanks have distributed more than half a million samples to recipients in more than 160 countries where they have been used to find solutions for challenges like*



climate resilience (production and pastures), nutrition, and livelihoods. So safeguarding and using agrobiodiversity cannot be de-linked in order to serve society and present and future times.

## SESSION II GENEBANKS: LEARNING FROM EACH OTHER

This session was devoted to address issues of relevance to the management of genebanks and to facilitate the sharing of experiences among the representatives of genebanks present.

**Shakeel Jatoi**, National Agricultural Research Centre, Pakistan, shared experiences of running a national genebank:

*Running a large national genebank is challenging for countries having limited resources. Genebank models that are more economical and efficient need to be introduced. Direct and related activities of genebank operation management need to be supported by the global partners in terms of guidance, human resource development and updating of facilities. National coordination and collaboration of diverse stakeholders must be ensured as well as collection activities, regeneration and on-farm and in situ conservation.*



The International Center for Agricultural Research in the Dry Areas (ICARDA) is the only depositor to have requested the retrieval of their seeds from the Seed Vault. **Ahmed Amri**, ICARDA and member of the International Advisory Panel to Svalbard Global Seed Vault (IAP), shared ICARDA's main lessons from this experience:

*Safety duplication is crucial and the long-term storage at Svalbard Global Seed Vault is highly rewarding for ICARDA. We retrieved some of our accessions stored at Seed Vault and through intensive regeneration efforts supported by*

*the CGIAR Genebank Platform and the Global Crop Diversity Trust, we have been able to reconstitute large portions of our active and base collections in Lebanon and Morocco. Numerous stories and reports in the media have appeared that have highlighted the importance of preserving and safely duplicating the genetic resources.*



How long can seeds stay alive? **Åsmund Asdal**, Seed Vault Coordinator, NordGen, shared experiences on long-term seed storage experiments at Svalbard:

*A hundred-year seed longevity experiment was established by the Nordic Genebank in permafrost in a coal mine in Svalbard in 1986, comprising seed samples of important Nordic crops. After 30 years in storage, the results show that crops like beet, onions, cucumber and Kentucky bluegrass had maintained viability at the initial level, while wheat seed viability dropped to 79% and rye to 51% of the initial germination percentage. A new experiment is being prepared for storage in the Seed Vault at -18°C comprising seeds of 13 globally important crops produced by genebanks in India, the Philippines, Brazil, Thailand, Portugal, Germany and Sweden.*



**Kent Nnadozie**, Secretary of the International Treaty on Plant Genetic Resources for Food and Agriculture, addressed how international interdependence is addressed in global goals:

*Plant genetic resources for food and agriculture (PGRFA) are a common concern of all countries. All countries depend on PGRFA that originated elsewhere. We need international cooperation and a global network of genetic collections that come together to facilitate their continued conservation, improvement and sharing. The Plant Treaty provides the international legal framework for the governance of the management and exchange of PGRFA, as well as the policy forum for decision making, especially through its Multilateral System for Access and Benefit-sharing.*



**The Feb 2020 deposit**

- Largest numbers of depositors yet
- An additional 60,000 accessions in 170 boxes, from 36 depositing institutions
- This brings the total to around 1,050,000 accessions

### SESSION III

#### MESSAGE FROM THE SDG ADVOCATES

Prime Minister of Norway Erna Solberg took the opportunity of the seed deposit to invite her co-chair colleague of the SDG Advocacy Group, President of Ghana Nana Addo Dankwa Akufo-Addo and the SDG Advocates, to Longyearbyen, in order to discuss food security and climate change. They joined the last session to share the outcome of their deliberations with the participants at the Seed Summit.

**Olaug Bollestad**, Norwegian Minister of Agriculture and Food, welcomed the distinguished guests in an opening remark of this session:

*The Svalbard Global Seed Vault is part of my responsibility as the Minister of Agriculture and Food in Norway. The ministry manages the Seed Vault in partnership with Nord-Gen and the Crop Trust. Norway provides the Seed Vault to the genebanks of the world to give them a safe place to store duplicates of their seeds. These seeds are the building blocks in the development of crops that can have higher yield, taste better and be more nutritious. We must take care of the seeds in genebanks and in the fields of farmers. We must therefore support farmers and local communities so that they can continue taking care of seed diversity. Last year, the Norwegian Government completed the necessary technical improvements on the Seed Vault, which has been in operation for 10 years. We are strongly committed to keep the seeds safe.*



**Mariana Yazbek**, ICARDA, summarised the deliberations at the Seed Summit to the SDG Advocates:

*Our joint concern is that the loss of genetic diversity is a loss of opportunities to adapt food production to climate change, to increase food production in response to a growing population, and to diversify diets to be more nutritious. Our joint efforts are to strengthen the conservation of crop diversity, and to make this diversity available to breeders and farmers.*

*We are fortunate that there are a number of international genebanks dedicated to this work – they are important because through them researchers, breeders and farmers have access to large, diverse, well-documented collections of the world's most important staple crops. They face serious challenges, but the international community is coming together to support them.*

*But we have also learned here about the crucial work that national and regional genebanks do, focusing as they do on more local needs and crops. They also face challenges, in particular chronic under-investment by the governments responsible for them.*

*I represent one of the 30 genebanks that are present today in Longyearbyen to make safety deposits of the seeds they conserve. I work in the international genebank of ICARDA. We were among the first to make use of the facilities of the Svalbard Global Seed Vault when it opened in 2008. At the time, we considered this as an insurance policy, just to be on the safe side. A few years later, it became impossible to continue managing our international genebank in Aleppo, Syria. We were forced to retrieve our seeds from the Seed Vault and re-establish our genebank operations in Lebanon and Morocco.*

*As of today, 146 countries have ratified the Plant Treaty – the international framework for how to provide access to crop diversity for food and agriculture and equitably share the benefits arising from this. Without the Treaty, it is difficult to imagine that the Svalbard Global Seed Vault would have been possible.*

*The Svalbard Global Seed Vault is the largest safety backup of the world's crop diversity. It is necessary, but it is not sufficient. We need international genebanks. We need national and regional genebanks. And last but not least, we need to support the continuing efforts of farmers and local communities as custodians of crop diversity. Their cultivation of a rich diversity of crops are crucial both for local food security as well as for maintaining these resources for future generations.*



**Prime Minister Erna Solberg** presented her guests and shared her global commitment to the SDGs.

*Together with my friend and colleague, President Akufo Addo of Ghana, I co-chair the UN Secretary General's group of SDG Advocates. In addition to the two of us, the group consists of 15 inspiring, influential people. I'm happy that some of them have actually joined us here. Our task is to raise awareness of the Sustainable Development Goals and encourage the action we need to achieve this agenda.*

*Our actions, both as politicians and advocates, must be based on the best available science. It is therefore useful for us to learn about your discussions here today. The Seed Summit provides scientific advice and practical experiences to help guide policies.*

*One way in which we will raise awareness on SDG 2 and SDG target 2.5 is that we have agreed on an Arctic Call to Action. This is signed by the SDG advocates and the UN, and our hope is that you will support this message as well. We will spread these messages through our platforms and take them with us into future meetings on food security, climate change and other related topics. I encourage you to do the same and help us in getting the message out there.*



**President Nana Addo Dankwa Akufo-Addo** made the following statement:

*First, let me say how delighted I am to be here at this archipelago, close to the North Pole, and to witness first-hand the fantastic work that is being done in support of long-term global food security, through the preservation of seed varieties from across the globe.*

*It has been said, and it bears emphasizing, that what is being done in this phenomenal place truly represents the ultimate insurance policy for the world's food supply. I am told that Svalbard holds some one million seed samples and they come from every country in the world. This is an*

*impressive feat, and I commend the Government of Norway and the authorities of Svalbard for their leadership on this enterprise.*

*I am particularly delighted to see that this Seed Summit brings together a broad spectrum of scientists and seed-bank experts from around the world. This global effort towards conservation of agricultural crop systems is an example of best practice in how our world should tackle common challenges.*

*Climate change and its effects on agricultural systems represent an existential threat that our world faces. And how our world feeds a growing population amid the effects of climate change is going to remain a global challenge over the medium term.*

*The impressive work that national and regional seedbanks, and indeed the Seed Vault, are doing in preserving seed varieties is so important not just for crop systems conservation but for the long-term security of our world. And for this reason, the world needs to scale up its support for the work that we do.*

*As co-chair of the Eminent Group of SDGs Advocates, I strongly intend to work with my colleagues to champion the great work that you are doing and to bring greater visibility to your work. SDGs Goal 2, which speaks to ending hunger, achieving food security, improved nutrition and promoting sustainable agriculture, is so central to achieving all the SDGs.*



Members of the UN group of Advocates for the Sustainable Development Goals met to discuss food security and climate change. **Hindou Oumarou Ibrahim**, SDG Advocate, read out the *Arctic Call to Action on Food Security and Climate Change* (see below). At the closure of the Seed Summit, the call was signed by Prime Minister Erna Solberg and President Nana Addo Dankwa Akufo-Addo.



25 February 2020  
Svalbard, Norway

### **Arctic Call to Action on Food Security and Climate Change**

UN Secretary-General Mr Antonio Guterres has called for a decade of action and delivery to achieve the Sustainable Development Goals (SDGs) by 2030. With just 10 years to go, there is an urgent need for an intensified global effort to achieve the goals. The broad mobilisation of governments, business and civil society will be required. 'Now is the time for bold leadership, both individual and collective. [...] We need to move together,' Secretary-General Guterres stated in September 2019.

Members of the Secretary-General's group of SDG Advocates, which is co-chaired by Prime Minister Erna Solberg of Norway and President Nana Akufo-Addo of Ghana, met on 25 February 2020 in the Arctic archipelago of Svalbard, Norway, to discuss food security and climate change. They also took part in a seed deposit event at the Svalbard Global Seed Vault. The Seed Vault serves as a backup facility for the genetic diversity of seeds for future generations.

For decades, the number of people living in hunger was declining, but since 2015 this number has once again started to increase. According to the 2019 UN report State of Food Security and Nutrition in the World, more than 820 million people are undernourished. Reversing this trend and ending hunger and all forms of malnutrition by 2030 is an immense challenge, but it is also essential if we are to reach the other SDGs. In particular, SDG target 2.5 – maintaining the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species – is highly relevant to these efforts, and was addressed specifically in Svalbard.

#### **The following points formed the basis for our discussions in Svalbard:**

The world's land and water resources are being exploited at an unprecedented rate, and this is threatening to undermine humankind's ability to feed itself. Climate change is making the situation even worse, as increased climate variability and more frequent extreme weather events threaten to disrupt, and over time diminish, the global food supply. The impact of climate change is having serious consequences for agricultural production. There is an urgent need for increased ambition and action to promote effective implementation of the Paris Agreement.

If we are to succeed in ensuring food security for growing populations in an increasingly warmer world, we must continue to adapt our food systems to climate change as well work to make them more inclusive and efficient. Transforming our food systems offers a pathway to improved resilience of ecosystems, reduced vulnerability of rural populations to climate impacts, and enhanced contributions to climate change mitigation. Genetic diversity is essential for ensuring sustainable agriculture. By making use of this diversity, we can develop crops that are more heat-, drought- and flood-resistant.

But the clock is ticking. SDG target 2.5 calls on the international community to maintain the genetic diversity of both crops and livestock by 2020, and promote access and benefit sharing. Currently, the international community is not on track to reach this target.

The genetic diversity of food is essential for food security. Today, some 60% of our daily calories come from just four crops (wheat, rice, maize and potato). It is the vast range of species and varieties cultivated by farmers that underpins the resilience of our food supply; in fact, we are dependent on this diversity for our food security, wellbeing and health.

Small-scale food producers play a key role in ensuring global food security, but they are vulnerable to the impacts of climate change. Supporting these producers so that they can adapt to climate change is therefore a key priority.

The UN Secretary-General hosted Food Systems Summit in 2021 offers an opportunity to catalyze large-scale public mobilization and actionable commitments to make food systems sustainable, climate adapted, resilient and to the benefit of all.

**We, the group of SDG Advocates hereby issue our Arctic Call to Action on Food Security and Climate Change:**

**We remind all people as a matter of urgency that the Sustainable Development Goals (SDGs) and the goals set out in the Paris Agreement are the roadmap to our common future, and that we must leave no one behind as we strive to reach these goals.**

**We urge all governments, as well as the private sector and civil society, to heed the UN Secretary-General's call to commit to a decade of action and delivery for sustainable development, so that we can reach the SDGs by 2030.**

**To this end, we call on all leaders and decision-makers to recognise the fact that the various SDGs are interlinked. We will not reach the goals if we do not eradicate hunger and combat climate change.**

**We therefore urge governments to step up their efforts to maintain genetic diversity, including through soundly managed seed and plant banks. We encourage genebanks to make use of the Svalbard Global Seed Vault as part of their strategy for securing their important seed collections.**

**We urge all citizens, in particular agricultural decision-makers, to give priority to the sustainable use and conservation of agricultural biodiversity for future generations and ensure equitable sharing of benefits arising from these resources.**

**We encourage governments, researchers, the private sector and civil society to step up their efforts to promote climate adaptation and disaster risk reduction in both agriculture and aquaculture, with a view to ensuring that small-scale food producers can maintain and increase their food production in a changing climate.**

**We stress that efforts should be taken to ensure that the coming UN Summit on Food Systems in 2021 will lead to concrete actions to sustainably transform our food systems and deliver a crucial boost to the delivery of all SDGs.**

*On Behalf of Members of the United Nations Secretary-General's group of SDG Advocates and Alumni*

H.E. Erna Solberg  
Prime Minister of Norway  
*Co-Chair of the Group of SDG Advocates*

H.E. Nana Akufo-Addo  
President of Ghana  
*Co-Chair of the Group of SDG Advocates*

**Current SDG Advocates**

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H.H. Muhammadu Sanusi II Emir of Kano Richard Curtis  
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Jack Ma  
Graça Machel  
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Paul Polman  
Jeffrey Sachs  
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Lionel Messi  
Muhammad Yunus

*On behalf of the United Nations*

Dr. Agnes Kalibata, Special Envoy for the 2021 Food Systems Summit