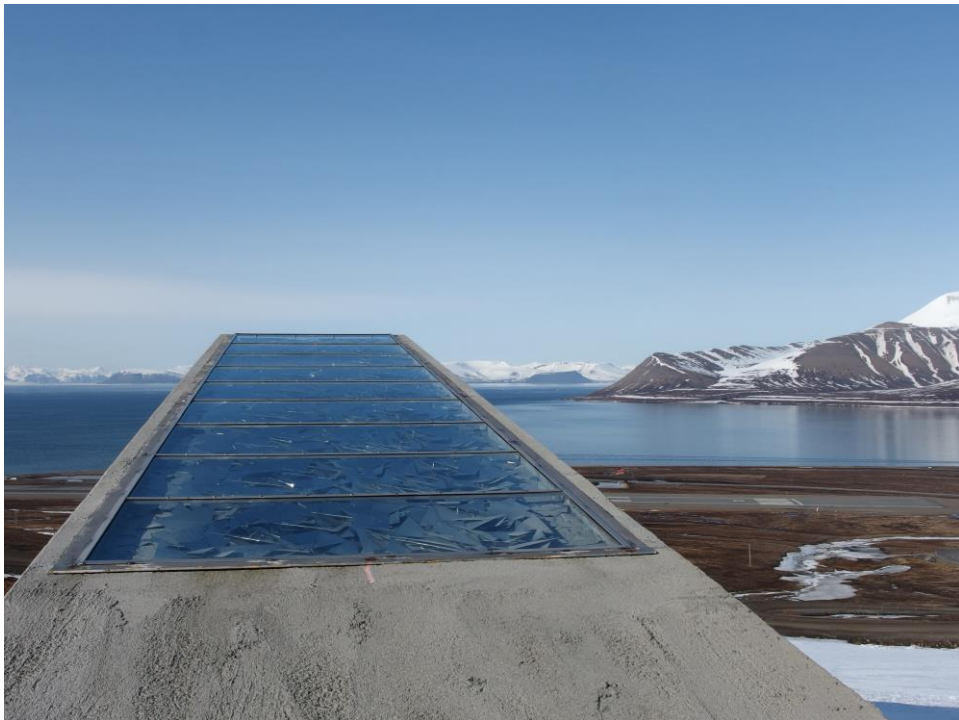




10 year technical and financial report 2007 - 2016



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Highlights from 10 years of Seed Vault operation

- 2008: The Svalbard Global Seed Vault was opened on the 26th of February. During the first year of operation 320 549 seed accessions from 22 gene banks were deposited.
- 2009: The one year Anniversary Conference “Frozen Seeds in a frozen mountain. Feeding a warming world” was organized in Longyearbyen by the three SGSV partners on February 25th-27th. The UN Secretary General visited The Seed Vault in September.
- 2010 – 2011: Significant numbers of new depositors and deposited accessions, also from non-OECD countries, mainly due to economic support from the Crop Trust for regeneration and safety duplication of threatened collections at more than 50 institutes in 43 developing countries.
- 2012: The number of deposited accessions mounts to 772 597, and SGSV has now the world’s largest repository of PGRFA.
- 2013: The film “The Back-up copy” was released. Routines for media and VIP visits in SGSV were resumed after implementing thorough security routines.
- 2015: ICARDA, one of the CGIAR-centres, previously located with its headquarters and gene bank in Aleppo, Syria, became the first depositor to claim withdrawal of deposited seeds. 38 073 accessions were returned to ICARDA units in Morocco and Lebanon on the 23rd of September.
- 2016: Total number of seed deposits after nine years of operation is 918 913. Adjusted for ICARDA withdrawals the holdings of safety duplicates mount to 880 837. Chamber two is filled to approximately 84% of its current capacity.

Front page photo: Svalbard Global Seed Vault May 2016

Foreword

The 10-year *Agreement between The Royal Norwegian Ministry of Agriculture and Food, The Global Crop Diversity Trust and The Nordic Gene Bank providing for the funding, management and operation of The Svalbard Global Seed Vault* (The Three Party Agreement) was signed by the three parties in March 2007.

The Agreement leaves according to Article 3 the responsibility for management and operations of the Svalbard Global Seed Vault (SGSV) to The Nordic Gene Bank (later Nordic Genetic Resource Centre, NordGen). According to the agreement (para 19b) NordGen shall submit a technical and financial 10 year report by the expiry of the agreement. As agreed between the parties, this 10 year report covers operation from the time of signing the agreement in early 2007 until the end of 2016.

NordGen has taken on this responsibility and task with great enthusiasm and from our point of view the ten years of SGSV operations have been an unconditional success. After ten years of operation, the Svalbard Global Seed Vault holds by the end of 2016 approximately 880 000 seed samples, which is, according to FAO estimates, more than 40% of the number of unique accessions that are conserved by gene banks worldwide. There are seed deposits from 71 different public or private holders of gene bank collections, institutes, universities, companies and NGOs. The cooperation with these is smooth, efficient and characterized by mutual confidence.

The public and media attention was huge when the Seed Vault opened in February 2008, and it has been a pleasure to see that the interest has remained on a high level, and even increased, throughout all the ten years. In this respect, a significant number of TV- and radio-shows, newspaper- and magazine- articles and other media featuring the SGSV, have contributed significantly to the important objective of increasing public awareness about the importance of conservation and sustainable use of plant genetic diversity.

NordGen wants to thank The Norwegian Ministry of Agriculture and Food (MAF), Crop Trust and Statsbygg for excellent cooperation during these ten years. Thanks also for good cooperation with depositors and not at least to all logistic partners involved; not a single seed sample has been lost during the 186 seed shipments and the approximately 2 500 seed boxes that have been sent to Svalbard from all parts of the globe.

Lise Lykke Steffensen
Director NordGen

Introduction

After the conclusion of ITPGRFA in 2004 and after international negotiations and feasibility studies, The Norwegian government decided to build a seed vault, as a facility for conserving back up samples of gene bank seed collections globally.

The idea of storing seeds in permafrost in Svalbard evolved after NordGen (at that time The Nordic Gene Bank) established a security back up of the NGB gene bank collections from 1984. The seeds were placed in an abandoned part of Coal Mine no 3 through an agreement with the owner Store Norske Spitsbergen Kullkompani.

The Svalbard Global Seed Vault was opened on the 26th of February 2008. The Vault is located 130 m above sea level, 120 m inside the mountain Platåfjellet and has approximately 60 m of solid rock above the seed store. It is constructed to give security towards natural disasters as earthquakes and sea water rise due to climate change, and also towards explosions outside.

The Royal Norwegian Ministry of Agriculture and Food is providing the physical facility through a long term rental and maintenance agreement with Statsbygg (The Norwegian Directorate of Public Construction and Property), that manages central parts of the real estate portfolio of the Government of Norway.

Operation of the Seed Vault consists of overall administration on a political level, handled by The Ministry, physical maintenance of the facility, overseen by Statsbygg and seed management and operation, overseen by NordGen.

The Norwegian Ministry for Agriculture and Food is the main funder and liable authority for the Vault. Among the responsibilities that rest with The Ministry are legal issues related to deposits, long term maintenance of the facility, adoption of budgets, including for management and operations, information strategy, security plans, liaison with authorities in Norway and abroad and constituting of IAC.

Crop Trust is contributing to the funding of SGSV activities, as part of the Funding Strategy of the International Plant Treaty, in particular through funding of gene bank collections held in trust for FAO in the CGIAR centres. Crop Trust is also encouraging and assisting gene banks, partly through projects and financial support, to deposit seeds in SGSV, and Crop Trust uses the Seed Vault actively in the outreach and public awareness activities.

Statsbygg is responsible for management and functionalities of the Vault and provides continuous monitoring and surveillance, needed maintenance and technical updates of the construction.

NordGen is responsible for management and operations of the Svalbard Global Seed Vault, in particular tasks in a broad sense related to seed deposits. The activities and operations in the Seed

Vault are conducted in cooperation with the partners MAF and the Crop Trust. In particular, handling of media, including media visits in the Seed Vault, have been conducted in close collaboration with MAF and Crop Trust. Operations, management, guidelines and policies have regularly been evaluated and considered by the International Advisory Council (IAC).

Tasks carried out by NordGen related to seed management and connected operations have, for transparency reasons, been organized in four platforms: 1) Overall administration, including IAC secretary administration; 2) Information management; 3) Practical Seed administration and 4) Public relations.

The four platforms have been well coordinated and they all contribute to the overall mission of the Seed Vault; plant genetic resource security, directly through actual seed deposits in the Vault, and through increasing public awareness and creating commitment among policy makers for long term support to gene bank conservation in general and for the Seed Vault in particular.

Seed deposits to the Seed Vault have been obtained through direct communication with potential depositors and authorities in the countries, through a transparent and updated Seed Portal webpage, showing developments in seed deposits and through efficient routines for organising seed shipments and for transfer of seeds into the storage.

The public relation activities have made holders of gene bank collections aware of the options for security storage in SGSV, it has contributed to the political and scientific commitment for being a part of the joint mission for securing plant genetic resources in Svalbard and it has increased awareness for the importance for conservation and use of these resources among the public. Public awareness activities have been coordinated and carried out in cooperation between NordGen, MAF and Crop Trust.

Annual reports have in particular emphasised the four platforms of work. This 10 year report gives an overview of ten years of operation, with special emphasis on the articles in the Three Party Agreement and responsibilities of NordGen. It gives a summary of operations and developments in the Svalbard Global Seed Vault programme.

1. Overall Svalbard Global Seed Vault administration

NordGen is responsible for managing and operating all aspects of the safety deposit process. This responsibility spans from liaising with collection holders considering depositing seed samples to operation of the databases and organization of the storage process at Svalbard. The SGSV management is organized as a project with a special status within NordGen's organization.

The overall administration in Platform 1 includes coordination and liaising with relevant stakeholders to SGSV including, but not restricted to, MAF, the Crop Trust, Statsbygg, the governor of Svalbard (Syssemmannen) and depositors. This platform also includes the provision of secretariat services for the International Advisory Council (IAC) in accordance with the Three Party Agreement.

The financial administration covers book keeping in accordance with Nordic Council of Ministries practice and annual financial statements to be presented to MAF and Crop Trust in annual progress reports. Details about budgets and financial results are outlined in Chapter 6.

Operations under the liability of NordGen have each year been reported in Annual progress reports. These are downloadable from the NordGen website

<http://www.nordgen.org/index.php/skand/content/view/full/2605>

1.1. Facility management

Management and operation of the Seed Vault is overseen through regular users meetings, where Statsbygg reports on the daily operation and the outcomes of work on the physical facility to MAF and representatives from Crop Trust and NordGen.

NordGen has from the beginning, as one of the partners defined as users of the Vault, taken part in discussions regarding management of the facility. Security for seeds and for people working and visiting the Seed Vault has been one of the major issues.

Improvements of the physical facility have been discussed in users meetings and implemented by Statsbygg, including installation of back-up power supplies, enforcement of the entrance section of the facility (called the Svalbard tube) and steps to prevent water intrusion problems in the entrance tunnel part of the Seed Vault.

In order to ensure security for people and seeds, a confidential report was made by Forsvarsbygg in 2012. Recommendations from this report have been taken into account and improvements have been made, both physical measures at the facility within the responsibility of Statsbygg and as regards routines of operation within the responsibility of NordGen.

Improvement of routines has also been implemented through discussions with the Police department at the Governor of Svalbard. Lock systems, surveillance and communication systems have been installed and improved to secure the Vault against intruders.

Mainly because of security concerns for people going inside, the Vault was closed for visitors for a 12 months period from March 2012. The local fire authority in Longyearbyen decided that only NordGen and Statsbygg staff were allowed to enter the facility until agreed terms and security measures were in place.

Such security guidelines and measures were established and agreed upon, and the Vault was reopened for visitors in March 2013. Security measures included communication devices, other security equipment and routines for e.g. limiting the number of visitors allowed to enter the Vault at the same time.

1.2. Liaising with holders of gene bank collections and depositor agreements

The main success factor for Svalbard Global Seed Vault is the extent to which it is considered and used as the security back up for plant genetic resources that are conserved in seed gene bank collections. This depends on good relations with a broad range of players in the global gene bank system consisting of international agricultural centres, regional and national gene banks and a range of research institutes, NGOs and private holders of seed collections.

By the end of 2016, NordGen has, on behalf of The Norwegian Ministry for Food and Agriculture signed depositor agreements with 77 gene banks, institutes and NGOs. One of the depositors is a private company, which entered in 2016.

During the first year of operation, depositor agreements were signed by 24 gene banks/institutes. New agreements have been signed every year since, between five and ten new agreements each year, with an exemption for 2014, when only two new agreements were signed. The yearly increase in the number of signed depositor agreements is shown in Figure 1. A list of signatories can be found in Annex 1. Six of the signatories have so far not deposited seeds in SGSV; however, three of them have signed in 2016, preparing for seed shipments in 2017.

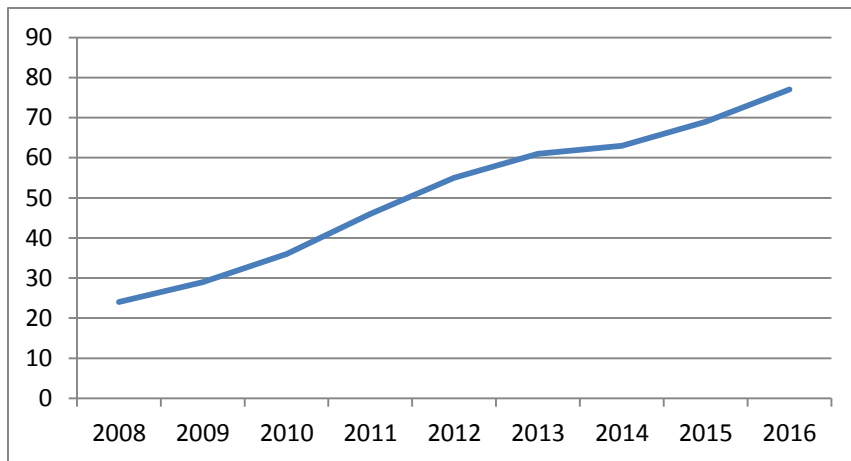


Figure 1. Increase in the number of signed depositor agreements from The Seed Vault opening in 2008 until the end of 2016.

Efforts for recruiting of new depositor gene banks have been carried out in many ways. The composition of the current depositors is the result of 1) targeted invitations; 2) an open invitation policy, 3) personal contacts through participation and presentations given in international meetings and conferences, and 4) the Crop Trust's strategy to target the most genetically unique and diverse collections of unique PGRFA for funding and technical support. The IARC collection holders have been given specific follow-up to ensure that the FAO in-trust collections form the core of the SGSV collection.

In general, the significant level of international attendance for the Seed Vault, and the offer for storing back-up copies of gene bank collections free of charge is well known, and it has led to a number of unsolicited seed deposits. Since, and even before the opening in 2008, the Vault has enjoyed significant media publicity, and encouragements for making use of the SGSV security facility have been expressed repeatedly in international fora, documents and guidelines through the years.

NordGen has considered it to be important to be present at relevant occasions where representatives for institutions holding gene bank collections are gathered. NordGen staff and partners have frequently conveyed information about SGSV at conferences and meetings. Among these, the NordGen SGSV coordinator participated in the fifth meeting of the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) in Muscat, Oman in September 2013. Such events have provided opportunities to communicate with current and potential future depositors about administrative, legal and practical aspects of the project.

Projects, mainly conducted by the Crop Trust, aiming at assisting gene banks with scarce resources in seed multiplication and shipments to SGSV, have contributed significantly to increased awareness and to actual seed deposits.

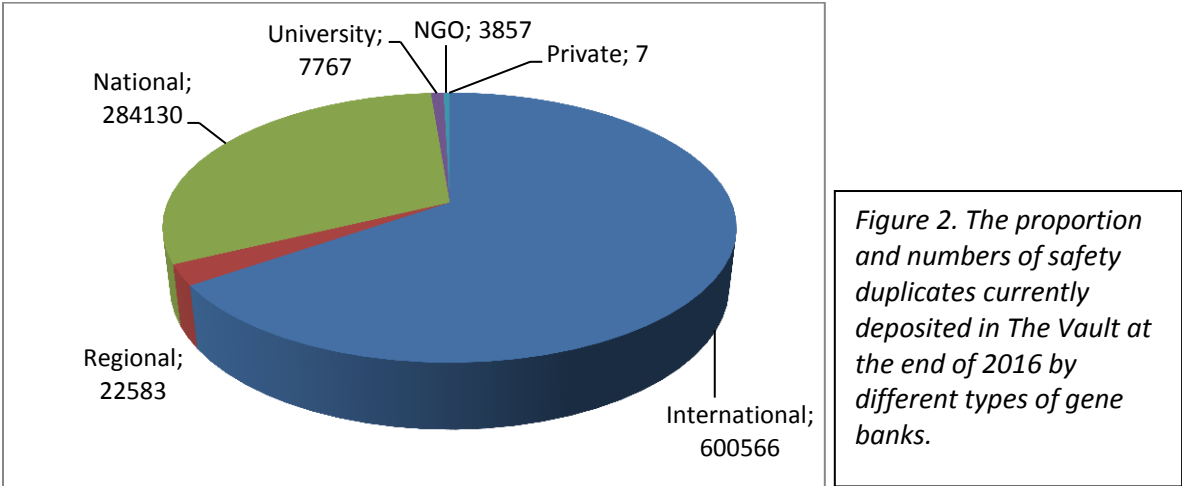
At the end of 2016 about 65% of the 918 913 seed samples that have been deposited in SGSV come from International Agricultural Research Centres (IARCs), where the CGIAR centres stand for the major part. Public national and regional gene banks stand behind 33% of the SGSV holdings.

Seed multiplication and shipments to Svalbard from the CGIAR centres have been supported extensively by Crop Trust. In addition, a Crop Trust project carried out in 2010-2011, has contributed significantly to recruit depositor institutes and actual seed deposits from gene banks in developing countries.

The steady increase in the number of depositors and seed samples conserved in the Seed Vault proves that the international community of gene banks appreciate and use the SGSV according to its objectives and intentions.

Figure 2 shows how the number of seed accessions in the Vault is shared between international, regional and national gene banks, university sector and NGO's. One private company, Temasec Life Sciences Laboratories Ltd., entered as depositor in the end of 2016 in close cooperation with the government in Singapore.

The map in Figure 3 illustrates where depositors are located. This map is shown and continuously updated on the NordGen Seed Portal website <http://www.nordgen.org/index.php/skand/content/view/full/1400>.



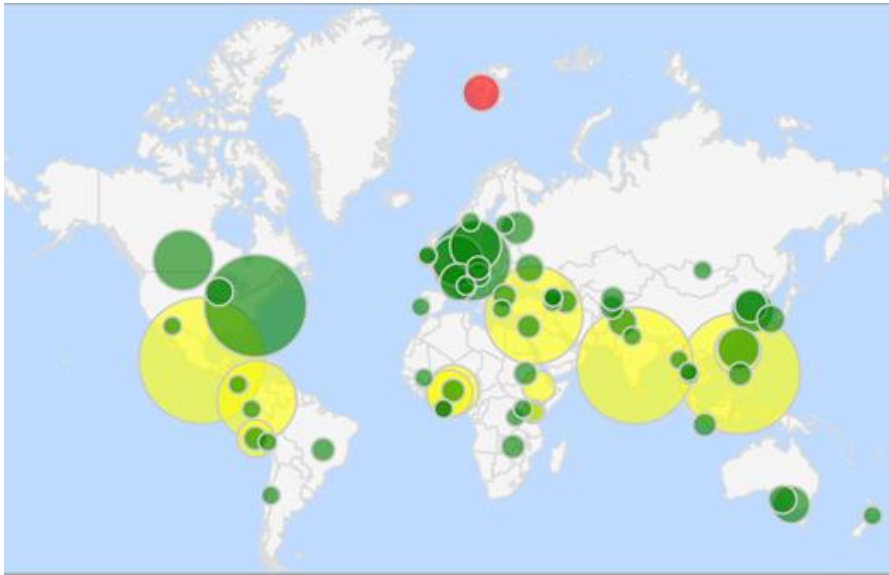


Figure 3. Location of gene banks with safety deposits in The Svalbard Global Seed Vault. The radius of the circles is relative to the number of samples deposited, and the circle size reflects the size of the deposits according to 25 size classes. Yellow circles are International Agricultural Research Centres and green circles are regional, national or subnational gene banks. The radius of the red SGSV circle is not relative to the holdings.

1.3. The depositor agreement

Holders of gene bank collections become SGSV depositors by signing the standard depositor agreement (DA) with The Norwegian Ministry of Agriculture and Food. NordGen countersigns the agreements on behalf of the Ministry.

The DA states that deposits should be consistent with relevant international law as regards conservation and accessibility of genetic material. The DA states that depositing seeds in SGSV does not change the legal ownership of the seeds. Provisions for seed deposits in SGSV could be summarized as:

- a) The material should be of importance to food security and sustainable agriculture and the depositing gene bank / institute is conserving the material that is to be deposited as a part of a long term and sustainable gene bank collection, which includes capacity and routines for multiplication of new seeds when needed.
- b) The depositor should certify that the samples that are deposited in the SGSV have been safety duplicated in a suitable gene bank.
- c) The depositor should agree to make available from their own stocks, original samples of the deposited accessions of genetic resources for breeding, research and education on terms according to ITPGRFA and the sMTA or similar.

A rewording of the DA, specifically of Article 7, was recommended by the International Advisory Council in the 2011 meeting. The Ministry prepared a draft revision of the Agreement according to the advice given by the IAC, and also suggested a restructuring of the Depositor Agreement as a whole, upon which the meeting of IAC in Svalbard February 2013 gave their advice. The aim of the revision was to make the agreement more transparent and to prevent misunderstandings.

The intention of the revised agreement was not changing the terms for depositing seeds, and caused no need for any revision of the Depositor Agreements that had been signed already. The IAC endorsed the revised agreement in 2015, and noted that the revised version did not change the substance of the agreement, but did make it clearer and less vulnerable to political misinterpretation. Since then this new version has been signed by all new depositors.

When a depositor institute or gene bank signs the agreement, it is the responsibility of the gene bank to make sure that the actual deposits comply with the provisions. The depositor agreement leaves an opening for NordGen to waive from the required first level safety duplication. So far, such waivers have not been issued.

It is NordGens experience that the wording in the current version of the Depositor Agreement is functioning well. However, we experience that routines for signing the agreement in the countries differ, and in some cases it is time consuming due to the need for high level resolutions. A more formal statement on the connection between e.g. ITPGRFA and SGSV could be useful, as signing of the DA then could be considered as a follow up on the implementation of the Treaty in countries that already have ratified.

The provisions for depositing seeds are well explained in the Depositor Agreement, and it makes discussions about different kinds of offers, donations and contributions of seeds to SGSV, easier.

1.4. Eligible gene banks and potential depositors

Media attendance and international awareness about the Svalbard Global Seed Vault and its mission is extensive. This leads to a positive and appreciated commitment and engagement from a wide range of individuals, professionals, NGOs, private companies and public institutions. The number of requests and offers for donations of valuable plant varieties and seeds is significant.

Evaluation of such requests and eligibility of depositors has been done in accordance with the provisions in the Depositor Agreement as outlined above.

The Three Party Agreement states that depositors could be “holders of public or private collections” (Article 1, para 6, Three Party Agreement). So far, the majority of depositors have been public sector institutes and gene banks, as International Agricultural Research Centres, national gene banks and universities.

Exemptions are private sector NGOs, so far represented by US based Seed Savers, Parque de la Papa from Peru and Chaipattana Foundation from Thailand. As mentioned above, Temasec Life Sciences Laboratories Ltd. in Singapore, became the first commercial company entering as SGSV depositor in 2016.

The largest number of requests for deposits / 'seed donations' not complying with the criteria is coming from individuals and companies that for more or less idealistic reasons, want to contribute to the SGSV mission. After clarifying the SGSV role as a back-up facility for gene bank collections, these requests are recommended to approach a suitable gene bank for long term conservation of their seeds, which then in turn could result in duplicates sent to SGSV.

In most cases this is accepted and appreciated. However, feedback indicates that some of these passionate plant enthusiasts have problems in finding an appropriate gene bank that is willing to take care of their valuable seeds.

During the first ten years of operation, some exemptions have been made, regarding eligibility of being a seed depositor to SGSV. One box with 88 accessions of wild flora of Svalbard has been deposited by UNIS, the University Centre in Longyearbyen. These accessions are not included in the SGSV database and Seed portal on Internet.

In addition, it has been waived from the criterion a) (of importance to food security) when seeds from forest trees were deposited from the Norwegian Forest Centre (208 accessions) and from Natural Resources Institute in Finland (7 accessions) in 2015. The actual intake of forest tree seeds was combined with visits from Ministers of agriculture and Food from three Nordic countries in February 2015. This has led to similar requests for deposits from other holders of forest tree seed collections.

On the occasion of the Royal Regent Couple of Norway visiting Myanmar in December 2014, a project that aimed at conserving seeds of threatened wild orchids in Myanmar and eventually depositing in the Svalbard Global Seed Vault was granted as a gift to the people of Myanmar. As a result of the project, seeds of 230 endangered orchids will be shipped to Svalbard in 2017.

Norway has for a long time nourished close relations with the democracy movement in Myanmar, which now form the government in the country. The very special gift, space for threatened species of wild flora orchid seeds in the Seed Vault, has been considered in the light of this. The orchid seed deposit is however, not part of the regular deposits to the Seed Vault and has been specially authorized by the Norwegian Ministry for Agriculture and Food.

1.5. The International Advisory Council

Operations in the Seed Vault and related policies are overseen by The International Advisory Council (IAC) composed of members appointed in accordance with the Terms of reference for the IAC, given

in Annex 1 to the Three Party Agreement. The members of the IAC are appointed by The Norwegian Ministry for Agriculture and Food.

The IAC has consisted of representatives from major stakeholder groups regarding international efforts for conservation and use of plant genetic resources. Members have represented and/or have been appointed by ITPGRFA, FAO, Crop Trust, CGIAR centres, Governor of Svalbard or MAF. Cary Fowler, representing Crop Trust has been chairing the IAC through the whole period.

According to the agreement, NordGen has provided secretariat services for the IAC. This includes budgetary administration, planning and organizing arrangements and general secretary services for IAC meetings including preparation of documents. Meetings and activities related to IAC have been conducted in close collaboration with MAF and Crop Trust. Minutes from IAC meetings, containing recommendations have been submitted to MAF.

IAC meetings were held in 2009, 2011, 2013 and 2015. The meeting in 2011 was held in Rome. All other meetings were held in Longyearbyen and combined with IAC inspection of the Vault facilities. Important issues discussed by the Council comprise seed deposit policy, communication with potential depositors, public awareness activities, Seed Vault operations including security provisions and the need for improvements at the physical facility.

2. Information management

NordGen maintains two databases for the SGSV; a) database for location of seed boxes in the Vault and b) database for all stored material showing descriptors received from the depositors (The Seed Portal).

The databases of SGSV are maintained on separate servers at NordGen headquarters in Sweden. All data are backed-up daily to two different locations: A dedicated backup server and a remote server located in another town.

The database for positions of seed boxes in the Vault is for internal use at NordGen. The system shows at any time where in the shelves each box is located, and it generate locations and labels for all new boxes that arrives in the Vault.

2.1. Required accession data

Depositors are required to provide electronic inventories of the material they wish to deposit prior to shipments to Svalbard. Depositors report a minimum set of descriptors necessary for unique identification of the samples. Information about what data that is required is given at the "Guidelines for depositors" webpage, which includes a spreadsheet template.

The purpose of receiving the data prior to shipment is to allow NordGen to check if the data is of satisfactory quality, as well as to check for obvious duplications of material already stored in the Vault.

The electronic inventories submitted by the depositors have been of varying quality, and several have needed adjustments and additional information before they could be uploaded to the database. However, all technical problems have been resolved in collaboration with the depositors.

The database is updated directly after every seed deposit event. The data is publicly available and searchable on the Information Sharing page of www.nordgen.org/sgsv.

Figures and numbers in the SGSV seed database has great public interest, and the data is the base for the Seed Portal on the NordGen database <http://www.nordgen.org/sgsv/>

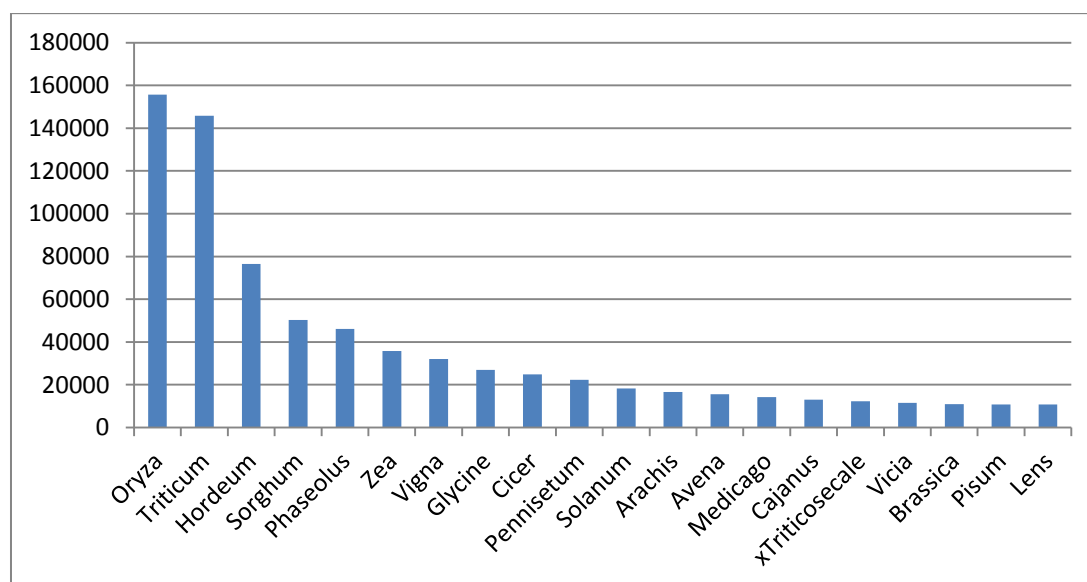


Figure 4. Details about numbers of samples of different crop species are among the information that can easily be extracted from the Seed Portal webpage. This diagram shows the top 20 crops as regards number of stored accessions.

Data requested from depositors include mandatory data and recommended types of data. Mandatory fields include FAO WIEWS Institute Code, a unique deposit box number, collection name (if such exists), accession numbers as registered in the gene bank, scientific name of the species/subspecies, country where the sample originates from, number of seeds and time of regeneration.

Recommended fields comprise other accession designations and name(s) if such exist, and accession URL (online database providing further information and reference) if possible.

Most of the requested data is necessary and useful in dialogue with partners and with media. However, NordGen suggests deleting information about the number of seeds in each seed envelope. Such data is uncertain and of limited value. It is recommended to change the status of this field towards a recommended field. Weights or seed numbers could be of value if samples are withdrawn from SGSV and information about the sample size in other databases has got lost.

The mandatory field 'accession number' is used for the accession identification that is used within the depositing gene bank. For the majority of deposited material, information in this field relates to unique gene bank code systems, with letters and numbers, used by the depositing gene bank only. Validation of this information in the database system makes it possible to check for duplication of material from the same gene bank collection, which now and then occurs, for different reasons.

This information is however, not applicable for checking for possible duplications of material from different gene banks, and so far the database system and validating process of data sets has not discovered duplications of material from different depositors.

The system for storing and updating data about deposited seeds in the Seed Vault is based on electronic, digital databases. In addition depositor institutes are encouraged to put paper sheets with minimum information about the accessions deposited inside each sealed box.

However, both electronic databases and paper sheets are expected to have limited lifetime, and more sustainable methods for conservation of data should be considered. One promising method is to print data about the accessions on microfilm and place the microfilm in each box or another place in the Vault in a way that clearly identify the material where the information belongs.

Such microfilm is about to be standardized equipment and the method guarantee that the information is conserved for at least 500 years, which could be appropriately considered in relation to the expected longevity of seed viability. Other methods, developed for storing microprint on ceramic tiles that could conserve information for 100,000 years or more is probably less relevant for conservation of Seed Vault accession data.

2.2. The Seed Portal webpage

The Seed Portal webpage <http://www.nordgen.org/sgsv/> is a part of NordGen's public website, and gives mainly technical information about depositors and seed deposits, and instructions to depositors about routines for seed deposits. Some brief general information is given on an introductory webpage.


However, for more comprehensive general information the NordGen webpage directs readers to the official webpage of the Seed Vault maintained by MAF (www.seedvault.no) and to partner webpages (MAF and Crop Trust). According to the Three Party Agreement, NordGen annual SGSV progress reports are published and accessible from NordGen's Seed Portal webpage.

The Seed Portal webpage is an important tool in NordGen's interaction with partners, especially the Crop Trust and the depositors. The data portal is also a standard reference for journalists searching for the latest statistics, biological and geographic information of the material stored in SGSV.

There are links to this portal both from NordGen's homepage and the official webpage of the Seed Vault maintained by MAF (www.seedvault.no) as well as the website of Crop Trust (www.croptrust.org).

The seed database is the basis for information presented at the Seed Portal webpage. Data and information is updated after each seed deposit event. Figure 5 shows the Seed Portal webpage, and Figure 6 the subpage containing search functions.

Svalbard Global Seed Vault Global Crop Diversity Trust NordGen



Home Depositor Guidelines Information sharing Search!

Welcome to the Seed Portal of the Svalbard Global Seed Vault

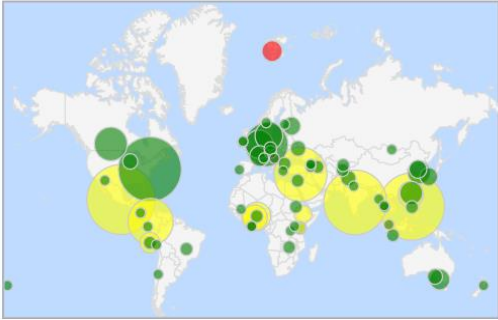
Search the Seed Portal by:

- Seed samples [880 837] [Download]
- Taxon names [12 088] [Download]
- Species [5 403] [Download]
- Genus [985] [Download]
- Country of origin [234] [Download]
- Continent of origin [8] [Download]
- Depositor institutes [71] [Download]
- Depositor and genus [2 310] [Download]
- Depositor, date and crop [5 335] [Download]
- Seed deposit events [186] [Download]

This data portal serves two main users

For depositors: The seed portal provides a way to submit inventories of the material they wish to deposit in the Seed Vault - see the [Depositor Guidelines](#) tab in the menu above.

For the general public: The seed portal is a way to find basic information about the seed samples conserved in the Seed Vault - see the [Information Sharing](#) tab in the menu above.



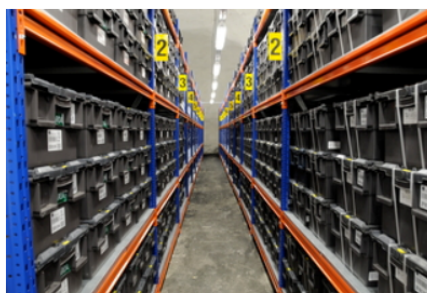
Depositor institutes Green:National genbanks, Yellow:International institutes

Figure 5. Front page of the Seed Portal webpage, showing a map indicating where all seed depositors are located. Excel-sheets providing core statistics of seed deposits and depositors are downloadable from this page.

Depositors and Material

Search the Seed Portal by:

- Seed samples [880 837] [Download]
- Taxon names [12 088] [Download]
- Species [5 403] [Download]
- Genus [985] [Download]
- Country of origin [234] [Download]
- Continent of origin [8] [Download]
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- Seed deposit events [186] [Download]



Seed boxes on the shelves in the Vault. Photo by Mari Tefre/Global Crop Diversity Trust

A total number of 880 837 accessions and 559 877 376 seeds have been stored at the Svalbard Global Seed Vault (SGSV).

Depositor institute	Institute code (WIEWS)	Seed samples safe duplicated at SGSV (accessions)	Number of taxa
Centro Internacional de Mejoramiento de Maíz y Trigo	CIMMYT	MEX002	130 291 accessions 20 taxa
International Rice Research Institute	IRRI	PHL001	122 060 accessions 67 taxa
International Crop Research Institute for the Semi-Arid Tropics	ICRISAT	IND002	110 818 accessions 14 taxa
National Plant Germplasm System	NPGS	USA996	108 022 accessions 2 277 taxa
International Centre for Agricultural Research in Dry Areas	ICARDA	SYR002	78 411 accessions 621 taxa
Centro Internacional de Agricultura Tropical	CIAT	COL003	54 664 accessions 695 taxa
Leibniz Institute of Plant Genetics and Crop Plant Research	IPK	DEU146	48 653 accessions 4 778 taxa
Plant Gene Resources of Canada	PGRC	CAN004	25 868 accessions 383 taxa
Nordic Genetic Resource Center	NORDGEN	SWE054	21 120 accessions 566 taxa
International Institute of Tropical Agriculture	IITA	NGA057	20 738 accessions 62 taxa
Centre for Genetic Resources	CGN	NLD037	19 713 accessions 388 taxa

Figure 6. The Seed Portal subpage Information sharing, gives access to more information about depositors, deposited species and accessions, and as well options for searching further details.

The Seed Portal was developed and published in 2008, when the Seed Vault was opened. Recent developments in webpage software makes it possible to create more informative and user friendly webpages, taken into account the very interesting and enthralling information that is comprised by the seed database. NordGen will, in first part of 2017, launch new and more user friendly web pages allowing for extended options for visualizing information about the SGSV seed holdings.

The SGSV is part of the global system for *ex situ* conservation of PGRFA. During the first years data from SGSV data portal was included in SINGER (The System-wide Information Network for Genetic Resources), which is the germplasm information exchange network of CGIAR and its partners.

In 2012 SINGER became part of the new GENESYS – Gateway to genetic resources database (<http://www.genesys-pgr.org/>). The provider institute code, accession number and genus in the SGSV data base is matched with data in GENESYS and the database reports whether the accession is backed-up at Svalbard or not (Figure 7).

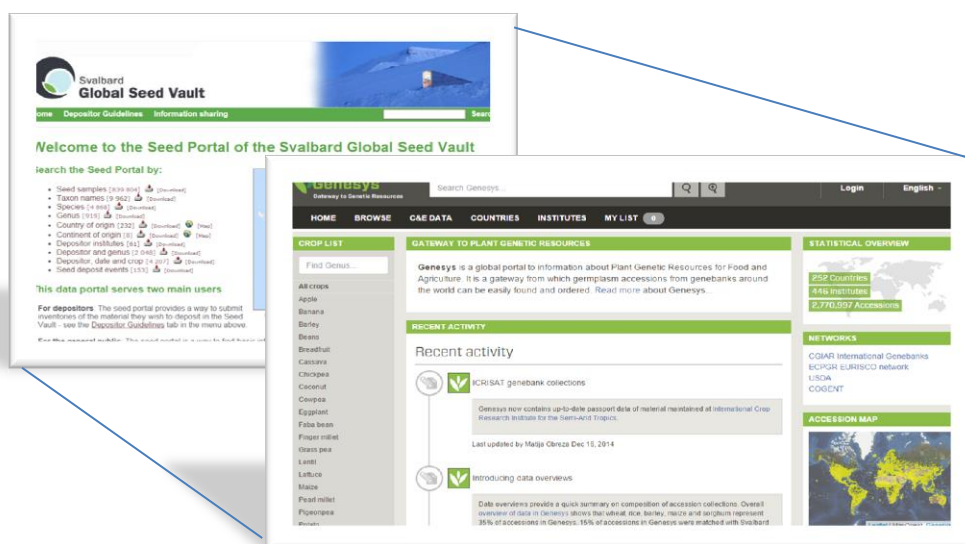


Figure 7. The “Seed Portal” is the public interface of the SGSV and the information from this database is also available through the global level accession database - GENESYS.

NordGen has at a couple of occasions during the 10 years, faced computer server problems. Due to this and some manual routines in the database, there have for shorter periods been occasional delays in updating the Seed Portal, however the portal has on a regular basis been immediately updated after each seed deposit. The withdrawal of seeds from ICARDA, which was the first withdrawal of seeds from SGSV, made it necessary to consider and develop some new routines for the seed database.

3. Practical seed administration

For practical reasons, as NordGen has no permanent staff located in Svalbard, seed deposit events are organised through so called Seed Vault Openings. Most years there have been three regular openings, which have been announced to current and potential depositors some time in advance, normally by the end of the foregoing year. In addition, bringing seed samples and boxes into the Seed Vault has been organized at additional events, e.g. related to VIP visits and/or occasions set up for filming managed by the partners or in relation to high profile media events.

3.1. Seed deposit procedures

At the end of 2016 the total number of seed shipments that have been carried out by the 71 different depositors is 186 (in the Seed Portal called Deposit events).

The process of seed deposits that has been developed and described in management guidelines includes the following steps:

- 1) Contact and exchange of information between the potential depositor and NordGen

- 2) Signing of the Depositor Agreement (for new depositors). Identification of depositor institutes is done by using the established FAO WIEWS code system for institutes. When an institute misses WIEWS code, a new code is created by FAO staff.
- 3) Validation and upload of accession lists to the NordGen SGSV database system
- 4) Shipment of seeds (packets/boxes) followed by an Import permission document issued by the Norwegian Food Authority. Shipping to Norway is the responsibility of the depositor, and the address is the SGSV logistic partner at Gardermoen airport (Oslo), who takes care of the last part of the transport to Longyearbyen.
- 5) At Svalbard, seed boxes may be intermediately stored for a few days by logistic partner Pole Position, until NordGen staff arrives for further handling.
- 6) Handling of seed boxes includes security scanning at the airport, in cooperation with the airport security staff, transport to the Vault, labelling of boxes with institute codes and numbers showing box positions in the shelf system in the storage.
- 7) When boxes are in place, this is confirmed by separate messages to the depositor institute. The figures and statistics in the Seed portal website are updated with new accessions etc.

This procedure is described in NordGen management guideline documents and has shown to work well. It is easy to comply with, it provides for necessary security and it has been efficient. Not a single shipment or seed package has been lost during the 186 seed shipments, and most seed boxes have arrived on time for the scheduled Seed Vault opening.

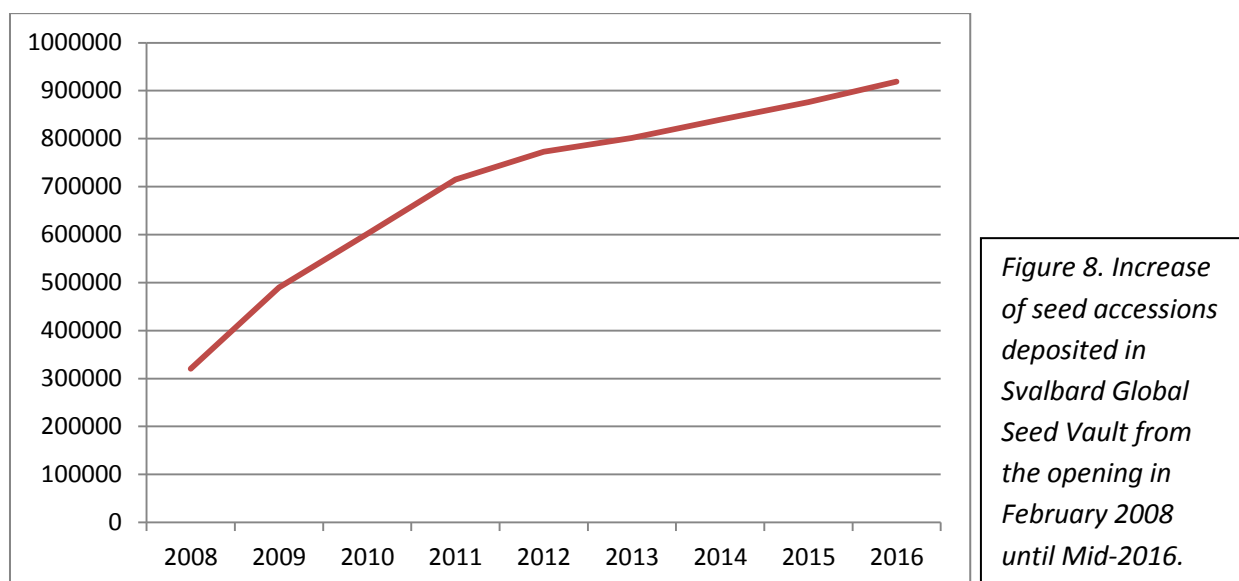
In a few cases seed boxes have been delayed and arrived after NordGen staff has left Longyearbyen. In those cases, the boxes have, with the assistance from Statsbygg, been temporary stored in the Vault, and taken into the correct position next time when NordGen staff has been in Svalbard.

The quality of seed boxes used for seed shipments varies, and comprises wooden boxes, cardboard boxes and different kinds of plastic boxes, including the standard plastic box that is recommended and used by NordGen. Some cardboard boxes were damaged upon arrival; however, no seed samples were lost or damaged due to this. It is strongly recommended to use boxes with good quality standards for seed shipments.

A significant number of spare standard plastic boxes are stored in storage hall number 3. These have, on a few occasions, been used when boxes have been damaged and in cases when seeds have arrived Longyearbyen in smaller packages or as personal hand baggage when representatives for depositors have visited the Vault in connection with seed deposits.

3.2. Conducted seed deposits

Already during 2008, which was the first year of operation, 320 549 seed accessions were deposited from 22 gene banks. By the end of 2016, this number has increased to 918 913 accessions. Figure 8 shows how the number of seed accessions duplicated in SGSV has increased through the years of operation.



The yearly number of new accessions copied in SGSV remained at a level of more than 100 000 samples during the years 2008-2011. Since 2012 the yearly increase in accession numbers has been between 30 000 and 60 000. Number of depositing institutes and deposited accessions through the years and the number of occasions when seeds have been brought into the Seed Vault is shown in Table 1.

Year	SGSV openings	Depositing institutes	Accessions	Boxes	Average acc. / box
2008	4	22	320 549	819	394
2009	6	18	169 505	452	378
2010	3	17	111 101	223	505
2011	5	29	113 364	470	241
2012	3	28	58 078	197	306
2013	4	12	29 155	82	356
2014	4	15	38 052	100	381
2015	5	15	36 130	95	380
2016	6	16	42 479	111	387
Sum	40		918 913	2549	Average 363

Table 1. Seed Vault openings, numbers of depositing institutes and deposited accessions and boxes from 2008 to 2016.

A joint effort from all involved parties resulted in a high number of seed samples ready and shipped to the Svalbard Global Seed Vault opening in 2008. The highest numbers came from CGIAR centres and some major national gene banks. These targeted actions did also lead to high deposit numbers the subsequent years, as not all seeds produced in the implemented multiplication projects were ready in 2008.

The increase in the number of depositing institutes in 2011 and 2012 is mainly due to the conclusion of the Crop Trust's Global System project for regeneration of globally threatened collections. Many of the shipments from these institutes contained lower numbers of accessions, leading to a lower number of accessions in each box. A number of gene banks receiving financial support in this project have yet not shipped the seeds. Crop Trust is regularly encouraging these gene banks to ship seeds as to obligations following the acceptance of grants.

Since 2012 the deposited numbers have been quite stable between 30 000 and 60 000 accessions per year. Deposits during the last years have consisted of lower numbers from gene banks that already have duplicated major parts of their collections, i.e. International Agricultural Research Centres and major national gene banks, and new depositors shipping smaller or medium size numbers.

Adjusted for withdrawals of seeds, the current number of accessions stored in the Vault is 880 837 accessions, deposited from 71 gene banks. The ICARDA withdrawal contained 38 073 accessions. NordGen has withdrawn three accessions.

Depositors are offered to ship so called test-boxes to the Seed Vault in addition to ordinary security deposit boxes. These contain seed samples prepared to be returned to the depositor for testing of seed germination and other parameters according to plans made in the depositor institute. Test boxes are included in the Seed Store database monitoring boxes in the shelves, but not in the Seed Portal database displaying details about seed samples.

So far, four institutes have placed all together 21 test boxes in the Seed Vault. The majority of these are shipped from ICRISAT (17 boxes). So far no test boxes have been returned.

3.3. The ICARDA retrieval of seeds

The first event of withdrawal of seeds deposited in SGSV took place in the autumn of 2015. Due to war and demolition of gene bank facilities in Syria, The International Centre for Agricultural Research in the Dry Areas (ICARDA), faced severe problems regarding seed conservation and gene bank operations at their headquarters in Aleppo. However, due to systematic deposits of seeds in SGSV through all the years from the opening in 2008, about 80% of the ICARDA seed collections had been safety duplicated in the Seed Vault and could be returned from there.

ICARDA decided in September 2015 to reclaim parts of the ICARDA seeds in SGSV, and multiply seeds and establish new gene bank collections at other ICARDA units. In the end of September 128 boxes containing 38 073 accessions (of an ICARDA total of 116 484), were taken out of the Vault and arrived in Lebanon and Morocco approximately two weeks later.

Before the withdrawal of seeds took place a formal agreement concerning responsibilities of the withdrawal was signed by ICARDA and the Ministry for Agriculture and Food in Norway. The fact that

ICARDA had provided plant health documents for seeds when shipped to the Vault made the import of seeds back into Lebanon and Morocco easier.

Reports from ICARDA indicated that the seeds arrived in good condition, most of it was sown already the same autumn, and the multiplication of seeds is in good progress. It is indicated that seed of retrieved accessions could be sent back to SGSV already in 2017.

3.4. Future deposit assessment

The prevailing stream of seed accessions to the Svalbard Global Seed Vault from gene banks all over the world shows that the global community of institutions and governmental bodies have significant trust in the Norwegian offer for depositing duplicates in the Seed Vault. This part of the SGSV operation, which should be considered as the most important part, has been an unquestionable success.

Looking at the year by year increase in seed deposit numbers (Figure 3), it is observed that the yearly number of seed samples deposited shows a declining curve. This is due to the fact that the large collections at the International Centres (IARCs) and some of the large national gene bank collections already have copied major parts of their collections in SGSV. Some major national collections are still not backed up in SGSV (China, Mexico) and some have so far copied only small parts of their collections (India, Brazil, Japan, Russia).

Some of these have expressed intentions to deposit backup copies in SGSV, but the scope, numbers and time table remains unclear. Many smaller gene banks have also expressed intentions to send seeds, but also for these, detailed plans are not presented. Lack of resources for multiplying seeds, and even for packing and shipping, is given as the main reason for not realising deposit plans. For some countries, there are also political reasons for not signing the agreement and for not depositing seeds at SGSV.

As many of the larger gene banks already multiplied major parts of their collections, the average size of collections that new depositors would want to deposit seeds is expected to become smaller, and consequently the average size of each deposit is likely to be smaller.

Because of this, NordGen expects the number of accessions deposited each year to be smaller than during the first years of operation, however, to be quite stable on today's level, between 30 000 and 60 000 accessions per year. Measures to keep up high figures could be economical support to gene banks lacking resources, especially for shipment of seeds, introducing other kinds of incentives encouraging seed deposits or even invitations to countries on a political level. The Svalbard Global Seed Vault represents a big potential for positive media attention, which might attract gene banks and countries towards a closer cooperation.

The rapid and efficient execution of the ICARDA request for returning seeds showed that this kind of operations can be handled promptly and safe as well. Despite, plant health documents are not required for seeds that are shipped to the Vault, the ICARDA case showed that it is a significant advantage to have seed boxes followed by such documents in the case of withdrawals.

3.5. Storage capacity assessment

After ten years of operation, only one of the three Seed Vault chambers is being used. The two other halls will be prepared for receiving seeds when more storage space is needed. Preparations for making the next chamber ready for use must start 1.5-2 years before the first seed boxes arrive. Cooling systems must be installed and the temperature must be brought down to -18°C. The process of bringing the temperature down to -18°C in hall nr 2 took almost two years. It is anticipated that freezing down the next chamber will take less time than the first one.

It is therefore important to make calculations and predictions on expected future deposits, in order to have the next chamber ready when needed. As the collection has been growing, the capacity of chamber 2 and the coming need for the next chamber has been analyzed regularly.

The current holding by the end of 2016 is 2 424 boxes, including test boxes (21) and two boxes with seeds from the local Svalbard flora. Due to the retrieval of seed boxes to ICARDA there was a decrease in the total number of boxes in the Vault during 2015.

The total storage capacity of chamber 2 with the current shelving is 2 880 boxes. The storage capacity with current shelving is then filled up to 84 %.

It is possible to mount 288 more slots by re-installing the shelf sections that were temporarily removed in 2009 (8x36 slots). This will require that the fence inside hall 2 is removed, and it will increase the capacity of seed hall 2 up to 3 168 boxes. See Figures 9 and 10 for an illustration of the increase/decrease in number of boxes over the years. By the end of 2016 there is space for receiving 744 more boxes in vault 2.

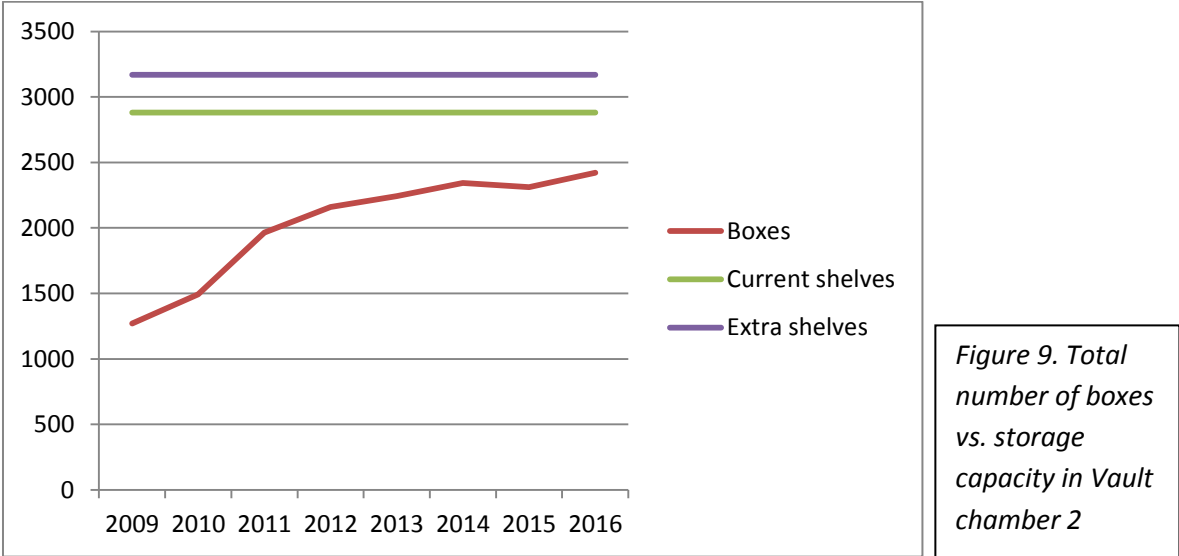


Figure 9. Total number of boxes vs. storage capacity in Vault chamber 2

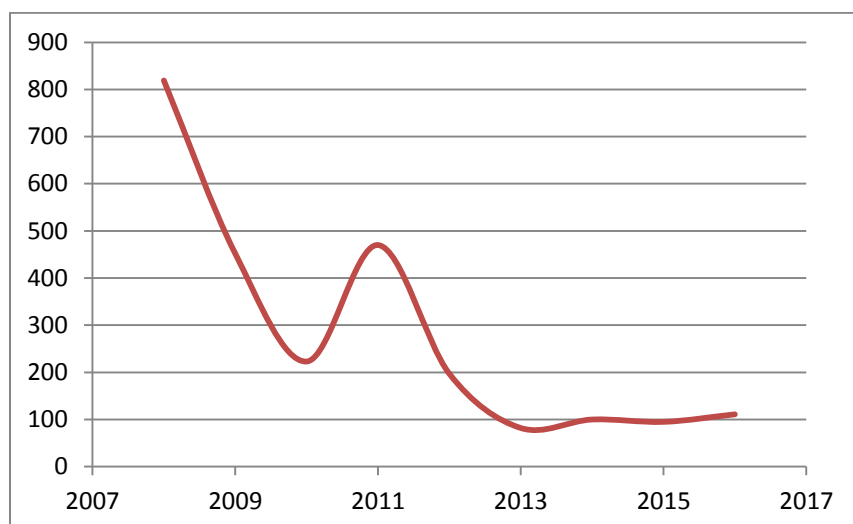


Figure 10. Numbers of boxes arriving per year 2008-2016. (Withdrawals not shown).

Current and potential depositing gene banks are regularly asked about plans for future SGSV seed deposits. Unfortunately, few gene banks and depositing institutes are able to give indications that can be used for future planning of Seed Vault activities.

When considering future deposits and storage capacity, possible withdrawals should also be taken into account. ICARDA has indicated that a second withdrawal from the remaining 197 boxes in the Vault may be requested by the end of 2017. Numbers have so far not been indicated. On the other hand, ICARDA seems to be committed to replace withdrawn samples quite promptly and efficiently.

A realistic estimate of receiving net 100 additional boxes each year means that preparing a second hall will be needed in about 6 years. Even if 150 new boxes should be deposited each year a new hall will not be needed before 2021-2022.

Uncertainties with these estimates are:

- a) how much current and future depositors want to deposit in the coming few years. NordGen asks this information from all depositors every year, but the information that is received is scarce
- b) how many new depositors that will join the project in the coming years, how much seeds they will send and how compact they will be able to pack
- c) if new withdrawals of seeds will take place

Another calculation that could be useful is the total capacity of the Seed Vault with three chambers, given that the average number of accessions in each box continues more or less constant. The average number of accessions in each box is now 362 seed pouches. This number has varied over the years, with 505 accessions per box as the highest figure in 2010 and 241 as the lowest the year after, in 2011. The last three years the average number of accessions in each box has remained quite on the average, between 350 and 390.

If this degree of box filling prevails there is room for approximately 3.5 mill accessions in the Vault.

It is, however, likely that more of the institutes and gene banks that will be recruited as new depositors the coming years will represent smaller gene bank collections. A tendency towards a more symbolic approach has also been noticed; countries, politicians, research centers, universities and gene banks want to participate in the “Great Seed Vault Mission” by depositing quite small accession numbers.

So far, the practice for putting seed samples in the Vault has been that each box contains seeds from one depositor only. Due to this practice, there are boxes containing 2, 6 and 7 seed samples only, leaving quite a lot of empty and unused space in the Vault. Many such boxes with very few seed samples could speed up the need for preparation of a second vault room.

Possible consolidation of smaller and spread accession numbers into fewer well filled boxes has been suggested and discussed. For different reasons, NordGens’ conclusion is that the potential gain from such a process will not defend the quite significant work needed for doing so.

Firstly, all procedures established for handling of SGSV seed deposits are developed according to the principle of handling sealed boxes only. This applies for the plant health provisions related to the Vault and for the Depositor Agreement where the ‘black box’ concept is crucial, for the database and for the general contact with depositors. Even if the number of accessions in each box is known, it will not be possible to consider the potential for saving space without opening the boxes, which will not be in line with the ‘black box’ conditions. Opening the boxes and moving accessions could easily cause errors, and the responsibility for such errors will be unclear if disputes should occur.

The routines are adapted to have deposits from different gene banks in different boxes. Up till now there are 21 depositors that have shipped seeds in one box only. Nineteen of these boxes contain less than 200 seed samples, eleven less than 100 samples. Theoretically, some of these could have been consolidated into fewer boxes, but this is not recommended due to reasons outlined above, and the potential for saving space is limited.

Some gene banks have deposited many boxes with relatively low accession numbers in each box. This could be due to different reasons, e.g. different seed and/or sample size, precautions for replacement of fresh seeds for certain species etc. For example there are boxes with more than 1000 seed samples (potato seeds, CIP) and there is a maize deposit of a total of 1296 samples placed in 18 boxes (La Molina University, Peru). It would not be advisable to start a process for consolidating such boxes that have been packed and sealed by the depositor.

The best solution would probably be to introduce one or may be two additional standard box sizes, adapted for smaller deposits. This will be in line with the established black box concept, the existing depositor agreement could be used without amendments, it will make no confusion if / when seeds are withdrawn and it will cause no problems to the Seed Portal database.

4. Public relations

Public and media interest for the Svalbard Global Seed Vault has been and is still quite significant. NordGen contributes to public relations activities related to the Seed Vault as a part of the Three Party Agreement for the management of the Seed Vault. MAF and in particular the Crop Trust, perform active PR activities related to the Seed Vault. NordGen provides regularly information about

seed deposits and depositors to Crop Trust and MAF as back ground information for their public relation activities.

Article 4 in the Three-party agreement between the Ministry, the Crop Trust and NordGen provides that the Parties to the Agreement are to *“contribute to and, as appropriate, take part in information activities related to the objectives and the role of the Svalbard Global Seed Vault. Such information activities should be aimed at public awareness and at potential depositors to the Svalbard Global Seed Vault. Each Party shall inform each other on a regular basis on such activities and, as appropriate, ensure good coordination of such activities.”*

Public outreach is included in NordGens’ tasks, and information about the SGSV is passed on through several arenas comprising responding to questions about the operations from the public and media, presentations given to different scientific and general audiences, interviews to the press and writing about the SGSV in various publications and platforms.

At the one year anniversary in the end of February 2009 the conference “Frozen Seeds in a frozen mountain. Feeding a warming world” was organized in Longyearbyen by the three SGSV partners. At the occasion of the five year anniversary in 2013 The Norwegian Ministry of Agriculture hosted an event in Longyearbyen. At this occasion the coffee table book ‘Seeds for the World. Svalbard Global Seed Vault’, by Pål Hermansen was published and the documentary film ‘The Backup copy’ made by Snøball Film was released (<http://vimeo.com/62688049>). The initiative to these major outreach efforts came from MAF, and NordGen contributed to the productions.

NordGen receives a large number of requests for visits, information, interviews and lectures about the Seed Vault. Enquires have been received from more than 50 different countries from all parts of the world. All serious requests are replied to. The character of enquiries is quite diverse, and it has not been possible to keep accurate records of all requests through the whole ten year period.

However, the total number of requests directed to NordGen, for visits or information since the opening is estimated to approximately 1000. The numbers have increased from close to 100 requests per year during the first years, increasing to approximately 150 per year towards the end of the period.

4.1. Web based general information

NordGens’ webpages related to SGSV have not been aiming at giving updated general information about SGSV operations and news about actions and operations related to the Seed Vault. Responsibility for publishing such information is left to the official Svalbard Global Seed Vault webpage www.seedvault.no at MAF (full URL: <https://www.regjeringen.no/en/topics/food-fisheries-and-agriculture/landbruk/svalbard-global-seed-vault/id462220/>).

Crop Trust is also publishing news about seed deposits and other events in the Seed Vault. NordGen provides information and contact details to Crop Trust for publishing news about seed deposits and

other events at the Seed Vault. Crop Trust has also developed the *Interactive visit* inside the Seed vault at <https://www.croptrust.org/what-we-do/svalbard-global-seed-vault/interactive-visit/>.

Both The Ministry and the Crop Trust have made images and specially made videos of the seed vault available to media and others through the websites. Occasionally, NordGen has made information on the deposit events and related images also available on the NordGen website. NordGen has also played an important role in updating the official webpage at MAF including by text and images from SGSV events.

NordGen often recommends media and others to search information at MAF and Crop Trust webpages in addition to The Seed Portal at NordGen. Publishing of web news from SGSV could probably be more comprehensive, frequent and interactive in order to facilitate the big interest that the public, scientist, politicians and media have in the Seed Vault. Some general information about the visit policy could probably prevent some private and touristic requests for visiting the Vault.

Narrative information about SGSV brought forward on NordGen webpages has been quite static and needs some updates. Updated NordGen SGSV webpages will be used more actively towards possible depositors, e.g. informing about yearly Seed Vault opening dates. Media would also appreciate information about these dates and about options and routines for media visits to the Vault.

4.2. Seed Vault visits

NordGen conducts, in accordance with a quite strict visitor policy, visits to the SGSV for prioritized groups and media. The general guiding principle has been that we «bring the Seed Vault to the people rather than people to the Vault». However, in connection with deposit openings and in special cases NordGen hosts selected media, policy makers and other VIPs for information and a tour in the Vault. This is done in close collaboration and coordination with the other partners.

A visitor policy has been established and adjusted during the ten years. The main rule is that visits should contribute to obtaining the main goals for the Svalbard Global Seed Vault mission, which is to increase the number of depositors and seed deposits, increase public awareness and contribute to public and private commitment and determination to the funding of global efforts for conservation and use of plant genetic resources, including management and operation of the Seed Vault.

The policy for bringing visitors inside the Seed Vault has changed during the years of operation. At the opening and the first years after, no visitors were allowed to go into chamber number 2 where seeds were stored. During a 12 months period in 2012-2013 only Statsbygg and NordGen personnel and others working with the construction and the seeds were, due to security reasons, allowed to go inside the Seed Vault.

Since March 2013 small groups have been allowed to have guided tours in the Seed Vault when strict security routines are followed. Tours for media and VIPs have normally also included short visits in chamber 2. The diversity of boxes and countries represented is astonishing, and it creates a lot of enthusiasm among all visiting groups.

The majority of requests are coming from different kinds of media, i.e. requests for information and/or visiting the Vault from TV or radio stations, web based media/video documentaries, newspapers or magazines. If suitable dates could be found such media requests are accepted and accommodated.

Other visitors are artists, policy makers, potential donors to the Crop Trust endowment fund or representatives from depositing gene banks or officials representing countries or organizations that use SGSV for duplicating national or international collections.

In cooperation with Crop Trust and Statsbygg, a list of conducted tours for visitors in the Seed Vault has been compiled, see annex 6. The list is not 100 percent complete, however, as complete as it has been possible to accomplish. Crop Trust and NordGen have exchanged information and shared responsibilities for visit requests. In cases of special importance, Statsbygg has conducted visits on behalf of other partners.

The list shows that it has been conducted 301 guided tours inside the Seed Vault in the period from 2009 to 2016. A "visit" in the list can comprise one single person, or it can comprise groups of up to 40 persons. Of these, 221 visits have been conducted by NordGen staff, 65 visits have been conducted by Crop Trust staff and in 15 cases Statsbygg has taken care of the visitors. In many cases, both Crop Trust and NordGen staff have been present and informed jointly.

Media of different kinds constitute the major part of accomplished visits. Of other VIP visitors, 11 have represented potential and current donors and visits have been conducted by Crop Trust staff. Seed depositors have visited the Seed Vault 14 times, politicians or groups of politicians have been in the vault at 28 occasions and other kinds of policy makers have visited 33 times. Other categories of visitors have been artist (24), researchers and students (15) and commercial companies not being potential donors (3).

The major part of the 173 media visits are TV-companies (64), newspapers (46), magazines (40) and radio (14). Visits have been conducted for media based in 29 different countries. The highest number of conducted media visits relates to media based in Norway (24). However, significant numbers of media visits have been carried out for media also from other countries; Sweden (20), Germany (16), United States (16), UK (13), France (12), Denmark (11), Italy (9), China (7) and Finland (5).

Between one and five media teams have been hosted, from each of Australia, Japan, Spain, Switzerland, Canada, Russia, Belgium, Greenland, Iceland, South-Korea, Austria, Brazil, Bulgaria, Israel, Netherlands, New Zealand, Poland and Ukraine.

Receiving media of different kinds has resulted in a significant number of TV-, radio- and website shows, articles in newspapers and magazines etc. Journalists are regularly asked to report back about information produced and published, URLs, pdfs etc. It is, however, varying how these requests are complied with, and it is therefore difficult to have a good overview of all information produced. However, feedback from media and googled websites indicates that a major part of

published information has a positive angle and conveys a more or less correct picture of SGSV and its mission.

Several requests for visits have been rejected in accordance to the visitor policy or because it was not possible to find suitable dates. Other kinds of inquiries are related to offers for voluntary work for SGSV or offers for seeds that companies, NGOs or individuals from all parts of the world would like to donate to the Seed Vault and its mission. Communication related to requests, offers and other kinds of enquiries gives opportunities to convey general information and to clarify misunderstandings about SGSV and its objectives.

In some cases the SGSV can play a part in research projects, e.g. in social sciences, that contribute to these common goals, even if all kind of research and investigation in the seed material is left to the owners of the seeds, i.e. the depositing gene banks. From 2015, NordGen participates as a partner in the project *"From the Vault to the Archive: Architectures, Technologies and Techniques of ex situ Conservation"*, managed by Institute of Archeology, University College London, UK.

4.3. Other information activities on Svalbard

A major part of Longyearbyen population and tourists visiting Svalbard is well aware of the Seed Vault, and would want to visit the facility. It is however, for a number of reasons, not advisable or feasible to open the Vault for locals or tourists. To meet the demand for correct information to people living in or visiting Svalbard, several activities have been carried out.

The most important public awareness initiative in Longyearbyen is the permanent Seed Vault exhibition at Svalbard Museum. The exhibition was opened by Nobel peace prize laureate Wangari Maathai and the Norwegian minister for agriculture Terje Riis Johansen when the Seed Vault was opened in February 2008. The exhibition was produced by NaturExpo in Kristiansand, who in 2015 also made a reconditioning of the exhibition. Rejected requests directed to NordGen for visiting the Seed Vault are advised to visit Svalbard Museum and the entrance portal.

NordGen has cooperated with the University Center in Svalbard (UNIS) about forwarding information about SGSV to visitors to the university. In 2008 NordGen made a standard presentation about the Seed Vault and its mission, which has been used by the UNIS leadership several times. UNIS has also provided lecture rooms at occasions and events conducted by NordGen.

The local population and in particular those working with tourists, are considered to be important ambassadors for conveying information about the Vault. In 2014 NordGen organized a half-day conference in Longyearbyen with presentations about background and activities related to the Seed Vault. As a result of an informal competition in the audience a group of locals were given a guided tour inside the Vault.

In 2016 NordGen, in cooperation with Svalbard Tourist office, invited tourist enterprises and their tourist guides for a half-day conference followed by a guided tour for about 30 tourist guides, divided in groups, in the Vault. Several of the guided tours in Longyearbyen include a visit to the entrance portal of the Seed Vault, and it is advantageous that guides are well informed.

One of the Svalbard based travel companies that in particular wanted to have cooperation with NordGen and SGSV is Svalbard Science Destination, who recently has established the half day event *Svalbard Globale Frøhvelv*, including thorough information, a visit to the SGSV entrance and a specially designed meal. NordGen has contributed to their information material and also provided some relevant material for their tours.

NordGen was the project employer and took part in the production of the exhibition “Verdens viktigste rom” (Earth’s most important room) that was inaugurated at Agder Natural History Museum and Botanical Garden in Kristiansand in September 2015. The movable exhibition is produced in Norwegian, aiming at a Norwegian audience, and it will be displayed at museums and other scenes throughout Norway during the next three to five years. According to plans, the exhibition will end up in Svalbard Museum after the Norwegian mainland tour.

The exhibition is produced by Agder Natural History Museum and Botanical Garden and the company NaturExpo in Kristiansand, which also has produced the current Seed Vault exhibition in Svalbard Museum. The project has been funded from the Norwegian Ministry for Agriculture and Food with Svalbard Museum as the project manager. An English version of the exhibition for an international audience has been discussed.



Figure 11. From inside the exhibition miniature Seed Vault at the opening event on the 13th of September 2015; from the left Jarle Torkildsen, Natureexpo, Roland von Bothmer, Svalbard Global Seed Vault/ NordGen, Ann-Kristin Olsen, County Governor in Vest-Agder and former Governor of Svalbard and Árni Bragason, NordGen.

4.4. Publications and presentations

NordGen staff has published 25 articles and papers related to the Seed Vault. These are listed in Annex 3. In addition, a significant number of lectures and presentations have been given by NordGen employees, at international meetings and conferences and for visiting groups in Longyearbyen. A list of more than 80 presentations and lectures given at different occasions outside Svalbard can be found in Annex 4.

As written above, the number of Seed Vault visits conducted is significant. At some occasions visits have been combined with lectures, held at UNIS or at some of the Svalbard hotels. A list of lectures given in Longyearbyen is presented in Annex 5.

5. Svalbard 100 year study

NordGen (at that time The Nordic Gene Bank) placed the first seeds in Svalbard permafrost in November 1984, as the start of the establishment of a security back up of the NGB gene bank collections. The seeds were placed in Mine 3 through an agreement with the owner The Norwegian Coal Company, Store Norske Spitsbergen Kulkompani.

In addition to the security storage of the base collection, NGB initiated a study of the longevity (germination and seed health) in long term storage (100 years) in permafrost, the so called 100 year study. The NGB / NordGen security collection was moved to the Seed Vault shortly after the inauguration, but seeds belonging to the 100 year study remained in Mine 3. The study has been included in the NordGen project for SGSV operation.

The study comprise a total of 42 seed samples of 16 common agricultural and horticultural Nordic species divided into sub-samples and stored in boxes inside a steel container in the mine. A set of sub-samples were taken out for analyses every two and a half years during the first 20 years, and are taken out every five years during the next 80 years. In principle, this study generates costs for bringing seeds out of the mine and for the seed analysis every fifth year. NordGen is planning to publish preliminary results after withdrawal and analysis of seeds in February 2017, after 30 years of storage.

6. Financial report

Funding of the management and operation of the Svalbard Global Seed Vault conducted by NordGen is, according to the Three Party Agreement Article 2, shared between MAF and Crop Trust. A small share, proportional to Nordic material in the SGSV, is covered by NordGen.

Annual accounts and financial statements have been included in annual reports submitted by NordGen within the 1st of April the following year. At the same date NordGens' budget for the

subsequent year has been presented, prior to the onset of the coming budget period. Annual reports and proposed budgets have been approved by the partners. Total spending over eight years has been SEK 18.305.639,-.

A summary of spending all years is shown in Annex 2. A graph displaying ratio between budgets and spending is shown in Figure 14. A graph showing division between cost categories is displayed in Figure 15.

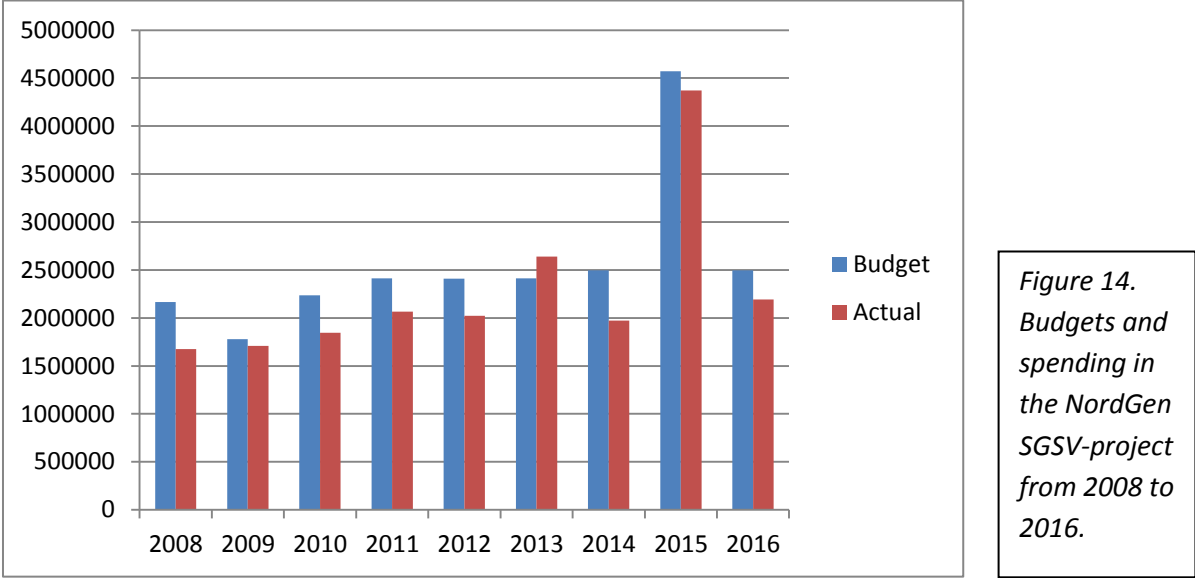


Figure 14. Budgets and spending in the NordGen SGSV-project from 2008 to 2016.

Except for 2013, accounts for all years has shown a surplus, which has regularly been transferred to a working capital fund. As per 31 December 2016 this fund amounts to SEK 2 163 838. The deficit in 2013 is due to costs for the postponed IAC meeting, participation of the coordinator at the ITPGRFA meeting in Oman, work on the Long Term Storage project and increased travel expenses related to reopening of SGSV for visitors in 2013 and lectures given at several international conferences.

Major parts of the NordGen budget and spending relates to staff resources. Several NordGen functions have been involved. Staff directly allocated to SGSV includes the Seed Vault coordinator and a scientific information expert. Up to 2015 this comprised two half time positions. After change in positions and some overlap during 2015-16, these two functions have been consolidated into one full time position.

Further involvement of NordGen staff includes database and information management, seed administration, accountancy services, archive and logistic services and overall administration.

Travel costs represent the second biggest part of normal SGSV management costs, and the majority of these relates to travels to Svalbard for handling of seed deposits and visitors, or tasks and cooperation with partners in Longyearbyen; Statsbygg, Svalbard Museum, The Governor of Svalbard etc. Accommodation in Longyearbyen is normally offered free of charge by Statsbygg, which is a significant contribution to the overall travel budgets.

NordGen SGSV staff is frequently invited to give lectures and presentations at international conferences or other events. In many cases the organizers have covered travels and/or accommodation costs.

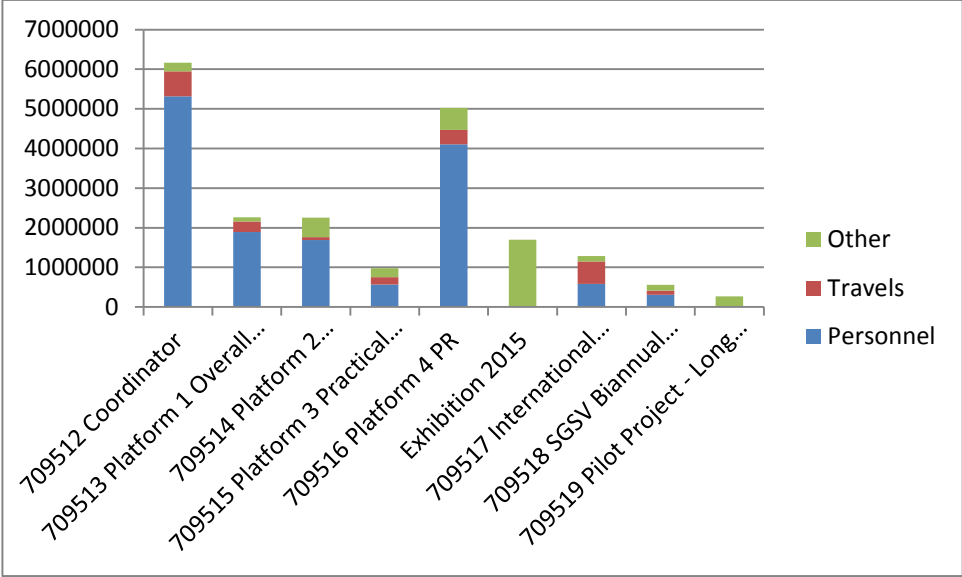


Figure 15. Total SGSV-costs 2008 – 2016 shared on platforms / subprojects and cost categories.

In general, NordGens’ costs for management and operation of SGSV have been quite stable through the years, with a slight increase due to general inflation rates. Spending for 2015 was significantly higher than previous years, mainly due to production of the Norwegian exhibition “Verdens viktigste rom” that was funded by MAF. The production included NordGen staff resources for compiling information, manuscripts etc.

Staff expenditures for 2015 were higher than normal years, which was due to change of staff, overlap and more involvement of supporting staff than during the average years.

Annex 1. List of depositors to the Svalbard Global Seed Vault listed in order of Deposit Agreement signature.

Acronym	Country	Institute name	SDA	Accessions_End2016
WARDA	International, Benin	Africa Rice Center	2007/2008	14839
CIAT	International, Columbia	Centro Internacional de Agricultura Tropical	2007/2008	54664
CATIE	International, Costa Rica	CATIE	2007/2008	723
ILRI	International, Ethiopia	International Livestock Research Institute	2007/2008	5335
ICRISAT	International, India	International Crop Research Institute for the Semi-Arid Tropics	2007/2008	110818
ICRAF	International, Kenya	World Agroforestry Centre	2007/2008	777
CIMMYT	International, Mexico	Centro Internacional de Mejoramiento de Maiz y Trigo	2007/2008	130291
IITA	International, Nigeria	International Institute of Tropical Agriculture	2007/2008	20738
CIP	International, Peru	Centro Internacional de la Papa	2007/2008	8219
IRRI	International, Philippines	International Rice Research Institute	2007/2008	122060
ICARDA	International, Syria	International Centre for Agricultural Research in Dry Areas	2007/2008	78411
AVRDC	International, Taiwan	The World Vegetable Center	2007/2008	15618
NORDGEN	Regional, Sweden	Nordic Genetic Resource Center	30.01.2008	21120
IPK	Germany	Leibniz Institute of Plant Genetics and Crop Plant Research	30.01.2008	48653
CGN	Netherlands	Centre for Genetic Resources	30.01.2008	19713
PGRI-NARC	Pakistan	Plant Genetic Resources Institute, National Agricultural Research Centre	30.01.2008	2874
SSE	USA	Seed Savers Exchange	30.01.2008	3087

NGBK	Kenya	Kenya Agricultural & Livestock Research Organization (KALRO): Genetic Resources Research Centre	26.02.2008	1314
NAC	South Korea	National Agrobiodiversity Center	06.05.2008	13185
IAS	Macedonia	Institute of Agriculture Skopje	11.06.2008	0
NCPGR	India	National Burea of Plant Genetic Resources	04.07.2008	25
VIR	Russia	N.I. Vavilov All-Russian Scientific Research Institute of Plant Industry	04.07.2008	5278
RAC	Switzerland	Station Federale de Recherches en Production Vegetale de Changins	27.10.2008	9665
EMBRAPA	Brazil	EMBRAPA	06.11.2008	1319
AFT	Ireland	Oak Park Research Centre	16.01.2009	577
DAFF	Ireland	Department of Agriculture, Food and Rural Development	22.01.2009	100
TARI	Taiwan	Taiwan Agricultural Research Institute	26.02.2009	10503
UAAS	Ukraine	Institute of Plant Production n.a. V.Y. Yurjev of UAAS	03.03.2009	2782
PGRC	Canada	Plant Gene Resources of Canada, Canadian Genetic Resources Program, Saskatoon Research Centre	05.11.2009	25868
ILRF	Georgia	I. Lomouri Research Institute of Farming.	23.02.2010	305
AAS	North Korea	Pyongyang AAS	18.03.2010	5700
La Molina	Peru	Programma de Mais	25.05.2010	1296
ICCI	Israel	Institute of Cereal Crop Improvement, Tel Aviv University	23.06.2010	900
DELEP	USA	Desert Legume Program. University of Arizona	24.08.2010	134
ARC	Sudan	Agricultural Research Corporation	18.10.2010	1195

SPGRC	Regional, Zambia	SADC Plant Genetic Resources Centre	09.11.2010	1463
NAGREF	Greece	National Agricultural Research Organization	02.02.2011	25
ICABIOGRAD	Indonesia	Indonesian Center for Agricultural Biotechnology and Genetic Resources	02.02.2011	1050
DAR (MOAI)	Myanmar	Department of Agricultural Research	23.02.2011	718
INIAP	Ecuador	Instituto Nacional Autónomo de Investigaciones Agropecuarias	12.04.2011	168
NARO	Uganda	National Agricultural Research Organization	26.05.2011	777
BARI	Bangladesh	Plant Genetic Resource Centre, Bangladesh Agricultural Research Institute	10.06.2011	0
LS	Italy	University of Pavia, Department of Earth and Environmental Sciences, Lombardy seed bank	23.06.2011	2
NACGRAB	Nigeria	National Centre for Genetic Resources and Biotechnology (NACGRAB)	06.09.2011	800
IRAG	Guinea	Institut de Recherche Agronomique de Guinée	07.10.2011	0
RNGRC	Tajikistan	Republican National Genetic Resource Center	14.11.2011	1646
AGRI	Azerbaijan	Genetic Resources Institute (AGRI) of the Azerbaijan National Academy of Sciences	17.02.2012	1522
INRB	Portugal	Instituto Nacional de Recursos Biológicos	05.03.2012	12
ISABU	Burundi	Agricultural Research Institute of Burundi	19.06.2012	439
IER	Mali	Institute of rural economy	19.09.2012	158

PSARTI	Mongolia	Plant Science Agricultural Research Institute	02.10.2012	160
INIA La Platina	Chile	Unidad de Recursos Genéticos -INIA La Platina	03.10.2012	43
AUG	Georgia	Georgia State Agrarian University	15.10.2012	120
NPGRL	Philippines	National Plant Genetic Resources Laboratory	18.10.2012	2254
ASAU	Armenia	Armenian State Agrarian University, Laboratory of Plant Gene Pool and Breeding	16.12.2012	175
CN FCRC	Thailand	Chainat Field Crops Research Center	01.03.2013	150
UzRIPI	Uzbekistan	Uzbek Research Institute of Plant Industry	01.03.2013	2038
SARDI	Australia	South Australian Research and Development Institute	12.06.2013	2926
AGG	Australia	Australian Grains Genebank/Australian Tropical Crops Collection	26.11.2013	7486
BWPRC	Japan	National University Corporation Okayama University	26.11.2013	5268
NRSSL	Thailand	National Rice Seed Storage Laboratory for Genetic Resources, NRSSL, Rice Department	14.08.2013	81
AGES	Austria	Austrian Agency for Health and Food Safety, Dept. for Plant Genetic Resources	17.03.2014	1457
BGRIPGR	Bulgaria	Institute for Plant Genetic Resources "K.Malkov"	17.03.2014	933
NCGRP	USA	National Center for Genetic Resources Preservation, USDA	SIGNED 18.01.2015	108022
NFSC	Norway	The Norwegian Forest Seed Centre	08.01.2015	208

Luke	Finland	Natural Resources Institute Finland	21.01.2015	7
UCR-CIA	Costa Rica	Universidad de Costa Rica	08.09.2015	6
PdeP	Peru	Parque de la Papa	09.09.2015	750
CRI	Czech Republic	Crop Research Institute	28.08.2015	806
AgResearch	New Zealand	Margot Forde Germplasm Centre	11.1.2016	726
CHAIPATT	Thailand	Chaipattana Foundation	11.2.2016	20
AMGRC	Australia	Australian Pastures Gene Bank	11.03.2016	0
GRIBL	Bosnia & Herzegovina	Genetic Resources Institute, University of Banja Luka	16.06.2016	326
INRA	France	National Institute for Agricultural Research	16.06.2016	2
TLL	Singapore	Temasec Life Sciences Laboratories Ltd.	19.08.2016	7
James Hutton	UK	James Hutton Institute	09.11.2016	0
MNREC	Myanmar	Myanmar Ministry of Natural Resources and Environmental Conservation	09.11.2016	0

Svalbard Global Seed Vault - 2008-2016

Currency SEK

Spending

Activity	Cost Category	Items	Budget 2016	Actual 2016	Budget 2015	Actual 2015	Budget 2014	Actual 2014	Budget 2013	Actual 2013	Budget 2012	Actual 2012	Budget 2011	Actual 2011	Budget 2010	Actual 2010	Budget 2009	Actual 2009	Budget 2008	Actual 2008	Budget 2007	Actual 2007	Budget 2006	Actual 2006	Total	
709512	Personnel	Coordinator	770 000	825 962	1 100 000	630 628	588 000	658 238	564 000	642 159	564 000	544 153	587 400	599 885	587 400	458 687	336 000	315 214	752 000	640 742	0	0	0	0	0	
Coordinator	Travel	To Svalbard and other destinations	60 000	57 704	50 000	103 650	90 000	53 752	90 000	67 039	90 000	57 757	120 000	35 239	120 000	52 929	104 000	61 085	130 000	144 300	0	0	0	0	0	
	Communication / supplies	Phone, computer, printer, mailing etc.	25 000	45 977	25 000	34 633	30 000	15 602	30 000	25 956	30 000	23 552	30 000	23 789	30 000	27 118	20 000	11 333	40 000	5 378	0	0	0	0	0	
		Sub-total	855 000	929 643	1 175 000	768 911	708 000	727 592	684 000	735 154	684 000	625 462	737 400	658 913	737 400	538 733	460 000	387 632	922 000	790 420	0	0	0	0	5 232 817	
709513	Personnel	Director and Finance Director	187 000	274 605	187 000	439 258	168 000	255 464	160 000	232 221	160 000	192 630	155 000	160 364	124 000	145 095	144 000	169 067	144 000	19 957	0	0	0	0	0	
Platform 1 Overall Administration	Travel ^(b)	To Svalbard and other destinations	30 000	52 976	15 000	14 722	20 000	13 187	20 000	18 084	10 000	30 143	10 000	16 262	10 000	48 886	10 000	4 633	5 000	70 031	0	0	0	0	0	
	Communication / supplies	Phone, computer, printer, mailing etc.	15 000	26 505	30 000	24 946	30 000	5 379	30 000	9 773	40 000	21 504	40 000	8 755	15 000	1 041	26 000	8 543	26 000	1 879	0	0	0	0	0	
		Sub-total	232 000	354 086	232 000	478 926	218 000	274 030	210 000	260 078	210 000	244 277	205 000	185 381	149 000	195 022	180 000	182 243	175 000	91 867	0	0	0	0	1 911 824	
709514	Personnel	IT-manager	142 500	145 002	127 500	196 783	176 400	206 128	188 000	176 597	169 200	175 668	133 500	217 447	133 500	177 601	80 000	148 498	145 000	246 032	0	0	0	0	0	
Platform 2 Information Management	Travel	Trips to Svalbard	10 000	0	10 000	8 872	10 000	7 624	15 000	0	30 000	7 090	45 000	10 871	45 000	13 157	65 000	14 841	78 000	13 301	0	0	0	0	0	
	IT System	Computer	0	0	0	10 900	0	0	0	8 885	0	0	0	0	0	0	0	0	0	19 114	0	0	0	0	0	
	IT System	Server, web	59 000	54 000	54 000	54 000	54 000	54 000	54 000	54 000	48 000	48 000	36 000	56 965	36 000	58 128	0	0	0	37 244	0	0	0	0	0	
		Sub-total	211 500	199 002	191 500	270 555	240 400	267 752	257 000	239 482	247 200	230 758	214 500	285 283	214 500	248 887	145 000	218 453	223 000	296 577	0	0	0	0	2 057 747	
709515	Personnel	Seed Technician	170 000	101 733	170 000	38 740	98 000	69 359	94 000	109 434	75 200	75 693	44 500	58 235	44 500	42 610	40 000	66 485	58 000	8 468	0	0	0	0	0	
Platform 3 Practical Seed Adm.	Travel	Trips to Svalbard	30 000	11 898	20 000	27 244	30 000	31 544	45 000	35 342	15 000	33 888	15 000	13 979	15 000	380	13 000	23 860	39 000	2 057	0	0	0	0	0	
	Contracted services	Vehicle hire, local supplies	40 000	0	50 000	8 069	30 000	27 169	60 000	34 187	30 000	14 557	60 000	62 600	20 000	20 955	20 000	26 515	90 000	35 092	0	0	0	0	0	
		Sub-total	240 000	113 631	240 000	74 054	158 000	128 072	199 000	178 963	120 200	124 138	119 500	134 814	79 500	63 945	73 000	116 860	187 000	45 617	0	0	0	0	866 463	
709516	Personnel	Scientific information expert, Coordinator	550 000	548 851	550 000	635 693	588 000	475 614	486 000	543 668	486 000	499 883	468 000	474 516	490 250	498 011	340 000	411 162	188 500	16 798	0	0	0	0	0	
Platform 4 PR	Travel	To Svalbard and other destinations	90 000	20 830	60 000	84 858	90 000	92 715	23 500	0	23 500	0	22 250	24 169	120 000	33 493	104 000	103 343	39 000	2 940	0	0	0	0	0	
	Materials for media	External filming, editing and multiplication	30 000	7 095	30 000	0	30 000	0	90 000	119 676	112 500	115 618	120 000	71 212	50 000	55 384	30 000	19 231	15 000	22 474	0	0	0	0	0	
	Exhibition Material	Production of exhibition	0	0	1 744 000	1 696 270	0	0	30 000	24 586	50 000	15 411	50 000	15 411	0	0	30 000	38 379	30 000	0	0	0	0	0		
	Communication / supplies	Phone, printer, mailing etc.	10 000	0	10 000	3 801	25 000	3 383	10 000	17 496	25 000	25 260	20 000	11 972	20 000	6 882	30 000	849	30 000	0	0	0	0	0		
		Sub-total	680 000	576 776	2 394 000	2 420 622	733 000	571 712	639 500	705 426	697 000	640 761	680 250	597 280	680 250	593 771	534 000	572 964	272 500	42 212	0	0	0	0	6 144 748	
709517	Personnel	Director	85 000	20 799	85 000	58 080	84 000	0	80 000	94 429	80 000	22 507	77 500	81 840	77 500	24 803	72 000	76 861	72 000	0	0	0	0	0	0	
International Advisory Council	Personnel	Other staff	0	0	0	130 481	29 400	0	28 200	0	47 000	52 001	53 400	11 035	53 000	7 028	0	0	0	0	0	0	0	0	0	
	Travel	Meeting	144 000	0	180 000	122 113	180 000	2 769	180 000	173 590	180 000	18 441	180 000	96 456	150 000	0	300 000	152 904	300 000	0	0	0	0	0	0	
	Communication/Supplies	Communication (phone, printer, mailing etc.)	0	0	0	0	5 000	0	5 000	0	10 000	5 000	10 000	784	10 000	0	5 000	1 666	5 000	0	0	0	0	0	0	
	Expenditure	Meeting costs	50 000	0	75 000	47 729	40 000	0	30 000	81 692	35 000	0	35 000	4 590	35 000	0	10 000	625	10 000	0	0	0	0	0	0	
		Sub-total	279 000	20 799	340 000	358 403	338 400	2 769	323 200	349 711	352 000	97 949	355 900	194 705	325 500	31 831	387 000	232 056	387 000	0	0	0	0	0	1 267 424	
709518	Personnel	Director/Information, IT, Adm	0	0	0	0	0	0	0	0	0	0	0	0	0	127 350	0	0	179 934	0	0	0	0	0	0	
SGSV Biannual Seminar 2011 - planning	Travel	Meeting	0	0	0	0	0	0	0	0	0	0	0	0	0	20 796	0	0	82 477	0	0	0	0	0	0	
	Materials, Communication	Information material, phone, printer etc.	0	0	0	0	0	0	0	0	0	0	0	0	0	326	0	0	145 158	0	0	0	0	0	0	
		Sub-total	0	0	0	0	0	0	0	0	0	0	0	0	0	148 472	0	0	407 569	0	0	0	0	0	556 041	
709519		Testing, Testing Materials, Procedures	0	0	0	0	100 000	0	100 000	171 520	100 000	59 981	100 000	11 015	50 000	26 061	0	0	0	0	0	0	0	0	0	0
Pilot Project - Long Term Storage project			0	0	0	0	100 000	0	100 000	171 520	100 000	59 981	100 000	11 015	50 000	26 061	0	0	0	0	0	0	0	0	0	
		Sub-total	0	0	0	0	100 000	0	100 000	171 520	100 000	59 981	100 000	11 015	50 000	26 061	0	0	0	0	0	0	0	0	268 577	
		Total costs	2 497 500	2 193 937	4 572 500	4 371 471	2 495 800	1 971 927	2 412 700	2 640 334	2 410 400	2 023 326	2 412 550	2 067 391	2 236 150	1 846 720	1 779 000	1 710 208	2 166 500	1 843 577	496 877	496 877	131 298	131 298	19 157 018	
		Result against budget SEK	303 563	0	201 029	0	523 873	0	-227 634	0	387 074	0	345 159	0	389 430	68 792	0	322 923	0	0	0	0	0	0	2 010 646	

Findings	Budget 2016	Actual 2016	Budget 2015	Actual 2015	Budget 2014	Actual 2014	Budget 2013	Actual 2013	Budget 2012	Actual 2012	Budget 2011	Actual 2011	Budget 2010	Actual 2010	Budget 2009	Actual 2009	Budget 2008	Actual 2008	Budget 2007	Actual 2007	Budget 2006	Actual 2006	Total
LMD	1 225 745	1 225 745	3 590 165	3 396 173	1 513 465	1 513 465	1 403 900	1 403 900	1 519 200	1 519 200	1 422 550	1 033 121	1 282 400	1 442 800	740 000	737 461	1 080 000	693 000					

Annex 3

Publications about the Svalbard Global Seed Vault by NordGen staff

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Annex 4

Lectures and presentations in conferences, workshops and meetings, related to The Svalbard Global Seed Vault, given in by NordGen staff.

(presentations in Svalbard not included, see Annex 5)

2009

Roland von Bothmer:

- 12.1. Osorno, Chile, Lecture at 1st International Workshop on Genetic Resources: The Nordic Model: *Conservation of plant genetic resources in the Nordic countries.*
- 1.6. Opening lecture at 6th International Triticeae Symposium, Kyoto, Japan
- 6.11. Rome, Italy, Lincei Academy, Lecture at International Workshop on Plant Genetic Resources for Food and Agriculture; *Diversity and conservation of cultivated and wild barley*
- 18.11. FAO World Food Summit; Side event: Genetic Diversity and Food Security in a Changing Climate; Rome, Italy; Lecture: " *The Nordic regional cooperation in NordGen and the role of the Svalbard Global Seed Vault*"

2010

Roland von Bothmer:

- 10.1. Lund University, Lund, Sweden
- 23.1. The Botanical Society of Lund, Sweden
- 23.3. Natural History Museum, Stockholm, Sweden
- 31.5. High School Students, Lund, Sweden
- 15.10. Open House, Nordic Council of Ministers, Copenhagen, Denmark

2011

Roland von Bothmer:

- 17.2. Lecture at Workshop on pre-breeding, Espo, Finland: *Why the Global Seed Vault?*
- 12.4. Vavilov Institute, Alnarp, Sweden;
- 28.4. Lecture at Seminar day, Staur Farm Norway: *The importance of Plant Genetic Resources*
- 24.8. Lecture at Plant Physiology Congress, Stavanger, Norway: PGR and The Vault
- 27.9. Lecture at seminar day in Oslo, Norway arranged by Bioteknologinemda; *Fremtidsrettet forvaltning og bruk av norske genressurser for planter, sett i lys av klimautfordringene og matmangel*

12.12. Lecture on PGR and The Vault in connection with presentation of the barley variety 'Botnia' by MTK, Helsinki, Finland

2012

Roland von Bothmer:

9.1. Lecture for SPF political party, Lund, Sweden; *Från den fertila halvmånen till Svalbard – en resa på 10 000 år*

27.1. Lecture at Copenhagen University, Denmark; *The Svalbard Global Seed Vault – is it important for plant genetic resources?*

12.3. Lecture Rotary, Mariestad, Sweden; *Global matsäkerhet – vad kan vi göra?*

12.3. Lecture at College Da Capo, Mariestad, Sweden; *Från den fertila halvmånen till Svalbard – kulturväxternas ursprung och framtid*

27.6. Lecture at Conference: Green Growth Nordic, Trondheim, Norway; *New plants: Green growth in a changing climate*

30.8. Lecture at symposium on plant breeding at The Royal Swedish Academy of Science, Stockholm, Sweden; *Sustainable agriculture – does it need modern biotechnology?*

13.11. Lecture at 6th International Symposium Society for Horticultural Sciences, Catania, Italy; *Is there a need for the Svalbard Global Seed Vault and are our genetic resources safe for the future? Examples in Brassica*

26.11. Lecture at Swedish University of Agricultural Sciences, Ultuna, Sweden; *Is the Svalbard Global Seed Vault important for the future of man?*

11.12. Lecture at seminar day for teachers, College of Skövde, Sweden; *Jordens livsmedelssäkerhet – hur klarar vi framtiden?*

Ola Westengen:

18.4. Presentation at Global Crop Diversity Trust Symposium Rome 17-19 April 2012. *Svalbard Global Seed Vault -Your back-up in the Arctic*

20.6. Presentation at Universidad Nacional Agraria, Managua, Nicaragua. *Recursos genéticos, su conservación y acceso en la Bóveda Global de Semillas, Svalbard, Noruega*

2013

Roland von Bothmer:

13.2. Lecture at seminar day at The Swedish Parliament, Stockholm; *Genbanker och pre-breeding för det längre perspektivet*

18.3. Lecture at The Alnarp Park Society, Alnarp, Sweden; *The Svalbard Global Seed Vault – viktig för människans framtid*

- 25.4. Lecture at symposium Växtförädling 3.0 – ny teknik och gamla lagar, Royal Swedish Academy of Forestry and Agriculture, Stockholm, Sweden; *Från munken Mendel till medveten modifiering*
- 3.6. Lecture at Morioka Breeding Station, Japan; *Is there a need for The Svalbard Global Seed Vault and are our genetic resources safe for the future?*
- 5.6. Lecture at Reserach Institute for Bioresources, Kurashiki, Japan; *Is there a need for The Svalbard Global Seed Vault and are our genetic resources safe for the future?*
- 7.6. Lecture at National Agricultural Institute, Tsukuba, Japan; *Is there a need for The Svalbard Global Seed Vault and are our genetic resources safe for the future?*
- 10.6. Lecture at 7th International Triticeae Symposium, Chengdu, China; *Is there a need for The Svalbard Global Seed Vault and are our genetic resources safe for the future?*
- 28.6. Lecture at Nordic Council of Ministers summermeeting, Åre, Sverige; *Pre-breeding – en förutsättning för framtida utveckling*
- 10.8 Lecture at symposium on Genetic Resources, Bangkok, Thailand; *The Svalbard Global Seed Vault: Its role and importance to Plant Genetic Resources conservation*
- 22.8. Lecture at meeting with Swedish politicians Jordberga, Sweden; *Varför växtförädling?*
- 17.10. Invited lecture at IPK Gatersleben, Germany; *The Svalbard Global Seed Vault: Its role to Plant Genetic Resources conservation*
- 12.11. Lecture at Skånska Akademien, Lund, Sweden; *Genbanken och frövalvet*
- 22.11. Lecture at Carlsberg Laboratory, Copenhagen, Denmark; *The barley genus Hordeum – an unusal plant group*
- 2.12. Honorary lecture at The Royal Swedish Physiographic Society, Lund, Sweden; *Sinar genkällorna – eller drunknar vi i genpoolen?*

Ola T. Westengen, Simon Jeppson & Roland von Bothmer:

- 13.6. EUCARPIA, Alnarp, Sweden. European Plant Genetic Resources Conference *Safety duplicating global ex-situ collections: Taxonomic and institutional representation in the Svalbard Global Seed Vault collection.*

2014

Roland von Bothmer:

- 27.1. Lecture at symposium Lillehammer, Norway; *Need for gene banks in a changing climate*
- 8.2. Lecture at Swedish Honeybee Association, Stenungsund, Sweden; *Växtförädling, GMO och bevarande av växtgenetiska resurser*
- 23.2. Lecture about SGSV Norsk Landbrukssamvirke, Oslo, Norway;
- 6.3. Lecture at Rotary, Staffanstorps, Sweden; *Sinar genkällorna eller drunknar vi i genpoolen?*

- 26.3. Lecture at seminar day for teachers theme Jordens resurser; *Jordens livsmedelssäkerhet – hur klarar vi framtiden?*
- 20.9. Lecture at Open House, Lund University; *Det globala frövalvet på Svalbard*
- 23.9. Lecture at symposium Food, Population and Health – Global Patterns and Challenges; *The evolution of Northern European Crops*
- 2.10. Invited lecture at 100 year celebration at Reserach Institute for Bioresources, Kurashiki, Japan; *World plant genetic resoures and the State of Japan – with emphasis on barley*

Ola Westengen:

- 24.6. The Global Crop Diversity Trust 10 year anniversary, Bonn, Germany. *The Svalbard Global Seed Vault: a frozen ark for food security*
- 31.10. Villa Masia Notari, Barcelona, Spain. *Safety duplicating global ex-situ collections of PGRFA*

2015

Roland von Bothmer:

- 19.1. Symposium at DOA Gene Bank, Bangkok, Thailand; Lecture: The role of NordGen in plant genetic resources conservation and utilization – with an international outlook
- 8.6. Workshop at Vreta Cluster (organization for Agricultural Research), Sweden; Lecture: *Bortom GMO – vetenskap och växtförädling för ett hållbart jordbruk*
- 25.6. Symposium: Genetic Resources Conservation – Scientific and Social Challenge; Karpacz, Poland; Lecture: *The role of Svalbard Global Seed Vault for secure and effective long tern conservation of plant genetic resources*
- 18.8. ELLS international summer course, Alnarp, Sweden; Lecture: *Genebanking and major international collections*
- 3.9. Symposium, Agricultural University of Sweden; Lecture: *Genebanking and major international collections*
- 12.10. Seminarium arrangerat av Musik i Syd; Lecture: *Matsäkerheten – ligger den på Svalbard?*
- 8.12. Seminar day for teachers, Varberg, Sweden; Lecture: *Genetiska resurser – bevarande och utnyttjande.*
- 24.10. Skånska Akademien Lund, Sweden: Lecture: *Växtförädling i framtidens jordbruk*

Ola Westengen:

- 10.2. Lecture for different media, Oslo. *The Svalbard Global Seed Vault*
- 6.7. International Society for Seed Science (ISSS) Conference 2015. Keynote: The Global Back-up

Åsmund Asdal:

- 29.10. 10^o SIRGEALC, Genetic Resources Symposium for Latin America and Caribe, Bento Gonçalves, Brazil. *Svalbard Global Seed Vault – and its role in global food security*
24.11. Norwegian Embassy, Palace Green, London, UK. Film launch; *Prosperous Mountain*, by Heidi Morstang. Lecture and panel discussion

2016

Roland von Bothmer:

- 15.3. University of Banja Luka, Bosnia & Herzegovina. *Food security in the world – how to manage in the future?*
and
The evolution of Northern European crops
16.3. University of Banja Luka, Bosnia & Herzegovina: *Gene banking and major international collections.*
and
The Svalbard Global Seed Vault: Its role for Plant Genetic Resources Conservation.
5.4. Medical Society of Lund. Lecture about the Seed Vault.
17.5. Jordberga, Sweden, National Symposium: *Jordens betydelse – reellt och symboliskt.*
16.8. Alnarp, Sweden, visit from the Iranian Gene Bank: *Svalbard Global Seed Vault*
17.9. Växjö, Sweden, lectures at an international food exhibition: *Biodiversitet och växtförädling i framtidens jordbruk; and Genetisk diversitet, genbanker och det globala frövalvet på Svalbard*
11.10. Alnarp, Sweden, for staff at The Swedish University of Agricultural Sciences: *Det globala frövalvet på Svalbard*
15.11. Santiago, Chile, International Symposium. *Plant genetic resources to face climatic changes.*
17.11. La Serena, Chile, Symposium on genetic resources: *Genetic resources, gene banks and the Svalbard Global Seed Vault*
21.11. Osorno, Chile, International Symposium. *Plant genetic resources, genebanks and the Svalbard Global Seed Vault*
14.12. Örebro University, Sweden. Lecture for highschool teachers: *Jordens livsmedelssäkerhet – Hur klarar vi framtiden?*

Åsmund Asdal:

- 21.1. Telemark Hageselskap, Skien, Norway. *Svalbard globale frøhvelv – verdens største samling av plantesorter og sikkerhet for framtidens matproduksjon*

- 1.6. ECPGR Steering Committee Meeting, Visegrad, Bosnia & Herzegovina. *The Svalbard Seed Vault and collaboration with ECPGR*
- 2.6. University of Birmingham, UK. *Svalbard Global Seed Vault – conserving plant genetic resources for global food security*
- 11.8. Grimstad Rotary, Grimstad, Norway. *Svalbard globale frøhvelv – verdens største samling av plantesorter og sikkerhet for framtidens matproduksjon*
- 4.9. Natural History Museum, University of Oslo, Norway. Den store frødagen på Tøyen hovedgård *Verdens største skattekasse - Frøhvelvet på Svalbard.*
- 12.9. VII International Symposium on Seed, Transplant and Stand Establishment of Horticultural Crops - SEST2016, University of Pretoria, South-Africa. Åsmund Asdal & Guro Brodal: *Svalbard Global Seed Vault and a 100 years seed storage experiment.* Presented by Guro Brodal.
- 8.11. Manglerud eldrecenter – Foredrag & kulturaktiviteter, Oslo. *Noahs ark på Svalbard*

Annex 5.

Lectures about The Svalbard Global Seed Vault given in Svalbard

2010

Roland von Bothmer:

26.5. The UNIK board, Norway, (lecture and visit)

27.5. Board of Swedish Research Council, Sweden, (lecture and visit)

8.6. Lecture and visit by a group of European media: La Vanguardia, newspaper, Spain; Ronda Iberia, magazine, Spain; Die Welt, newspaper, Germany; TV NDR, Germany; Süddeutsche Zeitung, newspaper, Germany; Hurtigrutten GMBH, magazine, Germany

24.8. Royal Swedish Academy of Forestry and Agriculture (lecture and visit)

Jessica Kathle:

10.6. Nordic Council of Ministers (lecture and visit)

2011

Roland von Bothmer:

28.2. Mattillsynet, Norway (lecture and visit)

7.4. Lecture and visit by a group of Nordic media: freelance journalist, Denmark; Norwegian Television NRK; Danish TV, DR news; Icelandic TV2; Greenland newspaper Sermitsiaq; Finnish newspaper Helsingin Sanomat; Swedish Television, SVT; Swedish newspaper, Svenska Dagbladet; Icelandic newspaper Moganbladi

7.4. Norwegian Ministry of Foreign Affairs (lecture and visit)

2012

Roland von Bothmer:

7.3. Nordic Council of Ministers (lecture and visit)

27.3. Norwegian Genetic Resources Center (lecture)

2013

Roland von Bothmer:

3.7. Mattillsynet Ås, Norway (lecture and visit)

9.10. Norwegian Genetic Resources Center (lecture and visit)

2.5. Swedish Ministry of Rural Affairs (lecture and visit)

9.10. National French TV (lecture and visit)

9.10. Magazine Ny Teknik, Sweden (lecture and visit)

2014

Ola Westengen:

13.10. A presentation to the GenØk board. The Svalbard Global Seed Vault.

14.10. Longyearbyen Science and Education Forum. Fakta og fiksjon om Svalbard Globale Frøhvelv.

Public event about SGSV at the University Center.

2015

Arni Bragason:

22.9. Lecture and visit for Chinese Press. Organized by Royal Norwegian Consulate General, Shanghai

2016

Roland von Bothmer:

21.5. Svalbard Museum. Seminar for tourist guides. Biodiversity, Plant Breeding and Gene Banking.

Åsmund Asdal:

21.5. Svalbard Museum. Seminar for tourist guides. Svalbard Global Seed Vault - information for tourists visiting Svalbard.

21.6. Agro Paris Bourse. Lecture at UNIS. Svalbard Global Seed Vault – Background, history and operations

18.9. UNIS. The Svalbard Global Seed Vault, Side event to The Ny-Ålesund symposium

20.9. Sysselmannen, Longyearbyen. Svalbard globale frøhvelv – informasjon til Sysselmannens stab.

17.10. Spitsbergen hotell. Lecture for Arctic Theatre and Nord-norsk Opera staff

Jan Svensson:

20.9. Sysselmannen, Longyearbyen. Biodiversity, plant breeding and gene banks

Annex 6. Conducted Seed Vault visits 2009-2016

Date	Affiliation	Category	Country	Guide
25.02.2009	Freelance journalist Johan Joelsson	Media-magazine	Sweden	NordGen
17.04.2009	Sipa Press	Media-magazine	France	NordGen
05.05.2009	Norwegian Ministry for Food and Agriculture	Politics	Norway	Statsbygg
19.06.2009	Innovation Norway /BeNeLux journalists	Media-magazine	Netherlands	NordGen
	Norw. Ministry of Environment	Politics	Norway	NordGen
	Die Zeit journal	Media-magazine	Germany	NordGen
27.-28.07.2009	Freelance journalist Elisabetta Canarro	Media-magazine	Italy	NordGen
	University of California	Media-magazine	United States	NordGen
	Freelance journalist Steven Ekholm	Media-newspaper	Sweden	NordGen
	PlymSerafin	Art	Norway	NordGen
	Daily Newspaper Sydsvenskan	Media-newspaper	Sweden	NordGen
Summer 2009	National Geographic	Media-magazine	United States	Crop Trust
14.08.2009	US Ministry of Foreign Affairs	Politics	Norway	NordGen
01.-02.09.2009	Frelance journalist Anton Gustavsson	Media-magazine	Sweden	NordGen
	Swedish Radio P1	Media-radio	Sweden	NordGen
	Norw. Minsitry of FA /Ban Ki-Moon and UN delegation	Policy	International	NordGen
	Haaretz Daily Newspaper	Media-newspaper	Israel	NordGen
	Korea Broadcasting Station	Media-TV	South-Korea	NordGen
	Freelance journalist Mark Sabbatini	Media-magazine	United states	NordGen
25.09.2009	BBC	Media-TV	UK	NordGen
14.-17.12.2009	Swedish Radio	Media-radio	Sweden	NordGen
	Daily Newspaper, Sofia	Media-newspaper	Bulgaria	NordGen

	DU Magazine	Media-magazine	Switzerland	NordGen
05.03.2010	Norwegian Ministry for Food and Agriculture	Politics	Norway	Statsbygg
11.-14.03.2010	University of North Texas	Art	United States	NordGen
	Kew Gardens	Policy	UK	Crop Trust
	Millenium Seed Bank	Policy	UK	Crop Trust
	Norwegian associations within agriculture, 20p	Policy	Norway	Crop Trust
apr.10	Vårt Land	Media-newspaper	Norway	Statsbygg
07.05.2010	Statsbygg	Policy	Norway	Statsbygg
26.-27.05.2010	UNIK University Center	Policy	Norway	NordGen
	Freelance photographer Niels Stomps	Art -Photo	Netherlands	NordGen
	Deutsche Welle	Media-radio	Germany	NordGen
	The Swedish Reserach Council	Policy	Sweden	NordGen
	Net magazine Nowness	Media-magazine	UK	NordGen
	Magazine Amica	Media-magazine	Italy	NordGen
07.-08.06.2010	Geyrhalter Filmproduktion	Media-film	Austria	NordGen
	Norw. Ministry of Research/Indian delegation	Politics	India	NordGen
	Le Temps newspaper	Media-newspaper	Switzerland	NordGen
	Hurtigrutten GmbH	Media-TV	Germany	NordGen
	Hurtigrutten GmbH	Media-magazine	Germany	NordGen
	La Vanguardia	Media-newspaper	Spain	NordGen
	Ronda Iberia	Media-magazine	Spain	NordGen
	Newspaper Die Welt	Media-newspaper	Germany	NordGen
	TV NDR	Media-TV	Germany	NordGen
	Süddeutsche Zeitung	Media-newspaper	Germany	NordGen
11.07.2010	US Embassy, Oslo/US congress members, 25p	Politics	United States	Crop Trust

27.04.2011	Norwegian Parliament, Kommunalkomiteen	Politics	Norway	NordGen
08.06.2011	Radio France	Media-radio	France	NordGen
	TV ProsiebenSat	Media-TV	Germany	NordGen
22.-23.06.2011	Freelance journalist Frederike Buhse	Media-magazine	Germany	NordGen
	UN Foundation group	Donor	Italy	Crop Trust
	TV Canal Plus France	Media-TV	France	NordGen
29.06.2011	Russian embassy, Oslo	Politics	Russia	NordGen
12.08.2011	Norw. Embassy in Washington, US senators	Politics	United States	Statsbygg
24.08.2011	Norwegian Research Academy board	Policy	Norway	NordGen
	Russia Today TV	Media-TV	Russia	NordGen
15.09.2011	UTT - Underground Technology Team, 15p	Policy	Norway	Statsbygg
20.-21.09.2011	Freelance artist Signe Lidén	Art	Norway	NordGen
	ARD/Saarländischer Rundfunk	Media-TV	Germany	NordGen
	Ethical Committee for Science	Policy	Norway	NordGen
	Tencent, Internet Portal Dept	Media-newspaper	China	NordGen
	The Sun	Media-newspaper	UK	NordGen
	Chinese TV	Media-TV	China	NordGen
	Norwegian Parliament, Energy & Environment Committee	Politics	Norway	NordGen
	Freelance artist Mikael Olsson	Art	Sweden	NordGen
06.10.2011	Utviklingsfondet/repr. of LI-BIRD	Policy	India	NordGen
15.10.2011	Freelance artist Mikkel McAlinden	Art	Norway	Statsbygg
26.02.-1.3.2012	Snöball Film	Media-film	Norway	NordGen
	Gyro Film Company, for Expo 2012 in Korea	Media-film	Norway	NordGen

	Prisma TV Studio, YLE	Media-TV	Finland	NordGen
	School of Art, Parsons School of Design	Art	United States	NordGen
	The Economist Magazine	Media-magazine	UK	Crop Trust
	Globo-TV	Media-TV	Brazil	Crop Trust
	NBC Today	Media-TV	UK	NordGen
	Rhodes College, Memphis, Tennessee	Policy	United States	Crop Trust
	LeMoyone Univ, Syracuse New York	Policy	United States	Crop Trust
06.-08.03.2012	UNIS students	Education	United States	NordGen
	Nordic Council of Ministers, EK-FJLS	Policy	Denmark	NordGen
	De Standard	Media-newspaper	Belgium	NordGen
	EU, Catherine Ashton & Norw. Minister of Foreign Affairs	Politics	UK	NordGen
	TV Channel and magazine Deep	Media-TV	China	NordGen
22.03.2012	Freelance film maker	Media-film	France	Crop Trust
	Freelance film maker	Media-film	Canada	Crop Trust
29.03.2012	Freelance artist Franck Dubois	Art	France	NordGen
29.03.2012	Icepeople	Media-magazine	United States	NordGen
nov.12	Freelance photographer Pål Hermansen	Media-book	Norway	NordGen
13.03.2013	Polityka	Media-magazine	Poland	NordGen
02.05.2013	Swedish minister for Rural Affairs	Politics	Sweden	NordGen
30.05.2013	Swedish Radio, Science radio	Media-radio	Sweden	NordGen
	Helsingborgs Dagblad	Media-newspaper	Sweden	NordGen
	Sändaren	Media-magazine	Sweden	NordGen
	Freelance journalist Malin Avenius	Media-radio	Sweden	NordGen
	Freelance journalist Pia Sjögren	Media-magazine	Sweden	NordGen
	Freelance journalist Marit Bendz	Media-newspaper	Norway	NordGen
	Sunmørsposten	Media-newspaper	Norway	NordGen

	Dagbladet	Media-newspaper	Norway	NordGen
	University of Nuuk	Media-magazine	Greenland	NordGen
	Freelance journalist Mari Manninen	Media-magazine	Finland	NordGen
	TV YLE	Media-TV	Finland	NordGen
	Hufvudstadsbladet	Media-newspaper	Finland	NordGen
	Finnish Institute for International Affairs	Media-magazine	Finland	NordGen
	Nordjyske Medier	Media-newspaper	Denmark	NordGen
	Jyllands-Posten	Media-newspaper	Denmark	NordGen
	Ritzaus Bureau	Media-newspaper	Denmark	NordGen
	Danish Radio DR 1 News	Media-radio	Denmark	NordGen
	Adressavisen	Media-newspaper	Norway	NordGen
	Nordic Journalist Center, course for journalists	Media-Magazine	Norway	NordGen
04.07.2013	L'Express	Media-newspaper	France	NordGen
	Bureau of Rice Research and Development	Depositor	Thailand	NordGen
	Swedish TV	Media-TV	Sweden	NordGen
07.-08.08.2013	Yangtse Evening Newspaper	Media-newspaper	China	Crop Trust
	Governor of Svalbard/US senators	Politics	United States	Crop Trust
09.-10.10.2013	Norw. Genetic Resource Centre, advisory committees	Policy	Norway	NordGen
	National French TV	Media-TV	France	NordGen
	Ny Teknik	Media-magazine	Sweden	NordGen
	University Western Ontario	Research	Canada	NordGen
	Telemarksavisa	Media-newspaper	Norway	NordGen
	PlymSerafin	Art	Norway	NordGen
	Inter-TV, Ukraine National TV	Media-TV	Ukraine	NordGen
24.-26.02.2014	Rhodes College	Donor	United States	Crop Trust
	University of Life Sciences	Research	Norway	NordGen
	Freelance journalist Christian Clauwers	Media-magazine	Belgium	NordGen
	Freelance art photographer Christian Houge	Art	Norway	NordGen
	Okayama University	Depositor	Japan	NordGen

	University of Minnesota	Research	United States	NordGen
	Nordic School of Photography, student Hege Susann Hansen	Education	Norway	NordGen
	University of California, Riverside	Policy	United States	NordGen
	Feasibility Study Committee	Policy	UK	Crop Trust
	The Australian Grain Gene Bank	Depositor	Australia	Crop Trust
08.04.2014	CCTV2	Media-film	China	NordGen
12.05.2014	La Stampa, Torino	Media-newspaper	Italy	Statsbygg
11.-12.06.2014	Denmark Radio	Media - Radio	Denmark	NordGen
	Skovdyrkerne	Media-magazine	Denmark	NordGen
	Deutschradio Kultur	Media-radio	Germany	NordGen
	Graminor AS, board	Commercial	Norway	NordGen
	Kimen S�varelaboratorium	Policy	Norway	NordGen
	Aberystwyth University	Reserach	UK	NordGen
	Norwegian government	Politics	Norway	NordGen
08.07.2014	US Congress members	Policy	United States	Crop Trust
13.-15.10.2014	School of International Service	Research	United States	NordGen
	Illustrert vitenskap	Media-magazine	Denmark	NordGen
	Freelance Journalist Tetsuji Ida	Media-magazine	Japan	NordGen
	TV RUSSIA	Media-TV	Russia	NordGen
	Gen�k	Policy	Norway	NordGen
	Fuji TV	Media-TV	Japan	NordGen
	Modernist Cousine	Art	United States	NordGen
25.-27.10.2014	IPCC/Ny �lesund symposium	Policy	International	NordGen
	NRK	Media-TV	Norway	NordGen
	Norad/MFA	Policy	Norway	NordGen
	EU Commission, Anne Glover	Politics	EU	NordGen

26.2.-1.3.2015	Norw. Ministry of FA, Sylvi Listhaug and Nordic colleagues, 20p BBC Newsnight Vice Media Inc. / HBO Photographer Mario Del Curto Dagens næringsliv Kungliga Fysiologiska Sällskapet i Lund CNN The Guardian Press Association BBC Le Figaro DuPont Pioneer Syngenta Parliamentary State Secretary Peter Bleser, BMEL Vice Minister BMEL, Dr. Thomas Meier IPK RAI TV / Fish-Eye Digital Video Creation	Politics Media-TV Media-TV Art Media-newspaper Research Media-TV Media-newspaper Media-newspaper Media-TV Media-magazine Donor Donor Politics Politics Depositor Media-TV	Norway UK United States France Norway Sweden United States UK United States UK France United States Switzerland Germany Germany Germany Italy	NordGen NordGen NordGen NordGen NordGen Crop Trust Crop Trust Crop Trust Crop Trust Crop Trust Crop Trust Crop Trust Crop Trust Crop Trust Crop Trust Crop Trust Crop Trust Crop Trust
18.04.2015	BBC News	Media-TV	UK	NordGen
21.-24.04.2015	Photographer Ali Kazma Photographer Ulrike Ludwig Chamber of Commerce, Eero Hokkanen	Art Art Policy	Turkey Germany Finland	NordGen NordGen NordGen
17.-19.7.2015	SAB Miller Group and billionaire heir Board Chair of Bioversity International and CEO of the Wildlife Conservation Society Centro Internacional de Agricultura Tropical, CIAT	Donor Depositor Depositor	UK Belgium Colombia	Crop Trust Crop Trust Crop Trust
5.-7.08.2015	U.S Congressional Staff	Politics	United States	Crop Trust
24.08.2015	Norw. Ministry of FA, / foreign service candidates	Education	Norway	Statsbygg

27.-28.08.2015	Norw. Ministry of AF / FAO delegation, DG G. da Silva	Policy	Italy	Crop Trust
	Norw. Ministry of AF, / Minister Arauz Cavallini	Politics	Costa Rica	Crop Trust
	CATIE, Mr. Jose Joaquin Campos Arce	Depositor	Costa Rica	Crop Trust
	Secretary ITPGRFA, FAO, Mr. Shakeel Bhatti	Policy	Italy	Crop Trust
	Deutsche Bank	Policy	Germany	Crop Trust
	Parque de la Papa	Depositor	Peru	NordGen
	Universidad de Costa Rica	Depositor	Costa Rica	NordGen
	NRK P2 Ekko	Media-radio	Norway	NordGen
20.-22.09.2015	Bondebladet	Media-newspaper	Norway	NordGen
	VG	Media-newspaper	Norway	NordGen
	Avisenes nyhetsbyrå	Media-newspaper	Norway	NordGen
	TV2	Media-TV	Norway	NordGen
	Norw. Ministry of Agriculture and Food, Media department	Policy	Norway	NordGen
	Aftenposten, A-magasinet	Media-magazine	Norway	NordGen
	Svalbardposten	Media-newspaper	Norway	NordGen
	Norwegian consulate, Shanghai/Chinese journalist group	Media-newspaper	China	NordGen
18.-22.10.2015	Radio France	Media-radio	France	Crop Trust
	Associated press	Media-TV	United States	Crop Trust
	CNN	Media-TV	United States	Crop Trust
	RAI TV / Fish-Eye Digital Video Creation	Media-TV	Italy	Crop Trust
	Blue Planet Productions	Media-TV	Australia	Crop Trust
	Asahi Shimbun	Media-newspaper	Japan	NordGen
	Royal College of Art, London, student Anna Filipova	Art	UK	NordGen
	La Repubblica	Media-newspaper	Italy	NordGen
	Norsk inst. for nature research, NINA	Media-radio	Norway	NordGen
	Parat Trade Union	Media-magazine	Norway	NordGen
	Blick newspaper	Media-newspaper	Switzerland	NordGen
	Institute of Archaeology, London	Research	UK	NordGen
	TF1	Media-TV	France	NordGen
	Zero Visibility Corp.	Art	Norway	NordGen
Michael John Whelan Video art	Art	Germany	NordGen	

11.01.2016	NRK Norge Rundt	Media-TV	Norway	NordGen
28.01.2016	Minister of State Sam Tan, Singapore	Politics	Singapore	Statsbygg
21.02.2016	Member of Norwegian Parliament Jonas Gahr Støre	Politics	Norway	Statsbygg
29.2.-4.3.2016	British Forces Broadcasting Service	Media-TV	UK	NordGen
	Janus TV	Media-TV	Germany	NordGen
	Deutschlandradio/ARD	Media-radio	Germany	NordGen
	El Pais	Media-newspaper	Spain	NordGen
	Vanity Fair	Media-magazine	Italy	NordGen
	Atresmedia	Media-TV	Spain	NordGen
	Bell'Europa	Media-magazine	Italy	NordGen
	Le Monde	Media-newspaper	France	NordGen
	NTB	Media-newspaper	Norway	NordGen
	Harvard University, Sophia Roosth	Research	United States	NordGen
	Natassia Eugenie Symeon	Art	Belgium	NordGen
	ARD TV	Media-TV	Germany	Crop Trust
	Mercury Films inc.	Media-film	Canada	Crop Trust
	Australia 60 Minutes	Media-TV	Australia	Crop Trust
	Channel 9, Australia	Media-TV	Australia	Crop Trust
	Australian Broadcasting Corporation	Media-TV	Australia	Crop Trust
	Go Pro	Media-TV	United States	Crop Trust
	BGI & Chinese media groups	Media-TV	China	Crop Trust
	METal	Donor	United States	Crop Trust
	German government	Donor	Germany	Crop Trust
	Swiss Development Corporation	Donor	Switzerland	Crop Trust
	Crop Life International	Donor	Belgium	Crop Trust
	Syngenta	Donor	Switzerland	Crop Trust
	German Plant Breeder's Association	Donor	Germany	Crop Trust
31.03.2016	Genepool Productions/ Veritasium	Media-TV	Australia	Statsbygg

21.-22.04.2016	Norwegian Parliament, Foreign Affairs and Defence Committee Al Jazeera	Politics Media-TV	Norway UK	NordGen NordGen
21.-23.05.2016	NRK	Media-TV	Norway	NordGen
	Radio Canada, CBC	Media-TV	Canada	NordGen
	Margot Forde Institute	Depositor	New Zealand	NordGen
	Biotechnology Research and Development Office	Depositor	Thailand	NordGen
	Spitsbergen Travel, Tourist guides, 30p	Commercial	Norway	NordGen
	Governor of Svalbard, Police department	Policy	Norway	NordGen
	Discovery Digital Networks	Media-TV	United States	Crop Trust
	Trigger	Media-TV	United States	Crop Trust
	France 2	Media-TV	France	Crop Trust
	Die Welt	Media-TV	Germany	Crop Trust
	Politiken	Media-TV	Denmark	Crop Trust
	Magnum Photos	Media-TV	United States	Crop Trust
	Hello Halo Productions	Media-TV	UK	Crop Trust
	Capa TV France	Media-TV	France	Crop Trust
	Science in Action (BBC World Radio)	Media-TV	UK	Crop Trust
10.06.2016	Senators French Parliament	Politics	France	Statsbygg
21.06.2016	Agro Paris Bourse / INRA	Depositor	France	NordGen
03.08.2016	Crop Research Institute	Depositor	Czech Republic	Statsbygg
09.09.2016	Ambassador of China	Policy	China	Statsbygg
16.-21.09.2016	Kyunghyang Shinmun	Media-newspaper	South-Korea	NordGen
	Grottan, Svenska Spelologföreningen	Media-magazine	Sweden	NordGen
	Vice Media	Media-TV	United States	NordGen
	Norwegian Minister, P.Sandberg/Ny-Ålesund Symposium	Research	Norway	NordGen
	White Paper	Media-magazine	Sweden	NordGen

	Governor of Svalbard, 25p	Policy	Norway	NordGen
	Memory of Mankind	Research	Austria	NordGen
	Norwegian Parliament, Committee for Family and Cultural Affairs	Politics	Norway	NordGen
	Svalbard Science Destination	Commercial	Norway	NordGen
17.-19.10.2016	Arctic Theatre and Nordnorsk Opera, 12p	Art	Norway	NordGen
	Gustavo Heiden, Embrapa	Research	Brazil	NordGen
	Nicola Twilley, Colombia University	Media-book	United States	NordGen
	Fuji TV, Japan	Media-TV	Japan	NordGen
	Freelance photographer Lucas Vasilko	Art	United States	NordGen
	Freelance journalist Anna Liljemalm	Media-magazine	Sweden	NordGen
	Freelance filmmaker Fabian Svensson	Art	Sweden	NordGen
	Freelance journalist Ivar Andersen	Media-magazine	Sweden	NordGen
	Freelance photographer Denes Farkas	Art	Denes Farkas	NordGen