

SVALBARD GLOBAL SEED VAULT

Annual Progress Report 2009

Submitted by NordGen April 2010



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Cover photo by Mari Tefre

2009 at a glance

170 973 new seed samples were stored in the Seed Vault in 2009. This increased holdings by 35% and the total holding by the end of the year was 491 058 samples.

NordGen organized six deposit openings in 2009. 18 institutes deposited in 2009.

Five new institutes from Ireland, Switzerland, Taiwan and Ukraine joined the project, signed deposit agreements and shipped seeds in 2009.

The one year Anniversary Conference “*Frozen Seeds in a frozen mountain. Feeding a warming world.*” organized in Longyearbyen by the three partners behind SGSV on February 25th-27th, 2009.

The International Advisory Council met in February 2009.

The UN Secretary General visited the Seed Vault in September 2009.

The Standard Deposit Agreement was translated into Spanish and French and these versions were made publicly available at the public Seed Portal: www.nordgen.org/sgsv

A new media resource server was set up to serve media outlets and others requesting photo and film from the project: <http://media.nordgen.org>

20 visits arranged for different media, altogether more than 100 requests for visits and questions regarding plant genetic resources.

Foreword

Thanks to much publicity and good cooperation between all key partners, the Svalbard Global Seed Vault (SGSV) is a success. An increasing number of genbanks from all over the world are sending their seeds for security storage at Svalbard. In 2009 there have been several events at international fora and also visits at Svalbard focusing at the need for a safe international storage of seeds with significance for future food security. The Nordic Genetic Resource Center (NordGen) is honored to be trusted as the operative manager of SGSV. The success of our management depends on the network and strong support in practical and scientific matters, as well as financially provided by The Global Crop Diversity Trust. We also want to express our sincere gratitude to the Norwegian Directorate of Public Construction (Statsbygg) for the construction and facility management, and to the Ministry of Food and Agriculture for essential financial support.

NordGen is an institution under the Nordic Council of Ministers and was established in 2008, by a fusion of the three former institutions Nordic Gene Bank for agricultural and horticultural crops, Nordic Gene Bank for Farm Animals and the Nordic Council for Forest Reproductive Material. NordGen secures and promotes sustainable use of the Nordic genetic diversity within agriculture, horticulture, forestry, farm animals and food production. In addition, NordGen is responsible for promoting Nordic cooperation and also building bridges between the environmental and agricultural sector in this area of work.

Jessica Kathle
Director
NordGen



Introduction

The year 2009 was the second year of operation for the Svalbard Global Seed Vault (SGSV). Throughout the year we have seen a substantial growth in the number of seed samples stored and the high international standing associated with the project since its inauguration in February 2008 is maintained.

This document gives an overview of key events in the operation of SGSV in 2009. This annual progress report is prepared by The Nordic Genetic Resource Center (NordGen), the institution responsible for the daily operation of the SGSV. NordGen's operative responsibility is exercised according to an agreement with our partners in the funding, management and operation; the Norwegian Ministry of Food and Agriculture and the Global Crop Diversity Trust. The Vault's construction was funded by the Norwegian government, and its operation costs are funded by the Global Crop Diversity Trust and the Norwegian government in conjunction.

Operations may be divided into two elements: (1) physical maintenance of the facility overseen by Statsbygg and (2) seed management overseen by NordGen. In 2009, thanks to the enthusiasm and cooperative spirit shown by all concerned, from depositors to the local partners at Svalbard, the SGSV has functioned according to its mission in all important respects.

Physical maintenance

Since the inauguration in February 2008 the Seed Vault has been fully operational according to its purpose as high-security seed storage. The seeds are stored in the vault's chamber number two (the middle chamber) and the 491 058 samples stored by the end of 2009 fills about 1/3 of the total storage capacity in this chamber alone.

There have been some technical start-up problems in connection with the construction and the temperature. Statsbygg still considers the SGSV to be both in project phase and operation phase until the structure and all infrastructures works in a stable way.

The most notable problem was the damage of the entrance section, the Svalbard tube (summer 2008 and recurring during summer 2009) caused by settling of rock and dirt (due to the fact that the permafrost above was not reestablished prior to spring and thawing). The damage, which never affected the safety of the seed collections at the other end of the facility, has now been repaired in such a way that the tunnel structure at the entrance is stronger and more secure than before. New improvements are planned for spring and summer 2010.

Achieving the desired temperature of -18C has taken longer to achieve than expected. In part this is positive in that it indicates the reverse will also be true – it will take longer to warm in the event of equipment failure. The current temperature is approximately -15.5C.

It is important to note that these problems have not jeopardized the security of the seeds stored inside chamber number two.

Seed Management

NordGen's role is stated in the *Three Party Agreement between the Royal Ministry of Food and Agriculture of Norway, The Global Crop Diversity Trust and the Nordic Genebank*¹ providing for the long term funding, management and operation of the Svalbard Global Seed Vault. The Nordic Genetic Resource Centre is responsible for managing and operating the Seed Vault. This responsibility spans from liaising with PGRFA collection holders interested in depositing seed samples to operation of the databases and the storage process at Svalbard.

NordGen's organization of the work

The overall framework for the tasks to be carried out by NordGen is organized into four platforms, illustrated in Figure 1. A more detailed illustration of the tasks within each platform is described in the following text. A coordinator for the management and operation of the Seed Vault provides overall leadership and internal coordination of entering into deposit agreements, planning and preparing for seed shipments, and handling of the deposit openings on the site. A scientific expert works with public requests for information and visits to the site. All NordGen activities are done in cooperation with the partners, including in particular the Royal Norwegian Ministry of Food and Agriculture (LMD) and the Global Crop Diversity Trust (The Trust).

¹ The Nordic Genebank changed name to the Nordic Genetic Resource Centre (NordGen) in January 2008

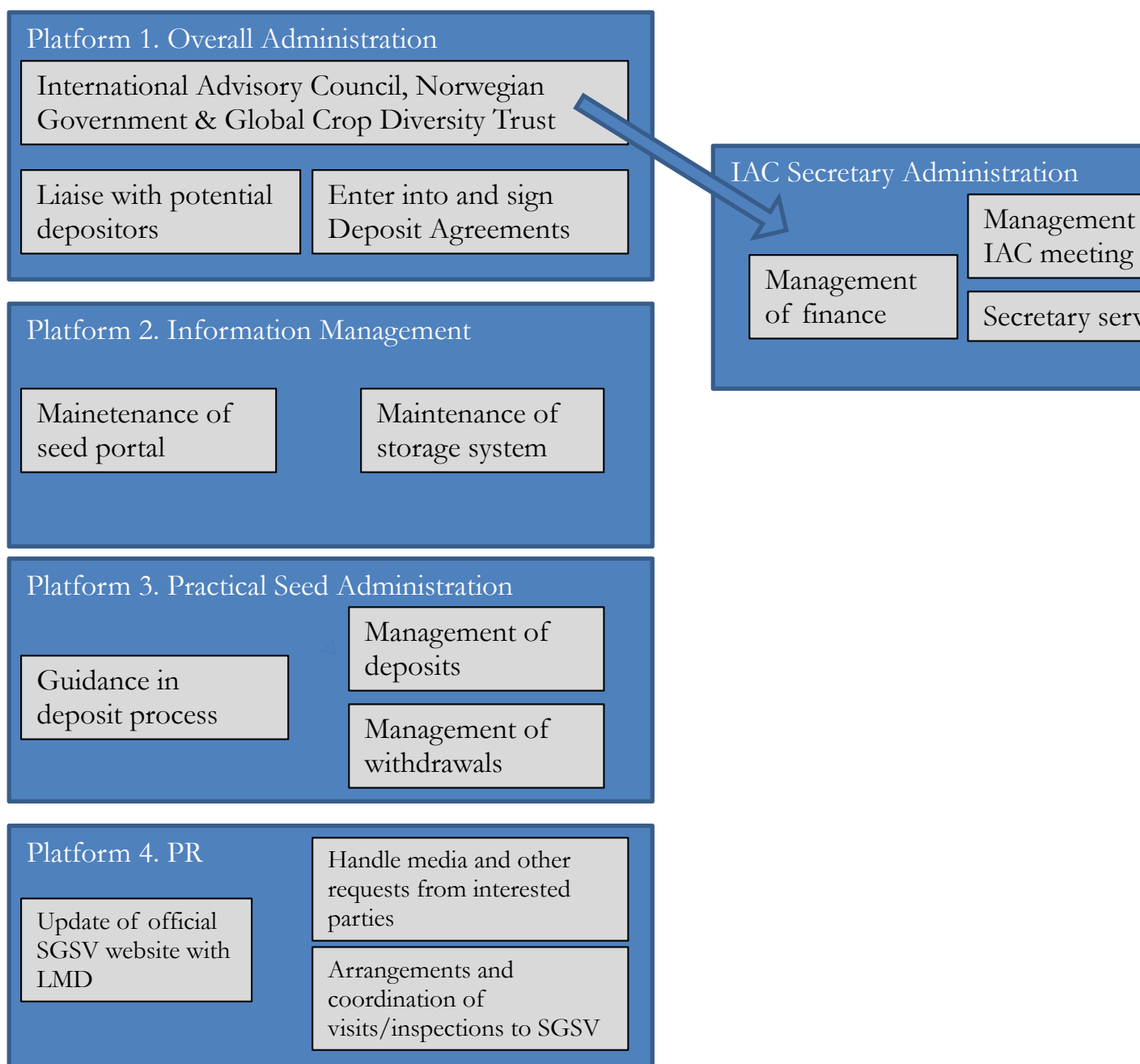


Figure 1. NordGen organization chart for the management and operation of the Svalbard Global Seed Vault.

Platform 1: Overall Administration & IAC Secretary Administration

The overall administration includes coordination and liaising with all relevant stakeholders to SGSV including, but not restricted to, The Royal Ministry of Food and Agriculture Norway, The Global Crop Diversity Trust, Statsbygg, The Governor of Svalbard, 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 annual financial statements to be presented to the Trust and the Royal Norwegian Ministry of Food and Agriculture (LMD), bookkeeping's of records and original vouchers in accordance with Nordic Council of Ministries practice. Open book

inspection service available for the Trust and the LMD. Further, annual progress reports (covering each year up to Dec 31) submitted by March 31 the following year, are provided by NordGen. Preparation of an annual budget for each financial year (to be approved by the Trust and the LMD), and submitted by April 1, of the year prior to the onset of the budget periods.

The secretary administration tasks for IAC lies within (1) budgetary administration (2) planning, arrangements and follow up of IAC meetings and (3) general secretary services for IAC members

By the end of 2009 NordGen had accepted deposits from 27 deposit institutes. Annex 1 provides a list of the deposit institutes and the number of samples in their respective deposits. The largest share of the current holdings in the SGSV (figure 2) is deposited by International Agricultural Research Institutes (IARCs), represented by several institutes belonging to the Consultative Group of International Agricultural Research Centers (CGIAR) and the Asian Vegetable Research Centre (AVRDC), all hold collections of PGRFA *in trust* for the UN Food and Agriculture Organization (FAO). The composition of the current holding in the SGSV reflects the strategy for operation of the Seed Vault as endorsed by the International Advisory Council: An open invitation has been disseminated to all major genebanks and the public interfaces of the Seed Vault on the internet welcomes all genebanks that are able to meet the terms and conditions of the Standard Deposit Agreement. In addition to this general invitation to make use of the SGSV services the IARC collection holders have been given specific follow-up to ensure that the *in-trust* collections form the core of the SGSV collection. 2009 also saw the beginnings of collaboration with a new group of prioritized collections; the institutes funded by the Global Crop Diversity Trust in their global system regeneration project in which they work with more than 54 institutes in 43 developing countries to regenerate and safety duplicate threatened accessions of PGRFA. Table 1 and figure 2 show the share of the current SGSV holdings of genebanks in the Seed Vault according to the categories IARCs, OECD country institute and non-OECD country institute.

Table 1. 2009 holdings in the Seed Vault according to geographic origin of the intitutes.

Category	Institutes	Seed Samples
IARC	11	363,958
OECD	10	118,309
Non-OECD	6	9259

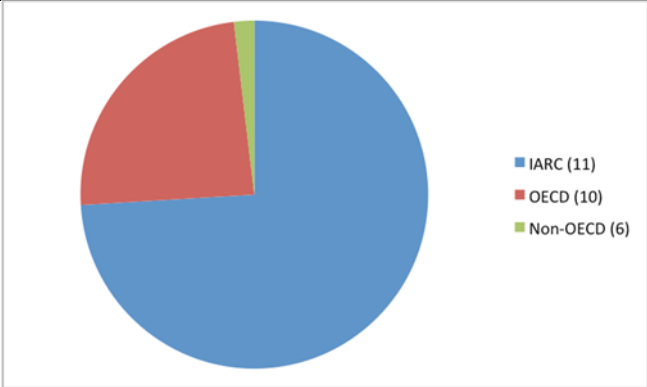


Figure 2. Holdings in SGSV in share of seed samples according to geographic mandate of the depositor institutes. Number of institutes in each category in parenthesis.

To improve communication with non-english speaking depositors the Standard Deposit Agreement was translated into Spanish and French and these versions were made publicly available at the public Seed Portal website maintained by NordGen during the autumn 2009: www.nordgen.org/sgsv

In 2009 the IAC assembled in connection with the 1-year anniversary seminar in February. Various issues with regard to the operation and management of the Seed Vault were discussed and the IAC requested further documentation and gave advice on some aspects of the operations and policies. The minutes from the meeting is attached here as Annex 2.

An overview of the budget and spending is attached here as Annex 3.

Platform 2: Information management

This platform serves the development, technical service to depositors, and maintenance of the Seed Vault Data Portal, where information about the stored material is made publicly available through the Internet. The URL for the public data portal site is www.nordgen.org/sgsv. There are links to this portal both from NordGen's homepage and the official webpage of the Seed Vault maintained by the LMD, as well as the website of the Global Crop Diversity Trust. The portal provides access to all the descriptors reported by depositors, in addition the site offers illustration of the data in the form of maps (figure 3).

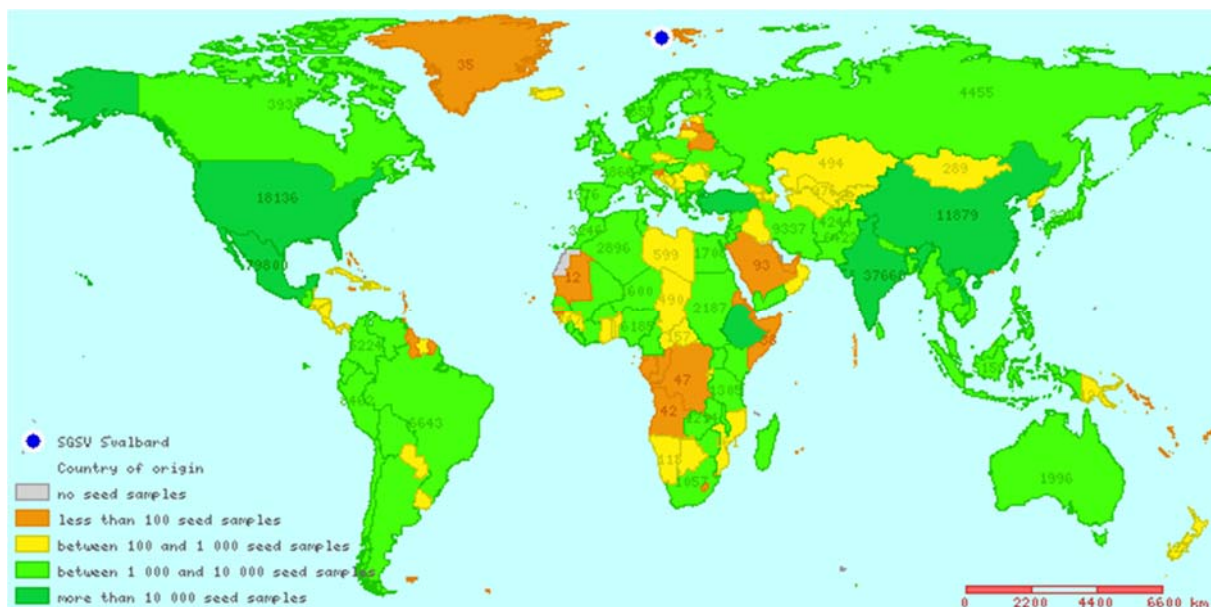


Figure 3. Map of country of origin for seed samples held in SGSV by the end of 2009. Graphics from the data portal at www.nordgen.org/sgsv

The data portal is an important tool in NordGen's interaction with partners, especially the Global Crop Diversity Trust and the depositors. The data portal is also a standard reference for journalists searching for the latest statistics and biological and geographic descriptors of the

material stored in SGSV. Figure 4 shows the traffic on the data portal website in 2009. The public use of the data portal shows an association with major events in the project, such as the anniversary seminar in late February 2009.



Figure 4. Statistics from Google analytics for the data portal at www.nordgen.org/sgsv

The data portal has been developed and updated throughout 2009, including the guidelines for depositing seeds in the SGSV. The database is updated directly following every seed deposit event. The electronic inventories submitted by the depositors are of varying quality and only a few have been in such a condition that they could be uploaded to the database without any problems. However, all technical mistakes have been resolved in collaboration with the depositors. Since data quality is still a matter with potential for improvement NordGen will continue to update and improve guidelines and templates to ensure a smooth uploading process. In 2009 the IT personnel at NordGen developed the data portal functions to include an option for depositors to up-load their own datasets. For this purpose a guideline document was also developed. Depositors are required to provide electronic inventories of the material they wish to deposit prior to shipment to Svalbard. 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 storage system of SGSV is maintained on separate servers at NordGen headquarters in Sweden. So far NordGen has not detected obvious duplications of material and all deposits from SDA signatories have been accepted.

Data from the SGSV dataportal is included in the System-wide Information Network for Genetic Resources (SINGER) - the germplasm information exchange network of the Consultative Group on International Agricultural Research (CGIAR) and its partners.

Platform 3: Practical Seed Administration

This platform serves the update and maintenance of guidelines and thus practical depositing and withdrawal of seeds from the Seed Vault. It is closely interlinked with Platform 2 (Information Management) on database management.



Figure 5. Seed boxes processed in the Vault. Photo by Yann Morvan

Overall management of transport logistics and hence also exit arrangements for seeds deposited is also managed under this platform. The practical seed administration further covers assistance regarding security, customs, phytosanitary certificates and other relevant clearances. LMD is the primary responsible body for the Seed Vault surveillance and maintenance, however, NordGen work closely with Statsbygg who is the responsible institution for the surveillance and maintenance of the constructions of the Seed Vault.

The work in this platform is primarily carried out by the coordinator of operations and management, but draws on expertise and assistance from the seed technicians at NordGen headquarters. The major part of this work takes place on site at Svalbard and the coordination of all practical aspects of the deposits relies on close cooperation with several local institutions and resource people in Oslo and at Svalbard: Logistics from Oslo to Longyerabyen is currently handled by the logistics company Jetpak; logistics at Svalbard is handled by the company Pole Position; screening and security at arrival Svalbard is handled by the security company Securitas as well as the airport management at Longyearbyen airport Svalbard; statsbygg provides support with logistics and technical backstopping during deposit events.

Table 2. Deposit openings in 2009

Deposit date	Institute country	Inst. acronym	No Seed Samples	No boxes	No countries of origin
12.02.2009	Canada	PGRC	3291	24	67
24.02.2009	Switzerland	RAC	3845	10	25
	Colombia	CIAT	3200	10	84
	Ireland	AFT	577	1	1
	Ireland	DAFF	100	1	4
	Mexico	CIMMYT	22771	40	38
	Syria	ICARDA	32267	93	101
	USA	NPGS	20003	67	144
17.04.2009	Taiwan	TARI	4018	6	1
	Ukraine	UAAS	885	6	31
	USA	SSE	936	2	47
17.06.2009	Germany	IPK	4679	7	99

	Kenya	NGBK	756	2	9
	Nigeria	IITA	4901	16	81
	Pakistan	PGRI-NARC	1117	1	1
05.10.2009	Benin	WARDA	4535	8	53
	Taiwan	AVRDC	1752	6	59
14.12.2009	Switzerland	RAC	5820	13	56
	India	ICRISAT	24000	72	109
	Syria	ICARDA	31520	68	107

The year 2009 saw a substantial increase in the holdings in SGSV: 170 973 new seed samples were deposited. This increased holdings by 35% and the total holding by the end of the year was 491 058 samples. The statistics from the data base (figure 6) shows that wheat and rice are the crops best represented in terms of number of samples in the Seed Vault.

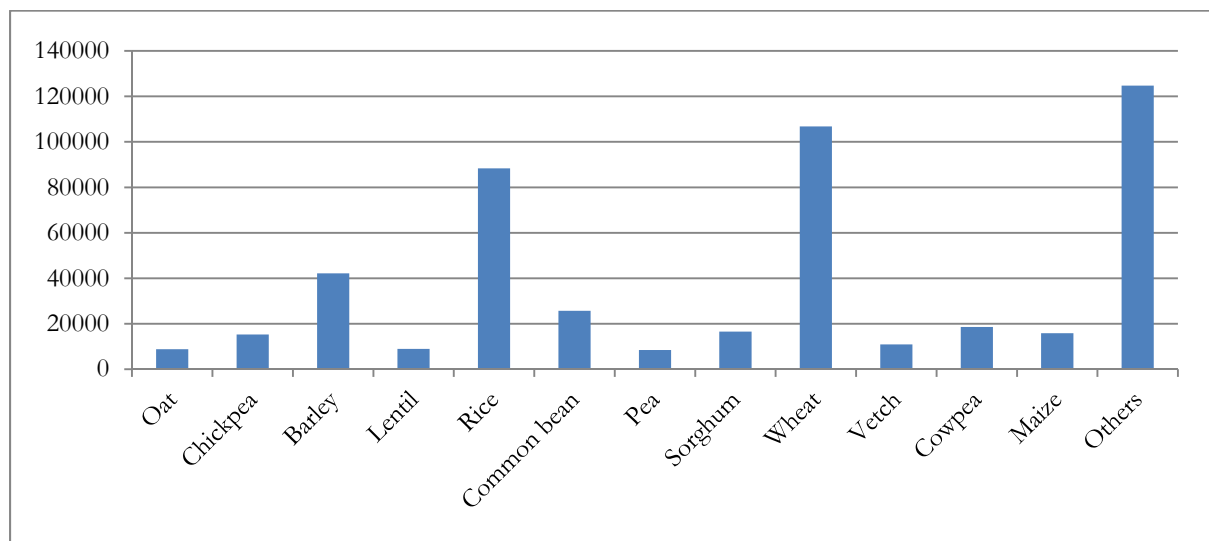


Figure 6. Statistics of holdings for selected crops in the SGSV by the end of 2009.

NordGen organized six deposit openings in 2009 and thereby gave ample opportunities for all depositors to ship deposits at a time of their convenience. 18 institutes deposited in 2009 and among them were five new participating institutes from Ireland, Switzerland, Taiwan and Ukraine joined the project by signing the SDA and shipping seeds in 2009.

Platform 4: PR

The development and maintenance of NordGen-SGSV website are carried out within this platform, together with press and journalist correspondence in general and arrangement and coordination of visits/requested inspections to SGSV.

The Seed Vault has attained a large external interest over the year. The highlight occurred in February with celebration of the one-year anniversary of the opening. Around 60 key persons from around the world were assembled in Longyearbyen for a “Svalbard seminar” focused on Climate Change and genetic resources. The speeches were presented by highly esteemed

international experts. The experiences of the meeting were very positive raising the plan to biannually arrange a similar, high level meeting centred around a current topic of interest.



Figure 7. Boxes on the shelves in the Vault. Photo Yann Morvan

Other important events were in early September when Ban Ki-Moon, Secretary General of the United Nations, visited Svalbard and the Vault together with a large media surveillance. In mid August representatives from the American Congress made a study visit to the Arctic area, including the Vault and in mid-September a BBC-team visited Svalbard for making a special program about genetic resources with a major focus of preservation and utilization.

The Norwegian government, with approval from NordGen and The Global Crop Diversity Trust has developed a visiting policy for the Vault. It clearly states the high security demands for visits and will be a great help in planning of future visits. NordGen, who is responsible for the (biological) operation, makes a time planning for visits, for example, when new shipments are expected. The aim is to have the Vault accessible for visits 4-6 times pro year at those occasions when NordGen staff is present on Svalbard.

There are an increasing number of requests for visits, interviews or answering particular questions connected to The Vault or more general comments of conservation and utilization of genetic resources. From the beginning of the year there have been some 100 inquiries from all over the world. There are many categories who want to visit the Vault, such as politicians and policy makers, donors, depositors, daily newspapers, many periodicals and magazines, photo reportage, art projects, general public, scientists and students. Due to the strict visiting policy only a limited number has been accepted. One problem now arising is to get feedback from visits by media. There is also an increasing number of requests for access to photo material or DVDs connected to The Vault to be used in various articles and reportages. NordGen has developed a system giving access to this kind of material.

Because of some misconceived criticism of the Seed Vault project on certain blogs and minor media outlets it was decided in 2008 to publish a text entitled “Some common misunderstandings about the Svalbard Global Seed Vault” on the site of the Global Crop Diversity Trust (<http://www.croptrust.org/main/arcticseedvault.php?itemid=211>), as a way to communicate factual information to interested parties. Monitoring of the Internet in the period from June 2008 to June 2009 showed an overwhelming majority of positive news and web entries for the search words “Svalbard Global Seed Vault”. Moreover, there was a clear decreasing trend in criticism throughout the period monitored. The misconceived criticism is thus not seen as a communication challenge at this time.

Annex 1 Total holdings per depositors

Depositor_name	Institute_acronym	Institute_code	Accessions	Seed_boxes	Taxa	Countries
<i>Canadian Genetic Resources Program, Saskatoon Research Centre</i>	PGRC	CAN004	9233	72	191	87
Station Federale de Recherches en Production Vegetale de Changins	RAC	CHE001	9665	23	7	61
Africa Rice Center	WARDA	CIV039	9939	18	7	76
Centro Internacional de Agricultura Tropical	CIAT	COL003	34111	103	503	127
Leibniz Institute of Plant Genetics and Crop Plant Research	IPK	DEU146	22350	37	2298	120
International Livestock Research Institute	ILRI	ETH013	4008	7	515	92
International Crop Research Institute for the Semi-Arid Tropics	ICRISAT	IND002	44003	136	9	115
Oak Park Research Centre	AFT	IRL001	577	1	7	1
Department of Agriculture, Food and Rural Development	DAFF	IRL029	100	1	4	4
National Genebank of Kenya	NGBK	KEN015	1314	3	6	9
World Agroforestry Centre	ICRAF	KEN023	508	4	130	28
National Agrobiodiversity Center	NAC	KOR043	13185	48	36	1
Centro Internacional de Mejoramiento de Maiz y Trigo	CIMMYT	MEX002	80492	202	12	59
International Institute of Tropical Agriculture	IITA	NGA057	11414	37	50	100
Centre for Genetic Resources	CGN	NLD037	18212	38	224	147
Plant Genetic Resources Institute, National Agricultural Research Centre	PGRI-NARC	PAK001	1597	2	13	1
Centro Internacional de la Papa	CIP	PER001	5847	3	188	23
International Rice Research Institute	IRRI	PHL001	70180	238	50	122
National Plant Genetic Resources Laboratory	NPGRL	PHL005	500	1	4	16
N.I. Vavilov All-Russian Scientific Research Institute of Plant Industry	VIR	RUS001	945	13	111	69
Nordic Genetic Resource Center	NORDGEN	SWE054	12698	29	289	74
International Centre for Agricultural Research in Dry Areas	ICARDA	SYR002	94354	252	705	125
The World Vegetable Center	AVRDC	TWN001	9102	28	113	96
Taiwan Agricultural Research Institute	TARI	TWN006	4018	6	1	1
Institute of Plant Production n.a. V.Y. Yurjev of UAAS	UAAS	UKR001	885	6	36	31
Seed Savers Exchange	SSE	USA974	1421	4	39	67
National Plant Germplasm System	NPGS	USA996	30868	133	934	155

Annex 2.

Minutes

Meeting of the International Advisory Council of Svalbard Global Seed Vault (SGSV)

Date: 25 of February 2009

Location: Radisson SAS Polar Hotel, Svalbard, Norway

The following Members of the Advisory Council were present:

Cary Fowler, Global Crop Diversity Trust, (chair)

Jean Hanson, ILRI (vice-chair)

Modesto Fernandez Diaz-Silveira, ITPGRFA

Emile Frison, Bioversity

Lawrent Pungulani, Malawi PGRC

Wilhelmina Pelegrina, SEARICE

Ruth Haug, UMB, Norway

Arne Malme, Governor of Svalbard

Jessica Kathle, NordGen (Secretary)

The following Members of the Advisory Council sent their apologies:

Shivaji Pandey, FAO

Observers attended the meeting:

Grethe Evjen, LMD

Gerald Moore, Global Crop Diversity Trust

Roland von Bothmer, NordGen

Ola Westengen, NordGen

The meeting was called to order, and Members and Observers were welcomed by Chair. In particular, he welcomed new members and members attending for the first time.

1. Adoption of the Agenda:

The Agenda was adopted.

2. Short presentation of the new members

Members and observers introduced themselves.

3. Adaption of the minutes from 27 of February 2008

The Minutes were adopted without any changes.

It was decided to circulate the minutes to the members for adoption as soon as possible after IAC meetings. The chair suggested and the IAC agreed that it should have general Rules of Procedure and requested Gerald Moore to draft such Rules for presentation to the next meeting.

4. Status Report on the seed-deposits of SGSV was given by Ola Westengen

Ola Westengen stated that 25 seed-depositor agreements (DA) have been signed, covering more than 400 000 seed samples originally sourced from more than 100 countries. The status of depositors and material are regularly updated at: www.nordgen.org/sgsv/.

5. Overview and review of operations of the SGSV was given by Ola Westengen

Ola Westengen gave a brief overview of key events in the first full year of operation of the Svalbard Global Seed Vault (SGSV). Operations may be divided into two elements: (1) physical maintenance of the facility overseen by Statsbygg and (2) seed management overseen by NordGen. In all important respects, the SGSV has functioned according to its mission thanks to the enthusiasm and cooperative spirit shown by all concerned, from depositors to the local partners in Svalbard.

Certain start-up problems were experienced with the physical facility in its first year. This is not particularly surprising given the uniqueness of the construction and certain challenges that could not easily have been foreseen. The most notable problem was the damage of the entrance section, the Svalbard tube (summer 2008) caused by settling of rock and dirt caused by the fact that the permafrost above was not reestablished prior to spring (due in part to the fact that construction and the refilling of dirt and rocks was completed too late in the winter to allow for complete re-freezing). The damage, which never affected the safety of the seed collections at the other end of the facility, has now been repaired in such a way that the tunnel structure at the entrance is stronger and more secure than before. In addition, (a.) a drainage system has been installed in case of any future water incursion in this area, and (b.) an additional doorway has been placed in the tunnel to prevent cool air in the tunnel from escaping.

Achieving the desired temperature of -18C has taken longer to achieve than expected. In part this is positive in that it indicates the reverse will also be true – it will take longer to warm in the event of equipment failure. The current temperature is approximately -15.5C. Engineers have advised to improve air circulation by moving boxes away from the fans in Vault Room 2. This has now been done.

The IAC *recommends* that consideration be given to options (such as freezer packs) that might add “bulk,” trap the cold, and assist in lowering the temperature further and reducing electricity costs.

Concerning management of the seed deposits: There were four deposit openings in 2008, and one thus far in 2009. This has provided multiple opportunities for potential depositors to arrange for seed shipments. Dates are arranged and settled in advance in consultation with depositors. Deposits of the CGIAR institutions and of developing

countries have been financially supported by the Trust (incl. standard boxes, packages and shipping). OECD countries are expected to cover their own expenses. As a result, a number have chosen different types of deposit boxes.

Ola Westengen of Nordgen raised four issues about which Nordgen requests the advice of the IAC:

(1): Four genebanks have deposited seeds, but not yet signed the Deposit Agreement, while

(2): others have signed but so far no deposit has been made (Brazil and India).

(3): According to the Deposit Agreement, Article 1.6.3, safety duplication in another genebank is required unless waived. A waiver has been given for the Netherlands (CGN). This is an issue in the EU which is requesting that the Seed Vault function as their first level duplication. Also the question arises of who issues waivers? ECPGR does not see the need of three levels of replicates for its collections and argues that it would make more sense to place the first duplicate in the most secure facility, i.e., the Seed Vault.

(4): How important is achievement of the standard of -18C in the storage vault?

The IAC discussed each issue raised by NordGen. The results of these discussions are summarized as follows:

(1): It is important to encourage depositors to accept the terms of the International Treaty on Plant Genetic Resources and to sign the Deposit Agreement. However, there is a need to be flexible and patient, recognizing the goal of providing secure conservation and the reality that finalization of the Deposit Agreement can take time due to legal and administrative reasons. The IAC *notes* that in some cases, an exchange of letters of intent may be a useful option.

The IAC *recommends* that NordGen follow up with depositors that have not yet signed the Deposit Agreement and that NordGen send them a letter stating that in the absence of a signed agreement, the materials are being maintained as if the Deposit Agreement has been signed and asking that they acknowledge this and that they sign the agreement as soon as possible. The IAC further *recommends* that there should be no new deposits without agreements except in exceptional circumstances where material is at risk. It is understood that NordGen retains discretion to make this determination.

(2): The IAC believes that some genebanks will need longer than expected for regeneration and shipment, and that patience is warranted.

(3): The IAC understands that the existing deposit policies are meant to minimize management and transaction costs. Some genebanks are asking to use the Seed Vault as the first and primary safety back-up location. The IAC *recognizes* that providing a first-level back-up for different genebanks has different management and cost implications. Currently NordGen has the authority to waive the guidelines. The IAC *reaffirms* this authority. At its next meeting, the IAC will discuss criteria to help with the decision-making. NordGen is *requested* to prepare a document on this topic for discussion at the next meeting of the IAC.

(4): The IAC does not believe that the current level of cooling presents an immediate or intermediate-term problem. It will review and reassess the situation at its next meeting. In the meantime, the IAC *requests* a technical report on cooling and the experience with temperature levels from Statsbygg/LMD. Furthermore, as noted above, the IAC *suggests* that consideration be given to adding freezer packs or other forms of "bulk" to assist the existing compressors to lower the temperature. Depositors should be told that the temperature is currently at the -15C level.

6. Review of any policies associated with SGSV by Gerald Moore

Gerald Moore provided an introductory overview of policy considerations related to visitation to the Seed Vault, and presented a draft (attached) for a Visitation Policy. He stressed that the final policy should reflect the goals of the Seed Vault, and should be flexible.

The draft visitation policy and the principles underlying it were discussed in some detail by the IAC. The IAC *expressed* the strong view that it is very important that the visitation policy reflect the goals of the Seed Vault to provide both secure long-term conservation and play an important role in raising the awareness of the global community about the importance of conservation of crop diversity. The IAC *concluded* that the two goals are not mutually exclusive.

The IAC *concluded* that the facility currently provides unparalleled security, and has made an historic contribution in global awareness-raising. The IAC *congratulated* all concerned parties for the successful management of the facility.

The IAC *agreed* that the visitation policy should continue to provide robust security for seed collections. It further *noted* that the policy should recognize and be based on the exercise of responsibility by the partners to the tripartite agreement, and it must provide flexibility in access to the facility. The IAC *concluded* that the draft policy furnished an appropriate and effective balance between the security and public awareness raising needs without sacrificing the security of the facility or the safety of the seeds. The IAC *noted* that the draft policy should allow the three partners to be consulted and agree and should provide clarity on who takes the decision for approval of a visit and who is responsible during the visit.

Recommendations:

The IAC *supports* the principles put forward in the draft policy and recognizes the importance of balancing security for the seeds with the need to provide public awareness and raise support.

The IAC *advocates* a flexible policy that does not compromise security but advances the larger goals of the Svalbard Global Seed Vault. The IAC *notes* examples of how security and visitation are managed in other genebanks. It *commends* the security in place and *recognizes* the obligation and responsibilities of the partners to show due diligence on issues of access.

The IAC *supports* the draft policy and unanimously *recommends* its adoption by the Parties to the tripartite agreement.

The IAC *recognizes* the urgency of having an approved policy for practical reasons and to capitalize on the investment and work that has gone into the Seed Vault. The IAC *stresses* that the visitation policy should be jointly agreed by all the partners, and that it should be flexible enough to enable partners to carry out awareness raising responsibilities in an effective manner. The IAC *urges* the partners to finalize the agreement as soon as possible.

7. Review of the Depositor's Agreement

The item was partly discussed under Agenda item 5. The main points discussed were:

- (1) A deposit of wild species seeds from Svalbard has been made to the SGSV and will be used for experimental purposes and research. There are two other requests; one from botanical gardens/Ash seeds for Norwegian species, and one from an NGO in USA working on desert legumes. Management capacity is limited at SGSV and NordGen prefers not to take on additional work linked to wild species of plants not linked to food and agriculture. Use of the Millennium Seed Bank in the UK might be an option for such materials.
- (2) The CGIAR plans to send 80% of the "in-trust" collection by 2011.
- (3) Non PGRFA samples. There may be some special cases in which some collections might be accepted for deposit. Different issues arise for such collections due to management and cost considerations. It may be possible to use the genepool concept and determine the species to be accepted. The management agreement gives priority for species for food security and sustainable agriculture.

Conclusion:

The IAC *requests* the Secretariat to prepare a background paper exploring management and cost implications for storing non-PGRFA collections for discussion at the next meeting.

8. Future strategy for building the collection

The IAC *noted* with pleasure that the Seed Vault has attracted a very large number of deposits in its first year and is currently providing protection to a significant portion of the world's crop diversity.

NordGen explained that there has been an open invitation to potential seed depositors on the web. In addition invitations have been made through crop directories, regional PGR networks, and at FAO meetings.

While the Seed Vault aims to conserve unique accessions as opposed to multiple copies of identical accessions, lack of detailed accession-level information will mean that some duplication is inevitable. NordGen aims to work closely with the System-Wide Genetic Resources Programme of the CGIAR, and with the Global Crop Diversity Trust's

regeneration projects underway in more than 40 developing countries. Some countries, developed and developing, may have financial constraints to deposit materials. The Trust, however, is working with developing countries to facilitate shipments.

Cary Fowler of the Trust will use upcoming visits to a number of countries to promote deposits. It was also noted that Roland von Bothmer now has a 20% position at NordGen for promoting SGSV internationally.

The IAC *noted* the desirability of having a better monitoring system of what will be deposited in near future.

The IAC *agreed* that the Council has an important international role to play in promoting awareness of and building credibility about the Seed Vault with potential depositors. The IAC should therefore enhance the confidence of depositors to use the facility to provide insurance against loss of seed collections.

Recommendation:

The IAC *recommends* that use of the Seed Vault be raised in meetings of the FAO Commission on Genetic Resources and the International Treaty to increase visibility, transparency and use.

9. Any other business

The IAC *noted* that while the publicity surrounding the Seed Vault had been overwhelmingly positive and accurate, there have been a very small number of highly inaccurate “conspiracy” oriented reports that it found unfounded and unfortunate. The IAC considered that rather than respond to ridiculous assertions that can sometimes appear and proliferate on the internet, the Seed Vault and its managers should focus on conveying accurate information and building a positive image.

The IAC discussed the current “100 year experiment” on seed storage overseen by NordGen. There is a new proposal from NordGen to assess effects of long-term storage on a broad range of species for PGRFA. The IAC *supports* this initiative, because it will provide important scientific information about storage under permafrost conditions and contribute to due diligence in the management of the Seed Vault. The IAC *hopes* that NordGen will be able to develop this new research initiative further.

Future meetings and agendas

The Agenda for the next meeting will be developed later in the year. As noted in these Minutes, there are several pending issues that will constitute part of the agenda for the next meeting. The venue of the meeting will be decided later, though there was sentiment to hold the next meeting in Rome to reduce travel time. It was also felt that the next meeting should be scheduled to allow more time for fuller discussion of an expanded agenda. If a meeting is held in Rome, the chair and/or another member should visit the Seed Vault beforehand in order to be able to report on physical conditions.

The IAC *agreed* to have standing closed-session agenda item in case there might be a need to discuss sensitive issues such as those dealing with security.

The IAC *expressed* sincere thanks to the Government of Norway and particularly to the Ministry of Agriculture and Food for their gift of the Svalbard Global Seed Vault to the global community. Thanks were also expressed by the IAC to NordGen, and especially to Ola Westengen and Jessica Kathle, for their efforts in managing the facility.

Finally, the IAC *expressed* its thanks to the Governor’s Office and to the local community for their strong and continuing support of the Svalbard Global Seed Vault which has been and will continue to be so important to its success.

The meeting was closed.

Annex 3. Budget and spending 2009

Activity	Cost Category	Items	Cost basis		Budget 2009	Actual spending
			SEK	Qty	SEK	SEK
372502: Coordinator	Personnel ^(a)	Coordinator	80 000	4,2	336 000	315 214
	Travel ^(b)	To Svalbard and other destinations	13 000	8	104 000	61 085
	Communication / supplies	Phone, printer, mailing etc.	20 000		20 000	11 333
Sub-total					460 000	387 632
372503: Platform 1 Overall Administration	Personnel ^(a)	Director and Finace Director	144 000	1	144 000	169 632
	Communication / supplies	Phone, printer, mailing etc.	10 000		10 000	4 633
	Travel ^(b)	1 trip each year to Svalbard	13 000	2	26 000	8 543
Sub-total					180 000	182 243
372504: Platform 2 Information Management	Personnel ^(a)	IT -manager	80 000	1	80 000	148 498
	Travel ^(b)	Trips to Svalbard	13 000	3	65 000	14 841
	Equipment	Media server				19 114
	IT-system	Server, web				36 000
Sub-total					145 000	218 453
372505: Platform 3 Practical Seed Administration	Personnel	Seed Technician	80 000	0,5	40 000	66 485
		Trips to Svalbard	13 000	1	13 000	23 860
		Miscellaneous cost -equipment and shipment			10 000	18 042
		Vehicle hire, local supplies			10 000	8 473
Sub-total					73 000	116 860
372506: Platform 4 PR	Personnel ^(a)	Information Coordinator	80 000	0,5	40 000	61 776
		Scientific information expert	125 000	2,4	300 000	349 386
	Travel ^(b)	To Svalbard and other destinations	13 000	8	104 000	103 343
	Information material	New information folder	30 000		30 000	19 231
	Materials for media	External filming, editing and multiplication	30 000		30 000	38 379
	Communication / supplies	Phone, printer, mailing etc.	20 000		30 000	849
Sub-total					534 000	572 964
International Advisory Council	Personnel	Director	144 000	0,5	72 000	76 861
	Travel (b)				300 000	152 904
	Communication/Supplies	Communication (phone, printer, mailing etc.)	5 000		5 000	1 666
	Expenditure			10 000	10 000	625
Sub-total					387 000	232 056
Total costs					1 779 000	1 710 208
Total SEK - actual						1 708 566
Total SEK – difference (d)						70 434
Result 2009 SEK						-1 642
TOTAL SEK					1 779 000	
TOTAL US\$^(c)					\$231 270	

(a) NordGen Personnel costed at avg SEK 80,000/month

(b) Travel costed at SEK 13,000/trip

(c) Based on exchange rate at 1 Swedish Krona = 0.13 US Dollar (17.11.2008)

(d) Due to negative difference in exchange rate – budget 7.69 SEK to actual 7.13 per US Dollar, this is a net loss.