

Experiences from Establishing an International Seed Bank – Svalbard Global Seed Vault – Practical Management Measures

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Abstract

The experiences and practical measures from establishing an international seed bank – Svalbard Global Seed Vault (SGSV) – are described in this paper. Built to serve as the most secure safety backup storage site for seeds on food crops conserved by seed banks worldwide and for a global system of *ex situ* collections of crop diversity, the paper presents the background for establishing the SGSV, its vision and framework, the structure and organization, the depositor agreement and the present day status of the SGSV.

Introduction of NordGen

The Nordic Genetic Resource Center (NordGen) was established by the Nordic Ministries on the first of January 2008 by merging the Nordic Gene Bank (NGB), the Nordic Gene Bank for Farm Animal (NGH) and the Nordic Council of Forest Reproductive Material (NSFP). The new institution is based upon more than 30 years of successful cooperation within genetic resources between the 5 Nordic countries; Norway, Sweden, Finland, Denmark, and Island. NordGen's main office is in Sweden (Alnarp), where the Nordic gene bank for seeds is also located, while the departments of farm animal and forest trees are in Norway. In addition there are networks and focal persons in all of the Nordic countries. The activities of NordGen cover conservation and sustainable use of genetic resources within crops, farm animal and forest trees. NordGen has a strong engagement both in influencing the international regulations and framework of genetic resources, and in assisting in the building and the managing of gene banks in developing countries. The mandate of NordGen has

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recently been expanded to include environmental issues linked to genetic resources relevant for food and agriculture which underlines our interdisciplinary approach.

Background for Svalbard Global Seed Vault

The history of what is today known as the Svalbard Global Seed Vault (SGSV) starts in 1984, when NordGen (at that time the Nordic Gene Bank) established its safety storage for its Nordic collections of seed on Svalbard in the permafrost of the closed down mine in the vicinity of the Svalbard capital Longyearbyen.

The positive experience of the storage by NordGen in the permafrost at Svalbard quickly led to the question of a safety deposit of seeds for the whole world being taken up by scientists and by the UN's Food and Agriculture Organization and the International Board for Plant Genetic Resources (IBPGR). Unfortunately a lack of funding and the lack of international frameworks and rules for the exchange of seeds between countries severely hampered the process. The necessary frameworks came in place when the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) came into force in 2004 which regulated the exchange of crop material. A real breakthrough appeared at the end of 2004, when an expert group strongly recommended the establishment of safety storage of seeds from the whole world at Svalbard and presented this to the FAO's Commission for Genetic Resources for Food and Agriculture. The report pointed to the important combination of Svalbard's geographical location, the very positive storage experiences since 1984 and the fact that several developing countries could already point to the very positive collaboration with the Nordic countries and NordGen. The group also pointed out, that Svalbard fulfilled even the worst case security requirements for long term storage. The recommendations of the report received the support of FAO's Commission for Genetic Resources for Food and Agriculture and in the autumn of 2005 a steering group led by the Norwegian Ministry for Food and Agriculture and consisting of the Global Crop Diversity Trust (GCDDT), NordGen, CGIAR and others commenced the planning for world seed storage at Svalbard. In May 2007 the construction of the facility was commenced and in February 2008, the Svalbard Global Seed Vault (SGSV) was officially opened to the world.

The vision and the framework

The tasks and challenges facing the genetic resources and the gene banks of the world today are many. War, natural disasters, climate change and a lack of adequate funding all constitute severe risks for the gene banks and the material stored in these. The SGSV plays a crucial role in meeting these tasks and challenges, and this is reflected in the vision of the SGSV, which states that:

- the Svalbard Global Seed Vault will provide a global security net;
- the Svalbard Global Seed Vault shall be the securest possible backup storage site for a global system of ex situ collections of crop diversity; and
- Svalbard Global Seed Vault shall have the capacity to conserve all unique plant genetic diversity relevant for food and agriculture held in conventional seed banks around the world.

To achieve this, the SGSV is run in accordance with the international framework – The Convention on Biological Diversity (CBD) and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). The SGSV therefore has the same objectives i.e. the conservation and sustainable use of biodiversity and a fair and equitable sharing of the benefits derived from their use.

The structure of the SGSV

The actual structure of the SGSV is designed to meet all the requirements for long-term storage with maximum security. The capacity of the vault is twice the amount of all known seeds stored in the gene banks of today. The facility is located at a geologically stable location 130 meters above sea level (above even the worst climate change scenario), the three storage halls are embedded 120 meters into the mountainside in solid rock, the temperature is maintained at a constant -18°C and permafrost works as a natural freeze guarantee at -4°C in the event of equipment failure (Fig. 1 and 2). The facility is further secured through a number of monitoring and surveillance with gas-, temperature- and motion-detectors. The many polar bears roaming the area of Svalbard provide yet another – though less controllable security for the facility!



Fig. 1. The entrance of SGSV and a cross-section of the seed vault deep inside the mountain.

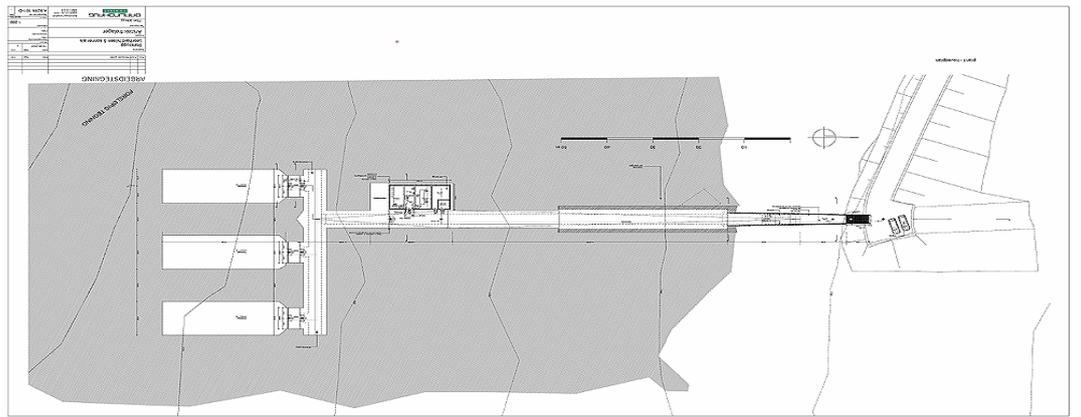


Fig. 2. The SGSV structure with the tunnel and three seed storage halls.

The organization

The organization of the SGSV reflects its international character and its long-term purpose for the whole world. Since Svalbard is Norwegian territory, the Norwegian government is the liable national authority. NordGen with its many years of experience with long-term storage and international work has the responsibility for the management and operation and sign the agreement with the depositors. The Global Crop Diversity Trust (GCDT) funds the operation and GCDT is also helping to secure operations by assisting

developing countries in the packing and dispatch of seed samples to Svalbard from eligible collections. Finally an International Advisory Council oversees the operation of the Vault, thereby ensuring that the SGSV is fulfilling its mandate and is meeting any unforeseen events according to the highest scientific expertise and in line with the international treaties.

How it all works – the terms of agreement

A number of terms apply for the seed-material placed in the SGSV and these are all specified in the depositor agreement signed by the depositors placing material in the SGSV. This agreement states, that:

- Storage in SGSV is free of charge for public and private holders of PGRFA;
- Shipment of seeds from developing countries will be supported by GCDT (while developed countries have to cover the shipment themselves);
- Material is stored in a Black box: meaning that it will never be opened and that the deposit of the seeds will not affect any property or other rights pertaining to the material;
- Viability testing, regeneration, and multiplication responsibility remains with the depositor;
- Information access is to be on public online data portal (SESTO);
- The depositor can on request at any time withdrawal the deposit; and
- The availability of the samples of accessions and non confidential information are regulated by Annex 1 of International Treaty (IT), Article 15.1(b) or Article 15.3 of IT or in case of none of these then terms and conditions that are substantially the same as Part IV of IT and applicable international agreements for material, which originated in the country of the depositor.

Status

The number of accessions stored in SGSV today (Oct. 2008) is 330,000 from more than 200 countries or regions. In particular, many large gene banks have deposited seeds in SGSV like CGIAR institutions (Fig. 3). Complements from local, national and regional gene banks are wanted and NordGen has send invitations for seeds depositing to all gene banks worldwide. The status with an overview of all deposited accessions in SGSV will continuously be up-dated on the website (www.nordgen.org/sgsv/).



Fig. 3. Preparation of the SGSV seed shipment

Conclusion

The experiences of the SGSV clearly show that to meet the challenges of securing the genetic resources of the world an active international collaboration and commitment is essential. The process can at times seem slow and painstaking, but the international collaboration and the framework for regulating this have progressed much during the last years. Also the political and financial will to provide the territorial location and the funding for the running costs and financial assistance to developing countries make a long-term storage project like the SGSV possible. The process has undoubtedly also been facilitated by the increasing public focus on the need to preserve the genetic resources of the world for the future. The media interest has been overwhelming. However, due to the vision of SGSV to be the most secure possible seed storage, the visiting policy has been very strict. In general, nobody except for the operators have entrance to Vault 2 where the seeds so far are stored. There is however, an informative model of SGSV with all relevant information in the Svalbard Museum open for everybody. The establishment of SGSV may be crucial in securing the plant genetic resources, but we have to remember that this is only one of the many steps needed to secure the future of mankind.

Standard Agreement between the Depositor and the Royal Norwegian Ministry of Agriculture and Food

Preamble

Whereas

1. The Government of the Kingdom of Norway has established the Svalbard Global Seed Vault to provide a safety net for the international conservation system of plant genetic resources, and to contribute to securing the maximum amount of plant genetic diversity of importance to humanity for long-term in accordance with the latest scientific knowledge and most appropriate techniques;
2. The Svalbard Global Seed Vault will be under the ownership of the Government of the Kingdom of Norway, and situated in Longyearbyen, Svalbard. The Royal Norwegian Ministry of Agriculture and Food is the national authority liable for the Svalbard Global Seed Vault;
3. The Royal Norwegian Ministry of Agriculture and Food, the Global Crop diversity Trust and the Nordic Gene Bank have entered into an agreement providing for the management, operation and long-term funding of the Svalbard Global Seed Vault. Under the agreement, the Nordic Gene Bank is required to liaise with depositors with respect to the material to be deposited and timetable and process for deposition, including guiding the depositors with regard to the packaging and labeling of the material to be deposited consistent with the guidelines and relevant national and international law, and is required, on behalf of the Royal Norwegian Ministry of Agriculture and Food, to enter into and sign the deposit Agreements with depositors on the basis of the Standard Deposit Agreement;
4. [*****] (hereinafter referred to as “the depositor”) holds a collection of seeds of distinct plant genetic resources of importance to humanity, and wishes to ensure the long-term safety of its collection by depositing samples of that collection in the Svalbard Global Seed Vault.

Now therefore, the Royal Norwegian Ministry of Agriculture and Food and the Depositor (hereinafter referred to collectively as “the Parties”) hereby agree as follows:

Article 1

Deposit of Plant Genetic Resources

1. The Depositor agrees to deposit in the Svalbard Seed Vault samples of plant genetic resources described generally in Annex 1 to this Agreement (hereinafter referred to as “the Deposited Materials”), and the Royal Norwegian Ministry of Agriculture and Food agrees to accept such deposit, in accordance with the terms and conditions set out in this Agreement.
2. The depositor recognizes the right of the Royal Norwegian Ministry of Agriculture and food to refuse to accept samples for deposit, or to terminate the deposit
 - a. if the Depositor fails to comply fully with the terms and conditions set out in this Agreement; or
 - b. for reasons of force majeure.
3. In particular and without prejudice to the generality of the above, the Depositor recognizes the right of the Royal Norwegian Ministry of Agriculture and Food to refuse to accept samples for deposit or to terminate the deposit of samples already deposited if the samples constitute duplicates of materials already held in deposit in the Svalbard Global Seed Vault.

Article 2

Effect of the Deposit on Property rights

1. The act of depositing the Deposited Materials in the Svalbard Global Seed Vault shall have no affect whatsoever on the nature and extent of any property rights pertaining to the Deposited Materials.
2. In particular and without prejudice to the generality of the above, the act of deposit shall not act in any way to convey any property rights over the Deposited Materials to the Nordic Gene Bank or the Royal Norwegian Ministry of Agriculture and Food.

Article 3

Obligations of the Depositor

1. Subject to paragraph 2 of this Article, the Depositor shall deposit only samples of plant genetic resources that
 - a. are, to the best of the Depositor's knowledge,

- i. of importance to food security and sustainable agriculture;
 - ii. the samples of plant genetic resources that have not yet been deposited in the Svalbard Global Seed Vault;
 - b. have been safety duplicated in a suitable genebank.
2. Any or all of the requirements set out in paragraph 1 of this Article may be waived by the Royal Norwegian Ministry of Agriculture and Food, or by the Nordic Gene Bank or other institution designated by the Royal Norwegian Ministry of Agriculture and Food to act on its behalf as manager of the Svalbard Global Seed Vault. Any waiver granted shall be in writing.
 3. The Depositor shall provide an inventory of each shipment of Deposited Materials under this Agreement in accordance with the standards set out in Annex 2.
 4. The Depositor shall ensure that Deposited Materials in each shipment:
 - a. conform fully to the general descriptions of the Deposited Materials in Annex 1 and to the specific descriptions in the inventory for that shipment;
 - b. are accompanied by any necessary certificates relating to the plant health of the samples as may be required by the laws of the country of export, the Government of the Kingdom of Norway, and any other country through whose territory the Deposited Materials are to transit, and that other procedures required by those laws in respect of that shipment have been complied with;
 - c. are deposited consistent with other relevant national and international law;
 - d. have been packed, sealed and labelled and are accompanied by appropriate documentation in conformity with the standards set out in Annex 2 to this Agreement, taking into account such guidelines as may be issued from time to time by the Royal Norwegian Ministry of Agriculture and Food; and
 - e. will be dispatched in accordance with the schedule set out in Annex 1 to this agreement.

Article 4

Conditions of Deposit

1. The material deposited will be maintained in permafrost conditions supplemented by refrigeration in accordance with internationally agreed standards for long-term seed storage.

2. All storage costs pertaining to the Deposited Materials shall, unless otherwise agreed between the Parties, be the responsibility of the Royal Norwegian Ministry of Agriculture and Food. Costs pertaining to the packaging and shipping of the Deposited Materials shall be borne by the Depositor.
3. The Deposited Materials will remain in sealed envelopes packed in sealed boxes, unless otherwise agreed with the Depositor. Where packages or boxes are damaged during transport or storage, or where packages or boxes have been opened for inspection by customs or other authorities, the Royal Norwegian Ministry of Agriculture and Food shall notify the Depositor. In the event that seeds have been spilled they will be destroyed. In the case of other damage the Royal Norwegian Ministry of Agriculture and Food will endeavour to repair the damage where possible, or provide for the repackaging or resealing of the Deposited Materials in consultation with, and with the agreement of, the Depositor.
4. The Royal Norwegian Ministry of Agriculture and Food will not accept responsibility for any germination testing of Deposited Materials, except as may be otherwise agreed in writing with the Depositor. The Royal Norwegian Ministry of Agriculture and Food will return testing samples of the Deposited Material for germination testing by the Depositor at the Depositor's request and expense, where such testing samples have been provided by the Depositor for that purpose in agreement with the Royal Norwegian Ministry of Agriculture and Food. Testing samples shall be packed in separate boxes.
5. The Royal Norwegian Ministry of Agriculture and Food shall inform the Depositor of the location of the Deposited Materials in the Svalbard Global Seed Vault.

Article 5

Withdrawal of Deposited Materials

1. The Depositor shall have the right to withdraw all or any of the Deposited Materials at any time on the giving of written notice.
2. Any written notice given under this Article shall identify the individual boxes of Deposited Materials that are to be withdrawn. No Deposited Materials will be returned where this requires the opening of a box or boxes in which the Deposited Materials are packed.

3. The Royal Norwegian Ministry of Agriculture and Food undertakes to return the Deposited Materials within a period of one year from the date of receipt of such written notice.
4. The costs of packaging and shipping in respect of the return of Deposited Materials shall, unless otherwise agreed between the Parties, be borne by the Depositor.
5. The Depositor shall be responsible for complying with all export clearance procedures required by the Government of the Kingdom of Norway of the Deposited Materials and for all import or transit procedures required by the country of import or transit. The Royal Norwegian Ministry of Agriculture and Food shall use its best efforts to provide such documentation regarding the Deposited Materials and the conditions under which the Deposited Materials were deposited as may be necessary to facilitate such procedures.
6. The Depositor shall notify the Royal Norwegian Ministry of Agriculture and Food in writing if it wishes the Deposited Materials to be no longer retained in the Svalbard Global Seed Vault but does not wish the Deposited Materials to be returned to it; in such case, the Deposited Materials will be disposed of by the Royal Norwegian Ministry of Agriculture and Food in accordance with its operating rules and procedures applicable to the Svalbard Global Seed Vault.

Article 6

Right of the Royal Norwegian Ministry of Agriculture and Food to Terminate the Deposit

1. The Royal Norwegian Ministry of Agriculture and Food shall have the right to terminate the deposit, or part thereof, on the giving of one year's written notice, where such termination is required as the result of any change in the policy of the Svalbard Global Seed Vault or the Government of the Kingdom of Norway with respect to the Svalbard Global Seed Vault.
2. Where Deposited Materials are returned as a result of the exercise by the Royal Norwegian Ministry of Agriculture and Food of its right of termination under this Article, the costs of packaging and shipping in respect of the return of Deposited Materials shall be borne by the Royal Norwegian Ministry of Agriculture and Food.

Article 7

Availability of Plant Genetic Resources

1. In consideration for the right to deposit samples of plant genetic resources in the Svalbard Global Seed Vault, the Depositor agrees to make available from their own stocks samples of accessions of the deposited plant genetic resources and associated available non-confidential information to other natural or legal persons in accordance with the following terms and conditions:
 - a. Where the plant genetic resources are plant genetic resources for food and agriculture of crops listed in Annex 1 of *the International Treaty on Plant Genetic Resources for Food and Agriculture* [hereinafter referred to as “the Treaty”], in accordance with the terms and conditions set out in Part IV of the Treaty; or
 - b. Where the plant genetic resources are plant genetic resources for food and agriculture covered by Article 15.I.(b) or Article 15.3 of the Treaty, in accordance with the terms and conditions provided for in Article 15.I.(b) or Article 15.3 of the Treaty, as the case may be; or
 - c. Where the plant genetic resources for food and agriculture are not of crops listed in Annex 1 of the Treaty or covered by Article 15.I (b) or Article 15.3 of the Treaty, either:
 - i. In accordance with terms and conditions that are substantially the same as the terms and conditions set out in Part IV of the Treaty; or
 - ii. Where the plant genetic resources for food and agriculture originated in the country of the Depositor, and are not available for facilitated access under the terms of the Treaty, in accordance with the provisions of applicable international agreements.
 - d. Where the plant genetic resources are not plant genetic resources for food and agriculture, in accordance with the terms and conditions set out in paragraph c. above as appropriate.
2. The Royal Norwegian Ministry of Agriculture and Food reserves the right to give the highest priority to the safety storage of plant genetic resources for food and agriculture that are available in accordance with the terms and conditions set out in Part IV or Article 15 of the Treaty or terms and conditions that are substantially the same as those terms and conditions.

Article 8

Liability

1. The Royal Norwegian Ministry of Agriculture and Food shall not be liable for any damage caused to the Deposited Materials by any reason whatsoever, unless such damage has been caused as a result of any act of malfeasance or negligence on the part of the Royal Norwegian Ministry of Agriculture and Food or any employee or agent of the Royal Norwegian Ministry of Agriculture and Food.
2. In the event of any damage caused by malfeasance or negligence on the part of the Royal Norwegian Ministry of Agriculture and Food or any employee or agent of the Royal Norwegian Ministry of Agriculture and Food, the liability of the Royal Norwegian Ministry of Agriculture and Food shall be limited to the costs of packaging and shipping of new samples, and shall not include costs of regeneration of the plant genetic resources, or similar costs.

Article 9

Amendment

1. This Agreement, including the annexes to this Agreement, may be amended by mutual written agreement of the Parties.
2. Any amendment shall enter into force on the date provided for in the amending agreement.

Article 10

Entry into Force

This Agreement shall come into force on its signature by the authorized representatives of both the Depositor and the Royal Norwegian Ministry of Agriculture and Food.

Article 11

Duration of the Agreement

1. This Agreement shall remain in force for a period of ten (10) years and shall be renewed automatically for further periods of ten (10) years unless either Party gives notice in writing to the other Party at least six months prior to the expiry of any ten (10)

years period that it does not wish this Agreement to be renewed.

2. This Agreement may be terminated by mutual agreement between the Parties to this Agreement.

Article 12

Settlement of disputes

1. Any dispute that cannot be settled by negotiations between the Parties to this Agreement, or through such other procedure as may be agreed between the Parties, shall be finally settled by arbitration in accordance with the Rules of Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said Rules.
2. This Agreement shall be governed by the laws of the Kingdom of Norway.

Article 13

Signature

This Agreement will be signed in three copies.

Signed on behalf of the Depositor:

**Signed on behalf of the Royal
Norwegian Ministry of Agriculture
and Food:**

Signature

Signature

Name

Name

Title

Title

Date

Date

Annex 1

General Description of the Deposited Materials

Depositors are required to provide the following information describing their planned deposit of materials under the Agreement.

Provide a listing of the genera/species and crop to be deposited

- Provide the approximate total number of samples and the approximate number by crop
- Provide a provisional schedule for the deposit shipments, giving the approximate month and year of each shipment and the approximate number of samples per shipment

The information should be provided in the following tabular format:

Crop/Species	Month/2008	Month/Year	Month/Year	Month/Year	etc.	Total
Wheat	10,000*	5,000	etc.			
Rice						
etc.						
Total						100,000

* Number of samples

- Provide any additional information that the Royal Norwegian Ministry of Agriculture and Food may request in order to be able to arrange the deposits.

Annex 2

Requirements for the Quality, Quantity, Packing, Inventory, and Shipment of Deposit Materials

2. The samples of plant genetic resources for food and agriculture (PGRFA) must be of seed of high viability, free from diseases and pests as far as possible, and able to maintain adequate levels of germination for at least 10 years.
3. Each sample should contain sufficient seeds to maintain the genetic integrity of the accession of PGRFA through at least two independent regenerations. In general, this may require a sample size in the order of 500 seeds; however actual sample size shall be at the discretion of the Depositor in accordance with latest scientific best practice.
4. The seed samples must be packed and sealed in laminated aluminum foil packets. The foil packets must be durable and impervious to moisture, and generally conform to standards recommended for low temperature seed storage. Where packets contain sharp seeds, appropriate linings must be used to minimize the risk of puncturing the packets.
5. Each seed packet must be labelled with the Depositor's accession identifier/number for the PGRFA in question. Labels must be durable under the conditions of long-term low temperature storage.
6. The seed packets must be packed and sealed in deposit boxes. The boxes must be durable, constructed of a material that is strong enough to support the weight of the seed packets they contain, withstand handling during shipping and remain rigid during cold storage, and generally conform to standards recommended for low temperature storage.
7. A deposit box should be filled with samples that are expected to have the same life span (ie. are of the same species and regeneration cycle), thus in general needing replacement at the same time.
8. Each deposit box must be labelled with the Depositor's name and box identification number. Labels must be durable under the conditions of long-term low temperature storage, and must be placed on the top and four sides of the box.

9. The deposit boxes must have an external dimension no greater than 60cm long by 40cm wide by 28cm high and no less than 55cm long by 35cm wide by 25cm high. Where deposit boxes of a smaller dimension are necessary (see point 6) then two but no more than three deposit boxes may be placed in a storage box that conforms with required maximum and minimum dimensions. In these cases the outside box must also be labeled with the Depositor's name and the identification numbers for the deposit boxes inside.
10. Any boxes of testing samples for germination checking (as may have been agreed with the Nordic Gene Bank) must be clearly marked accordingly.
11. All deposit boxes must include a list of their contents within the sealed box. The list must provide at the minimum the following information for each seed sample in the box:
 - the Depositor's accession number/identifier;
 - the crop and full scientific name;
 - the country of collection or source;
 - the number of seeds in the sample; and
 - the month and years of regeneration.
12. For each planned shipment of Deposit Materials to the Svalbard Global Seed Vault (as described in Annex 1):
 - Notice of the deposit must be confirmed to the Nordic Gene Bank at least six weeks in advance of the planned date of shipping. This notice must include an electronic inventory of the contents of all the deposit boxes in the planned shipment. The inventory should include the Depositor's name, the deposit box numbers and for each deposit box the data required on the contents as listed under paragraph 10. In general, the electronic inventory should conform to data standards widely used for inventorying PGRFA collections and to the data template provided by the Nordic Gene Bank.
 - Following receipt of confirmation from the Nordic Gene Bank that the deposit can proceed and the import document for Svalbard, the shipment should be made by air courier to Longyearbyen, Svalbard following the fastest and most direct routing, where possible avoiding transit through airports where temperatures are high.
 - All shipments must conform to the requirements set out in this Annex and any additional guidelines provided by the Nordic Gene Bank, and include all necessary export, phytosanitary and import documentation.

- The shipment must be addressed to:
The Svalbard Global Seed Vault
The Governor of Svalbard
PO Box 633
9171 Longyearbyen
Svalbard
Norway

- Further information can be sought from:
The Coordinator for the management of the Svalbard Global Seed Vault,
The Nordic Gene Bank
PO Box 4 1
Smedjevägen 3, Alnarp
S-23053 Alnarp
Sweden
Tel: +46 4053 6640
Fax: +46 4053 6650
www.nordgen.org/ngb



Data Submission Template for the **Svalbard Global Seed Vault (SGSV)**

The spreadsheets below are the data submission template for the Svalbard Global Seed Vault (SGSV). You will find here two template sheets for data entry: Accessions and Institutions. The template sheet for reporting data about the accessions is mandatory. The template sheet for reporting additional information about institutes is optional.

You may want to report the inventory of the seeds in your shipment in another data format. Currently supported data formats include tab-separated text (txt), comma separated values (CSV) and XML data. Please contact the staff at SGSV if you have other favorite data formats you wish to use when reporting your inventory of seeds.

A data portal for the Svalbard Global Seed Vault (SGSV) is now available online from the link below. From the SGSV data portal you will find a tool to submit this template spreadsheet online. For access and permissions to this online tool to upload your template you will be provided with a personal password. You may also send your completed data submission template by email addressed to the staff at the SGSV (sgsv@nordgen.org).

<http://www.nordgen.org/sgsv/>

Depositor (contact data for the seed shipment)

The contact data for all seed depositors will be registered at the data portal site. The registered seed depositors will be able to update their own contact data at the portal web site, authenticated by a personal password. Please include at least one contact person and email address to be used by the SGSV to make contact about the seed shipment or for later correspondence about the deposited box.

Accessions (list of seeds in the shipment)

Please use the format of the SGSV data submission template to report your inventory of seed accessions you want to send to the Svalbard Global Seed Vault. Please note that the descriptors for Institute code, Collection name, Accession number, Full scientific name, Country of collection or source, and Regeneration month and year are mandatory.

Accessions: Descriptors

Institute code	WIEWS Institute Code (INSTCODE) for the institute holding the genebank accession. (You may access the WIEWS institute database at http://apps3.fao.org/wiews/)
Deposit box number	Give each box in your shipment a unique number, and record here those numbers.
Collection name	If your genebank uses parallel numbering systems for different collections, give here the name of the collection, e.g. Bean Collection.
Accession number	Please make sure that the combination of Institute Code, Collection name and Accession number is globally unique.
Full scientific name	<i>Genus species subspecies</i> , including authority and year of description if available.
Country of collection or source	Where the accession is originally from. Please use ISO-3166-1 (alpha 3) country codes if possible.
Number of seeds	This number can be based on a full count or on an estimate from the weight of the sample.
Regeneration month and year	The harvest year is mandatory to be able to identify the regeneration cycle of the seed sample. (Examples: 2005, 2005-10-08)
Other accession designations	You may report other accession designations here (L.e. accession number for the same accession in another genebank). A semi-colon should separate each designation.

Institutions (if needed, additional information about referred institutes)

You may report additional data on institutions using the template sheet labeled "Institutions". Please note that a valid WIEWS Institute Code (FAO's World Information and Early Warning System on Plant Genetic Resources for Food and Agriculture) is required for the holding genebank institute. This sheet for the Institute data is voluntarily, if all the institutes you refer to are described by the WIEWS Institute Code (INSTCODE) the data you report here need not be used.