

*BUILDING
TOMORROW,
EVERYDAY*

2012-13

**ANNUAL &
SUSTAINABILITY
REPORT**

Contents

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Solid and Sustainable Fonds, Built on solidarity

BACKGROUND

National Seeds Corporation approached the concept of sustainable development as “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” NSC realized that sustainable development promotes the idea that social, environmental, and economic progress that are all attainable within the limits of our earth’s natural resources. Sustainable development also approaches everything in the world as being connected through space, time and quality of life.

NSC’s contribution towards sustainable development demonstrates how we, today, are benefitting from the economic choices we make and policies we endorse today. It is also impacting the lives of our children and adults.

NSC’s interventions constantly seek to achieve social and economic progress in ways that will not exhaust the earth’s finite natural resources. The needs of the people are real and immediate, yet it is necessary to develop ways to meet these needs that do not disregard the future. The capacity of our ecosystem is not limitless, meaning that future generations may not be able to meet their needs the way we are able to now.

Another element that makes organizations strong, resilient and self-reliant is their ability to innovate around a strengths-based approach to development work. Such pragmatic decisions rather than ‘ideologically ‘purist’ applying the ‘pretty good solution’ and using their knowledge to link problems with sustainable solutions have been adopted by NSC. This pragmatic approach extends to the strategic use of educational, research and technical information.

NSC has enabled ownership of infrastructure created under sustainable development by valuing diversity and successfully innovating strengths-based groups to foster and nurture sustenance. Organizations like NSC that are able to find their own local solutions and take a pluralistic approach that are more resilient in the face of adversity.

The world’s resources are finite, and growth that is unmanaged and unsustainable is leading to increased poverty and decline of the environment. We owe it to future generations to explore lifestyles and paths of development that effectively balance progress with awareness of its environmental impact. In order to preserve the future, we must appreciate the interconnectedness between humans and nature at all levels. Sustainable development practices can help us do this, and through education and building awareness, preserving the future is within everyone’s reach.

Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature. Therefore the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations. In order to achieve sustainable development, environmental protection constitutes an integral part of the development process and cannot be considered in isolation from it.

National Seeds Corporation through its endeavours has involved its state officials in every state during implementation of the various components of the SD programme. They have cooperated in the essential task of plugging the indispensable requirements for sustainable development by constructing rain water harvesting structures, Afforestation, Management of Sox, Nox and Noise Pollution, Conducting Promotional activities on SD at suppliers / partner premises and training of NSC employees on the aspects of SD.

To achieve sustainable development and a higher quality of life for all people, NSC has made efforts to reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

INTERVENTIONS OF SUSTAINABLE DEVELOPMENT

- **Rain water Harvesting**

Rain Water Harvesting Structures were constructed at Aurangabad, Chittorgarh and Jalgaon with the purpose for collecting, storing, and using rainwater for landscape irrigation and other uses. The rainwater is collected from various hard surfaces such as roof tops and/or other types of manmade above ground hard surfaces. This ancient practice is currently growing in popularity throughout our communities due to interest in reducing the consumption of potable water and the inherent qualities of rainwater.

NSC aims to make use of the natural resource and reduce flooding, storm water runoff, erosion, and contamination of surface water with pesticides, sediment, metals, and fertilizers. This process will also reduce the need for imported water and act as an excellent source of water for landscape irrigation, with no chemicals such as fluoride and chlorine, and any dissolved salts and minerals from the soil.



- **Afforestation (Tree Plantation)**

Someone's sitting in the shade today because someone planted a tree a long time ago." - Warren Buffett.

Development and environmental protection are interdependent and indivisible. NSC Officials realised that planting shade-giving trees around schools and playgrounds is an effective way of protecting children from the harsh rays of the sun. NSC has distributed 20,075 saplings of different types to be planted in villages. These saplings were distributed through Gram Panchayats and Schools by the Regional Managers.



The trees planted in schools provide shading play spaces, cooling the school yard, create shelter for birds, reduce energy consumption for cooling in hot weather by shading buildings and portable classrooms, improving aesthetics and comfort and educating people on the benefits of trees. Tree planting along the boundary of large fields is useful for strong live fences, windbreaks, wood energy and other complementary products such as fodder.

NSC planted trees for various reasons, including maintaining water sources, upgrading soil quality, improving climate, providing shelter for livestock, for social advantages, cultural and traditional conservation and for beautifying the landscape.

- **Management of Sox, Nox and Noise Pollution**

Traditionally, measures designed to reduce localized ground-level concentrations of sulfur oxides (SOx) used high-level dispersion. Although these measures reduced localized health impacts, it is now realized that sulfur compounds travel long distances in the upper atmosphere and can cause damage far from the original source. Therefore the objective must be to reduce total emissions. The extent to which SOx emissions harm human health depends primarily on ground-level ambient concentrations, the number of people exposed, and the duration of exposure. Source location can affect these parameters; thus, plant siting is a critical factor in any SOx management strategy.

Since sulfur emissions are proportional to the sulfur content of the fuel, an effective means of reducing SOx emissions is to burn low-sulfur fuel such as natural gas, low-sulfur oil, or low-sulfur coal.

Nitrogen oxides or NOx are chemical oxides that are produced during combustion at high temperatures. The two elements, nitrogen and oxygen typically do not react with each other at normal temperatures, but when high temperature combustion occurs, the elements combine to form this toxic oxide. The release of these toxins into the atmosphere is considered major contributors to air pollution, and for industries and manufacturers of internal combustion engines, NOx reduction is now a legal necessity.

Besides being a single toxin, NOx combines with other substances and creates smog when it is exposed to sunlight. This creates a major health hazard for people that live in affected areas. NOx penetrates into the lung tissue and can cause permanent damage to lung tissue. Children, the elderly, people with asthma and other breathing difficulties, and people that work outside are especially susceptible to the negative health effects of NOx. The way to reduce that health risk is for companies to employ NOx reduction measures.



Nitrogen oxides also combine with water which produces nitric acid. When released from the atmosphere it is called acid rain, and results in significant long term damage to any structure that is repeatedly exposed to it. Using modern selective catalytic reduction methods it is now possible to remove 70 to 95% of the nitrogen oxides that are released into the environment.

The amount that is removed really depends on the SCR method that is used and the type of operation it is used with.

Industries and manufacturers are now very focused on NOx reduction in their operations. It has helped to improve environmental conditions around their operations, and has helped to improve the health of people living in affected areas.

Various methods have been adopted to control noise pollution. Some of the effective methods are:

- Identify the sources of noise pollution
- Grasp the various adverse impacts of noise pollution
- Quantify the noise levels
- Develop methodologies to control noise pollution
- Document the noise levels in a systematic approach
- Be able to execute assignments in your locality pertaining to noise pollution
- Identification, quantification and control of unwanted noise

The testing of Sox, NOx and Noise Pollution of all 28 DG Sets available at Seed Processing Plants were tested through designated Pollution Control Laboratories. All DG sets were found meeting permissible standard limits. The location-wise details of D.G sets test report and expenditure incurred are available.

Agency M/s. QMS Certification Services Pvt. Ltd. Delhi has conducted the Audit of Management of Sox, Nox and Noise Pollution and has issued certificates.

A Certificate that all 28 DG sets have stack gas emissions well within the prescribed permissible limit and test were conducted. Environmental issues are best handled with the participation of all concerned citizens, at the relevant level are involved. NSC has made this possible by adopting the process of testing its DG sets.

Each individual should have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Conducting Promotional Activities on Sustainable Development at supplier/ partner premises



Today's successful businesses know that environmental management and environmental functions are integral parts of an organization's everyday operations and its strategic plan. These companies are successful because they understand the environmental implications of their business functions, such that environmental issues are considered essential components of business processes, rather than consequences of those processes. Sustainable development is about planning and carrying out the agency's mission today - with full consideration of the external factors that could

affect the achievement of long-term goals. In today's competition for limited funds, resources, and workers, advantage goes to organizations demonstrating commitment to long-term value.

For decades, the Government has led the Nation in the energy efficient, resource-conserving building design, construction, and operation exemplified by this and other Orders. We have also made great progress in water conservation, use of recycled products and renewable energy sources, reducing emissions that contribute to air pollution and global climate change. But, simply promoting greater efficiency in the use of our resources is no longer enough. By applying sustainable principles, we can also create better work environments and communities. Rethinking standard design practices, using environmentally preferable products, and reexamining how we use and maintain our facilities will also lead to a healthier and more productive workforce.

NSC has conducted Promotional Activities on Sustainable Development at M/s. Bhatia Quality Seeds, Udham Singh Nagar Uttarakhand and M/s Nirmal Seeds Pvt. Ltd at Jalgaon, Maharashtra. The total number of participants who attended the training at Udham Singh Nagar, Uttarakhand and Jalgaon, Maharashtra was 44 and 51 respectively. The training was imparted by experience faculty members representing M/s .QMS certification Services Pvt. Ltd. Delhi.

Suppliers/ Partners were trained on Waste Management, Water Management, Energy Management, Biodiversity Conservation, Natural Resource Management, Carbon Management and Supply Chain.

- **Training of NSC employees on the aspects of SD at the seed processing plant of NSC**

Training on issues related to Sustainable Development was conducted for the NSC staff by M/s.QMS Certification Services Pvt. Ltd. The training on EMS was given by Trained Faculty of M/s .QMS Certification Services Pvt. Ltd. Delhi

| Sl. No. | Place of Training | No of participants | Date of training |
|---------|-------------------|--------------------|---------------------------------|
| 1 | Kanpur | 100 | October 30 th , 2012 |
| 2 | Indore | | October 10 th , 2012 |
| 3 | Hebbal | | October 4 th , 2012 |



The training was conducted in line with the Guideline on Sustainable Development (SD) based on the Memorandum of Understanding between CPSEs and Administrative Ministries/Departments.

The following areas that are part of the Guidelines were included in the training program:

1. Waste Management

NSC is expected to implement measures for waste management including the reduction, re-use and recycling of waste materials through proper means. Such projects/activities may also include process innovations including substitution of materials.

2. Water Management

NSC is expected to implement measures for efficient water usage. This can be achieved through various means such as management of water resources for industrial / domestic purposes including ground and surface water.

3. Energy Management

NSC is expected to implement measures to optimize usage of energy and increase energy efficiency throughout the organization, in the form of both fuel and electricity. NSC may consult the Bureau of Energy Efficiency’s Guidelines on Energy Efficiency while deciding on projects/activities under energy management. Projects / activities related to renewable energy / alternative energy would also be considered under Energy Management.

4. Biodiversity Conservation

NSC is expected to implement measures for Biodiversity Conservation which is the practice of protecting, conserving and restoring/reclaiming the ecosystem. The Biological Diversity Act, 2002 defines Biodiversity as “the variability among living organisms from all sources and the ecological complexes of which they are part, and includes diversity within species or between species and of eco-systems.”

5. Natural Resource Management

NSC is expected to implement measures for ensuring the management of natural resources such as land, water, air, soil, minerals or any other related resources. Natural resource management specifically focuses on scientific and technical understanding of resources, ecology and life-supporting capacity of those resources for both present and future generations.

6. Carbon Management

NSC can implement carbon management measures across its activities and operations in a phased manner. Carbon management measures would include steps to reduce carbon intensity of organizations activities / operations. Projects / activities under carbon management can also be linked to appropriate missions of National Action Plan on Climate Change and / sectoral initiatives such as those by the steel and cement sectors.

7. Supply Chain

NSC is encouraged to initiate and implement measures aimed at greening the supply chain. This also includes the projects / activities taken up by CPSEs with specific focus on introducing the aspects of SD to their supply chains.

8. External Charters / Mandates

This covers project / activities related to providing support for external charters / mandates. In case NSC is paid signatories / members of any external charters / mandates, merely reporting on the same will not be considered. In such cases, active involvement of NSC will have to be demonstrated in terms of individual or group projects / activities executed.

9. Life Cycle Analysis

NSC can implement measures for mapping the life cycle impacts of their products / services. NSC can include projects / activities related to reducing the life cycle impacts of products / services during manufacture or use or disposal phase. Life cycle impact assessment studies based on ISO 14064 can also be considered here.

10. SD Reporting

NSC is expected to report on their SD performance on the public domain. This reporting can be based on any of the available guidelines on reporting of SD performance. External assurance of such reports would help increase the weightage of such projects / activities. Mere reporting of SD intentions / forward looking statements will not be considered.

11. Training

NSC is expected to train its personnel and partners in aspects of SD. All projects / activities related to creating awareness on the CPSEs' SD initiatives amongst its personnel / partners can be considered here. The CPSEs can also consider introducing mandatory hours of SD training for all personnel.

All the projects undertaken were evaluated and certified after verification by external agencies:

- Rain water harvesting in own campus
- Afforestation (Tree Plantation)
- Management of Sox, Nox and Noise Pollution
- Conducting Promotional activities on SD at suppliers/ partner premises (Environmental Management Practices)

A. Positive results despite challenging conditions



Sustainable development hinges on the principle of self-reliance and the notion that people should be able to determine their own future. To achieve this, community groups need to explore and value the availability of local knowledge, culture and resources. Key aspects of this are valuing local skills and local processes. Key aspects of success include being able to determine one's own future and being guided by the vision handed down by ancestors.

Success of sustainable development entails creation of self-determined structures and processes that develop organically from the community itself, rather than in response to prescriptive policy frameworks. Resilient and strong organisations facilitate the collective ownership of ideas and reflective action so that the local power of community members is enhanced and they retain informed ownership. While owning the initiatives, they also manage the risks, to bridge the divide between planning and implementation.

Successful outcomes projects have been the development of strong leadership skills within young people, engagement in decision-making processes and collaborations to improve services for children and young people within the community.

In summary, sustainable development use knowledge to link their evolution from loose ad hoc networks to successful social enterprises dependent upon key external resources at critical points. Key features of their success are their widely networked and robust relationships, their openness to diversity, their innovative and strengths-based approach, their self-determination and their ability to engage their members in critically aware participation.

B. Assessing the socio-economic impact

RAINWATER HARVESTING

Rainwater harvesting enables people at household and community levels to manage their own water, thereby reducing their reliance on, and burden of, central supply systems. Besides access to safe water, rainwater harvesting yields numerous benefits: environmental (no negative impact), social (empowers people), economic (relatively low cost), as well as contributing to sustainable development (poverty reduction).

NSC constructed structures in the catchment, a surface on which rain is falling and from which it is drained towards a storage system on the ground. The drained water from the catchment is thereafter stored in a clean tank to make it available for later use.

Technologically this is very simple, employing traditional methods and the quality and quantity of collected rainwater can be sufficient for consumption, irrigation, washing, bathing, cleaning – even toilet flushing.

AFFORESTATION

Afforestation (Tree Plantation): NSC has distributed 20,075 trees to Gram Panchayats, Schools. These saplings were handed over by the Regional Managers to Gram Pradhans and School Authorities.

Social Benefits

We like trees around us because they make life more pleasant. Most of us respond to the presence of trees beyond simply observing their beauty. We feel serene, peaceful, restful, and tranquil in a grove of trees. We are “at home” there. Hospital patients have been shown to recover from surgery more quickly when their hospital room offered a view of trees.

The strong ties between people and trees are most evident in the resistance of community residents to removing trees to widen streets. Or we note the heroic efforts of individuals and organizations to save particularly large or historic trees in a community.



The stature, strength, and endurance of trees give them a cathedral-like quality. Because of their potential for long life, trees frequently are planted as living memorials. We often become personally attached to trees that we or those we love have planted.

Communal Benefits

Even though trees often are private properties, their size often makes them part of the community as well. Because trees occupy considerable space, planning is required if both you and your neighbors are to benefit. With proper selection and maintenance, trees can enhance and function on one property without infringing on the rights and privileges of neighbors.



City trees often serve several architectural and engineering functions. They provide privacy, emphasize views, or screen out objectionable views. They reduce glare and reflection. They direct pedestrian traffic. They provide background to and soften, complement, or enhance architecture.

Environmental Benefits

Trees alter the environment in which we live by moderating climate, improving air quality, conserving water, and harboring wildlife. Climate control is obtained by moderating the effects of sun, wind, and rain. Radiant energy from the sun is absorbed or deflected by leaves on deciduous trees in the summer and is only filtered by branches of deciduous trees in winter. We are cooler when we stand in the shade of trees and are not exposed to direct sunlight. In winter, we value the sun's radiant energy. Therefore, we should plant only small or deciduous trees on the south side of homes.

Wind speed and direction can be affected by trees. The more compact the foliage on the tree or group of trees, the greater the influence of the windbreak. The downward fall of rain, sleet, and hail is initially absorbed or deflected by trees, which provides some protection for people, pets, and buildings. Trees intercept water, store some of it, and reduce storm runoff and the possibility of flooding. Dew and frost are less common under trees because less radiant energy is released from the soil in those areas at night.

Temperature in the vicinity of trees is cooler than that away from trees. The larger the tree, the greater the cooling. By using trees in the cities, we are able to moderate the heat-island effect caused by pavement and buildings in commercial areas.

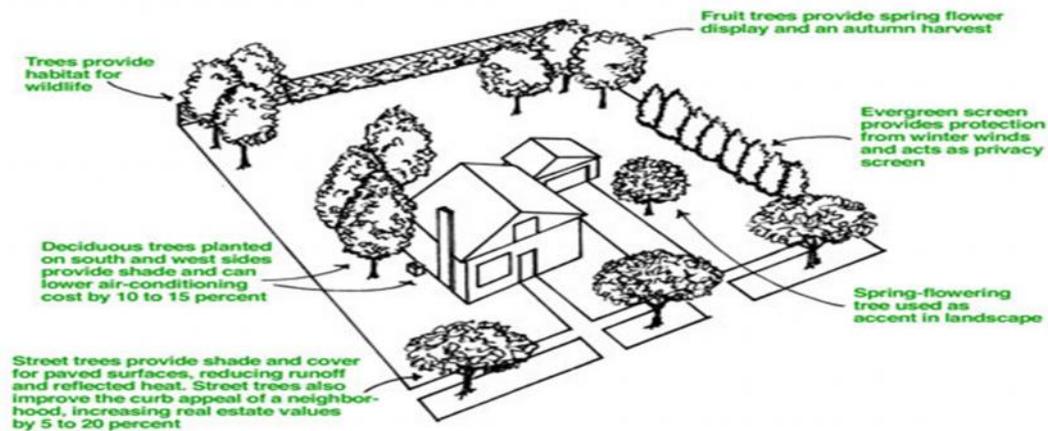
Air quality can be improved through the use of trees, shrubs, and turf. Leaves filter the air we breathe by removing dust and other particulates. Rain then washes the pollutants to the ground. Leaves absorb carbon dioxide from the air to form carbohydrates that are used in the plant's structure and function. In this process, leaves also absorb other air pollutants—such as ozone, carbon monoxide, and sulfur dioxide—and give off oxygen.

By planting trees and shrubs, we return to a more natural, less artificial environment. Birds and other wildlife are attracted to the area. The natural cycles of plant growth, reproduction, and decomposition are again present, both above and below ground. Natural harmony is restored to the urban environment.

Economic Benefits

Individual trees and shrubs have value, but the variability of species, size, condition, and function makes determining their economic value difficult. The economic benefits of trees can be both direct and indirect. Direct economic benefits are usually associated with energy costs. Air-conditioning costs are lower in a tree-shaded home. Heating costs are reduced when a home has a windbreak. Trees increase in value from the time they are planted until they mature.

The indirect economic benefits of trees are even greater. These benefits are available to the community or region. Lowered electricity bills are paid by customers when power companies are able to use less water in their cooling towers, build fewer new facilities to meet peak demands, use reduced amounts of fossil fuel in their furnaces, and use fewer measures to control air pollution. Communities also can save money if fewer facilities must be built to control storm water in the region. To the individual, these savings are small, but to the community, reductions in these expenses are often in the thousands of rupees.



Trees Require an Investment

Trees provide numerous aesthetic and economic benefits but also incur some costs. Investment is required for trees to provide the desired benefits. The biggest cost of trees and shrubs occurs when they are purchased and planted. Initial care almost always includes some watering.

To function well in the landscape, trees require maintenance. Corrective pruning and mulching gives trees a good start. Shade trees, however, quickly grow to a size that may require the services of a professional arborist. Arborists have the knowledge and equipment needed to prune, spray, fertilize, and otherwise maintain a large tree.

The intention should be to maintain plant vigor and initially inspections are conducted to detect and treat any existing problems that could be damaging or fatal. Thereafter, regular inspections and preventive maintenance to ensure plant health should be ensured.

Management of Sox, Nox and Noise Pollution

In India, pollution control efforts have traditionally focused on large industrial sources, in part because the problem is not well-understood. NSC has focused on a very critical aspect of pollution by setting its house in order by introducing checks and balances to limit pollution by following the traditional method to significantly reduce emission of SO_x, NO_x and pollution through its control strategies. These results suggest that informal polluters should be a high priority for organizations that strive to regulate pollution.

Conducting Promotional Activities on Sustainable Development at supplier/ partner premises

The Department Of Public Enterprise, in conjunction with SCOPE (Standing Conference of Public Enterprises) and the CPSEs aims to create a National SD Hub which will undertake / facilitate the following activities:

- Nation-wide compilation, documentation, and creation of database of SD projects / activities and initiatives of CPSEs;
- Advocacy;
- Research;
- Accreditation of external independent agencies / specialists / consultants for project review;
- Promotional activities, including production of short films, printing of brochures, pamphlets, promotional materials, etc.;
- Organising national and International Conferences, Seminars, Workshops, etc.;
- Act as a SD Think Tank OR Collaborate with external agencies to create a SD Think Tank;
- Setting up a National Data Centre;
- Any other matter as entrusted to it from time to time by the Department of Public Enterprises (DPE);
- Any other activities that it deems fit for the promotion of Sustainable Development.

Training of NSC employees on aspects of SD



Training is a learning process that increases knowledge and sharpens skills, enhancing employee performance. Sustainability training helps improve staff and management's knowledge of sustainability issues, as well as development of their skills for managing sustainably.

Like sustainability training, creating a workplace dialogue can also increase sustainability knowledge and skills in your organization. Workplace dialogue refers to a process of genuine interaction through which employees and employers

listen to each other deeply enough to be changed by what they learn. Each makes a serious effort to take others' concerns into her or his own picture, even when disagreements persist.

Today's successful businesses know that environmental management and environmental functions are integral parts of an organization's everyday operations and its strategic plan. These organisations are successful because they understand the environmental implications of their business functions, such that environmental issues are considered essential components of business processes, rather than consequences of those processes. Sustainable development is about planning and carrying out your agency's mission today - with full consideration of the external factors that could affect the achievement of long-term goals. In today's competition for limited funds, resources, and workers, the advantage goes to organizations demonstrating commitment to long-term value.

Understanding the basic principles of sustainable development allows us to transform operations in a logical and productive way. Sustainable development means integrating the decision-making process across the organization, so that every decision is made with an eye to the greatest long-term benefits.