Punjab State Council for Science & Technology
MGSIPA Complex, Sector – 26, Chandigarh.
## CONTENTS

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SUMMARY

The Punjab Biodiversity Board (PBB) was established in 2004 as a statutory body u/s 22 of the Biological Diversity Act 2002 vide Notification No. 2/41/2000-STE(1)3949 dated 23.12.2004. The Board was re-notified on 8th August, 2007 vide Notification No. 2/4/2000/STE(1)2875 dated 08.08.2007.

The following activities were pursued during the period 01.04.2007 to 31.03.2008:

1. **Second meeting of the Punjab Biodiversity Board** was held under the chairmanship of Sh. Bikram Singh Majithia, Science, Technology & Environment, Minister, Govt of Punjab on March 10, 2008.

2. **Celebration of International Biodiversity Day, 2006**

   International Biodiversity Day (2007) was celebrated on 22nd May, 2007 on the theme ‘*Biodiversity and Climate Change*’:
   - 215 programmes were organized through eco clubs which include awareness lectures, discussions, seminars, debates, essay writing, quiz, painting and chart making competitions, rallies, plantation & cleanliness drives, exhibitions and educational visits.
   - 104 organizations participated in celebration of the event which includes 95 schools, 4 district administrations, 3 NGOs and a university and a college.

3. **Joint Project with UNESCO**

   A bilingual educational kit (English & Punjabi) was developed by PBB in collaboration with UNESCO and PSCST under the project ‘Capacity Building for promoting Environmental Sustainability through Biodiversity Conservation’. The project was carried out in the Shivalik area in Distt. Gurdaspur and Hoshiarpur, which is rich in biological resources. Field visits to 25 villages, 2 training programs and 25 camps were organized under the project in these districts. The kit includes a film on biodiversity, a booklet, a pamphlet and a poster.
The kit was released by Mr. Koichiro Matsuura, Director-General of UNESCO, Paris on 29th November, 2007, while he was on a visit to India. Ms. Minja Yang, Director, UNESCO, New Delhi office, Secretary, Ministry of Urban Development, Govt. of India and Senior Dignitaries were present at the occasion.

4. Constitution of Biodiversity Management Committees (BMCs)

31 BMCs were set up in biodiversity rich areas of Hoshiarpur and Gurdaspur districts of Punjab after organizing various meetings/camps and public contact programmes with local representatives, farmers and teachers. These committees would be further strengthened through capacity building to take up biodiversity conservation programmes.

5. Teacher Training programmes for Master Trainers

Two teacher training programmes were organized with the help of District Science Supervisors of Districts Gurdaspur and Hoshiarpur on 18th and 19th September, 2007, to provide basic information on biodiversity and apprise teachers of the provisions of Biological Diversity Act, so that they can further train BMCs within their village/town with respect to implement the Act at the field level and preparation of Peoples Biodiversity Registers (PBRs). The programme was attended by 25 teachers from district Gurdaspur and 40 teachers from district Hoshiarpur.

6. Study of biodiversity in native varieties of mango in district Hoshiarpur

A study was carried out to explore naturally occurring unrecorded genetic variability existing among local sucking type mango varieties/strains in District Hoshiarpur, Punjab. Thirty seven (37) varieties/landraces enjoying local patronage were recorded out of which 9 varieties are already being preserved at Fruit Research Station of Punjab Agricultural University, Ludhiana at Gangian. Twenty eight (28) varieties need conservation support. The varieties were evaluated on the basis of phenotypic (size, shape, colour, pulp colour, flavour, taste, time of maturity, fibre) and physico-chemical (total sugars, reducing sugars, acid contents, TSS, etc) attributes of fruit. Since very few trees of these varieties are available, special efforts for their conservation are required.
7. **Punjab State Biological Diversity Rules**

   The draft rules were submitted to Legal Remembrancer for vetting.

8. Proposal for creation of posts and separate budget head for PBB, as required under Biodiversity Act were submitted to the State Govt. The Govt. has sanctioned Rs. 4.00 lac under budget head Biodiversity Conservation in Punjab. The funds were released to PSCST (for PBB activities) on 31.03.2008.

9. Additional Director (Environment) who is presently functioning as Member Secretary of Punjab Biodiversity Board, participated in one international seminar organized at Ahmedabad and three state level seminars/workshops during the period. Scientist, PSCST and Project Associate, PSCST also participated in one event each.
1. **INTRODUCTION**

Biodiversity encompasses the variety of all life on earth. India is one of the 12 mega diversity countries of the world. With only 2.5% of the land area, it already accounts for 7.8% of the global recorded species. The country is also rich in traditional and indigenous knowledge. As per the International Convention on Biological Diversity, every country has a sovereign right on its biological resources and needs to regulate access to these resources through appropriate legal measures. Since Biodiversity is a multi-disciplinary area involving many stakeholders which include the Government, industry and the local communities, one of the major challenges lies in adopting instruments which not only help regulate access for commercial benefit but also ensure sustainable utilization of these resources with equitable benefit sharing.

In pursuance of the above, the Ministry of Environment & Forests, Govt. of India has promulgated the Biological Diversity Act, 2002 and prepared the Biological Diversity Rules, 2004. The Act is applicable throughout the country and envisages the following:

i) To conserve and promote sustainable utilization of the country’s biological resources.

ii) To regulate access to biological resources and associated traditional knowledge by both, foreigners and Indians (especially commercial bodies).

iii) To ensure equitable sharing of benefits arising out of commercial use of these resources amongst all stakeholders (especially local communities who are the custodians of these resources).

iv) To conserve and develop areas of importance from the standpoint of biological diversity by declaring them as biological diversity Heritage Sites.

v) To protect and rehabilitate threatened species.

vi) To involve institutions of state governments in implementing the Biological Diversity Act.

The Act provides for constitution of the following authorities:
i) National Biodiversity Authority (NBA) at the Central Government (u/s 8 of the Act). The authority has already been established with Head Office at Chennai.

ii) State Biodiversity Boards (SBBs) at the State Government level (u/s 22 of the Act).

iii) Biodiversity Management Committees (BMCs) at the local level (u/s 41 of the Act).

In pursuance of the above, the Punjab Government notified The Punjab Biodiversity Board (PBB) vide notification No. 2/41/2000-STE(1)/3949 dated 23.12.2004 as a statutory body to conserve biodiversity (including agricultural biodiversity), ensure its sustainable use, and fair and equitable sharing of the benefits arising out of such use. The Board has been re-notified after completion of three year tenure vide notification no. 2/4/2000/STE (1)2875 dated 8th August, 2007 (Annexure-I). Minister, Science, Technology & Environment, Govt. of Punjab is the chairman of the Board. The secretariat of the board lies in PSCST.

**Main Objectives of the Board**

The Board is envisaged to perform the following functions:

- Implement the provisions of the Biological Diversity Act, 2002, in the state.
- Promote biodiversity conservation activities, both, in agricultural & wild areas.
- Regulate the use of State’s biological resources by restricting their commercial utilization (except normally traded products), bio-surveys and bioprospecting.
- Facilitate setting up of Biodiversity Management Committees (BMCs) at village & town level and expert committees at state and district level to implement the Act.
- Levy collection fee through BMCs wherever these are harvested for industrial/commercial use.
- Ensure equitable sharing of benefits accruing out of such use as per guidelines provided by NBA.
- Bring to the notice of National Biodiversity Authority such commercial use of resources by foreigners & NRIs (including intellectual property generated out of these resources), if required.
- Promote the preparation of Peoples’ Biodiversity Registers to document available resources and protect traditional knowledge.
- Take up capacity building programs for masses, as well as, training of line departments of the state government.
2. ACTIVITIES CARRIED OUT BY PBB DURING 2007-08

The following activities were carried out:

I) 2nd Meeting of Punjab Biodiversity Board

The second meeting of the Punjab Biodiversity Board was held under the chairmanship of Sh. Bikram Singh Majithia, Science, Technology & Environment, Minister, Govt of Punjab on March 10, 2008. Shri A.S Chhatwal, Secretary, Science, Technology and Environment, Govt of Punjab; Dr. R. C Sobti, Vice Chancellor, Punjab University, Chandigarh; Sh. B. S Sidhu, Director, Agriculture; Sh. M.S Dhillion, Chief Conservator of Forests, Punjab; Dr. Anjana Pant, WWF-India; Dr. N.S Tiwana, Executive Director, PSCST, Dr. Neelima Jearth, Additional Director(Env), PSCST, Sh. Pawan Kumar, Deputy Director from Deptt. of Finance and Sh. Sumit Kumar, Deputy Director from Deptt. of Planning, Govt. of Punjab were also present.

The following issues were discussed:

• Joint Project with UNESCO on ‘Capacity Building for promoting Environmental Sustainability through Biodiversity Conservation’
• Training program for Master Trainers on “Conservation of Biodiversity in Punjab and Implementation of the Biological Diversity Act, 2002 in Punjab” in which > 200 teachers from all district were trained on issues related to biodiversity.
• Constitution of Biodiversity Management Committees (BMCs)
• Study of varieties of sucking mango in district Hoshiarpur
• Punjab State Biological Diversity Rules
• State Biodiversity Fund and Infrastructure of PBB
• Publications of Punjab Biodiversity Board

The Chairman pointed out that the capacity building and awareness needed to be taken upon priority in the state.

The minutes of meeting are placed at Annexure II.
II) Celebration of International Biodiversity Day, 2007

The theme for International Biodiversity Day, 2007, was ‘Biodiversity and Climate Change’. The following activities were organized in Punjab at the occasion:

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Activity/programme</th>
<th>No. of programmes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Awareness lectures, workshops/seminars/educational visits/discussions, exhibitions on various environmental issues.</td>
<td>60</td>
</tr>
<tr>
<td>2.</td>
<td>Competitions (Essay writing, Chart making, quiz, poetry recitation, debates, GK, songs, etc).</td>
<td>106</td>
</tr>
<tr>
<td>3.</td>
<td>Rallies to make people aware about our environment and biodiversity.</td>
<td>20</td>
</tr>
<tr>
<td>4.</td>
<td>Cleanliness drives.</td>
<td>16</td>
</tr>
<tr>
<td>5.</td>
<td>Socio-religious &amp; cultural programmes.</td>
<td>01</td>
</tr>
<tr>
<td>6.</td>
<td>Plantation of local tree species.</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Total programmes</td>
<td>215</td>
</tr>
</tbody>
</table>

Most of the programmes were organized jointly by PSCST and PBB through eco-clubs set up in schools under the National Green Corps project.

The total number of organizations which participated in the activities include:

- Schools : 95
- District level programmes : 04
- NGOs : 03
- University & College level programmes : 02

The activity is expected to increase the level of awareness and concern of biodiversity issues amongst children and general public.
III) Joint Project with UNESCO on ‘Capacity Building for promoting Environmental Sustainability through Biodiversity Conservation’

The Punjab Biodiversity Board got international exposure when the educational kit ‘Capacity Building for promoting Environmental Sustainability through Biodiversity Conservation’, developed by it, in collaboration with UNESCO, New Delhi and Punjab State Council for Science & Technology, was launched by Mr Koichiro Matsuura, Director-General of UNESCO on 29th November, 2007 at Delhi during his recent visit to India. Ms Minja Yang, Director UNESCO Office, New Delhi was also present.

The kit was selected by UNESCO as one of the two publications to be launched at the occasion of inauguration of land for UNESCO House at Delhi. Dr. Neelima Jerath, Additional Director-Environment, who coordinated the project, was invited to present the kit to the Director General. The kit is proposed to be used by UNESCO as a sample kit for capacity building on Biological Diversity in the South Asian region. It comprises the following:

- A film on Biodiversity ‘Securing our Future’ (directed by Mr. Gurmeet Sapal, M/s Explorers, Ghaziabad) highlighting dependence of village communities on their biological resources
- A book titled ‘Biological Diversity – The very stuff of life’
- A pamphlet on ‘Biological Diversity in Agricultural Fields’
- A poster
The kit has also been translated and published in Punjabi. It has been distributed to NGOs and Biodiversity Management Committees in the region.

The kit is expected to build capacities of local stakeholders (including Panchayats & other local bodies, ayurvedic doctors, practitioners of traditional medicine, local communities who depend on biological resources for their livelihoods, NGOs, school teachers & students) in biodiversity rich areas in Punjab. Field visits to 25 villages, 2 training programs and 25 camps were organized under the project in Hoshiarpur & Gurdaspur districts.
IV) Constitution of Biodiversity Management Committees (BMCs)

One of the major activities of Punjab Biodiversity Board is to facilitate the setting up of Biodiversity Management Committees (BMCs) at village and town level and train them for implementation of the Biological Diversity Act at field level, record local biological diversity within their respective village/town, take up initiatives for its conservation, understand the concept of collection fee for commercial utilization and prepare Peoples’ Biodiversity Registers (PBRs). It was decided that a few BMCs may be constituted in the Shivalik area in Punjab which is known to be biologically rich. Hence, Public contact programmes were carried out in Districts Gurdaspur & Hoshiarpur from 17-19 September, 2007 as under.

**District Gurdaspur:**
- Villages Garal, Kakrui and Dhar town on 17.9.07.
- Villages Keshopur, Dalla and Magar Mundian and the Keshopur wetland area on 18.9.07.

**District Hoshiarpur:**
- Villages Bhavnaur, Ramgarh, Kartoli, Chahera and Bhatoli in the Kandi area, villages Rehmapur, Atwarapur and Dholbaha in Takni Rehmapur Protected Area and Dholbaha wetland area on 19.9.07.

Meetings were held with local representatives to motivate them to constitute BMCs. The team comprised Dr. Neelima Jerath, Additional Director, Environment, Mr. Gurharminder Singh, Scientist-PSCST, Dr. M. Sharma, Biodiversity Expert & Retd. Dean, Punjabi University, Patiala, local DFOs and Range Officers (Wildlife), social motivators identified by Department of Forests & Wildlife and representatives of local NGOs.

The visits were followed by three major public camps as under:

i) Public camp at Keshopur in collaboration with Forest Deptt. on 5.9.07 in which about 100 people participated including teachers, Panchayat members, representatives from line departments, local hakims & vaids, fishermen and other stakeholders.
ii) Public camp at Dhar in collaboration with NGO (Institute of Ecology and Environment, Pathankot) on 6.9.07 in which about 100 people including teachers, students and Panchayat members, representatives from line departments, ayurvedic doctors, hakims and vaids and other stakeholders participated.

iii) Public camp at Bhavnaur with NGO (Unnati Cooperative Society, Talwara) on 7.9.07 in which about 30 people from proposed BMCs of 6 villages participated.

iv) Public camps by trained school teachers (7 camps in district Gurdaspur and 15 camps in district Hoshiarpur).

These camps were followed by separate meetings at 10 villages, where constitution of BMCs were discussed and queries were responded.
As a result, 31 BMCs have been set up (13 BMCs in district Gurdaspur and 18 BMCs in District Hoshiarpur) as under:

**District Gurdaspur:** Mamoon, Karoli, Durang Khad, Kakruhi, Keshupur Miani, Garl, Dala, Bhanguri, Balapindi, Chakkar, Chhatwal (Dhar), Dhar Kalan

**District Hoshiarpur:** Reru Patti, Bhambotar, Bisso Chak, Bhavnaur, Kamahi Devi, Repur, Namdi, Nauranpur, Chamuhi, Heer-Beh, Swar, Ghagwal, Sansarpur, Ramgarh-Kartoli, Bhatoli, Charera, Bhavnour, Attwarapur

The detailed list is enclosed at Annexure III.
V) Teacher training program for Master Trainers

Since teachers would play a key role in mobilizing constitution of BMCs, it was decided that about 20-30 teachers in each district be trained as master trainers. These teachers could subsequently organize village level camps and participate in training of their peer group, as well as students and youth in the area. Two teacher training programs were organized with the help of District Science Supervisors of Districts Gurdaspur and Hoshiarpur on 18th and 19th September, 2007.

**District Gurdaspur:** 18.9.2007 at DAV Sr. Sec. School, Gurdaspur.
23 teachers from 19 schools located in Keshopur Maini wetland area and Dhar-Dunera area were provided basic information on local biodiversity issues (by Dr. M. Sharma, Biodiversity Expert and retired Dean, Punjabi University, Patiala & Mr. Gurharminder Singh, Scientist, PSCST) and on Biological Diversity Act and constitution of BMCs (by Dr. Neelima Jerath, Additional Director, PSCST). Project Associate (Biodiversity), PSCST and District Science Supervisor also participated.

**District Hoshiarpur:** 19.9.2007 at Govt. Model High School, Talwara.
40 teachers from 28 schools located in the Kandi area and around Takhni Rehmapur Wildlife Sanctuary were provided basic information on local biodiversity issues by Scientist, PSCST and on Biological Diversity Act and
constitution of BMCs by Additional Director (Env.), PSCST. District Science Supervisor, District ITC Officer and Project Associate, PSCST also participated.

The following literature was provided to the trainees:

- Biodiversity – the web of life (Punjabi version), developed by Punjab Biodiversity Board (PBB).
- Copy of Biological Diversity Act, 2002.
- Poster on biodiversity (in Punjabi) published by PBB.
- Pamphlet on biodiversity (in Punjabi) published by PBB.

The list of trainees is placed at Annexure-IV.
VI) Study of varieties of sucking mango in district Hoshiarpur

In the first meeting of the ‘Sub committee to identify Heritage Sites in Punjab’ held on 11/12/2006, the issue of identifying heritage sites outside Protected Area Network (PAN) was discussed. PBB received information from the then DFO, Hoshiarpur, NGOs and teachers of district Hoshiarpur during various field camps and training programmes that one such potential site existed in this district where several varieties of desi sucking mango had been preserved through the initiative of an individual. The site, a mango orchard was called “Inami Baag’ located in about 10 acres area in village Bassi Umar Khan. This orchard had about 200 mango trees of several desi varieties, some of which were not available elsewhere in wild or in cultivated areas.

PBB, therefore, contacted Fruit Research Station of Punjab Agricultural University at village Gangian and a joint survey was taken up in villages Bassi Umar khan, Gangian, Ghassipur, Daffar, Bunga and surrounding areas. Mango samples from more than 100 apparently phenotypically different mango varieties/landraces, enjoying local popularity for their high performance and good quality fruit as per the information provided by Department of Forests and Wildlife (Hoshiarpur), Deptt. of Horticulture (Punjab) and feed back from local villagers etc., were selected during harvesting period in May - July, 2007 and handed over to the Fruit Research Station for physico-chemical and morphological analysis.

Survey being conducted at village Daffar  Some nature mango varieties
The analysis has been completed and 37 varieties of desi sucking mango (which are distinct and statistically different) have been identified from the region. Out of these 9 varieties have already been conserved at Fruit Research Station, Gangian by PAU and 28 varieties are new which need to be conserved. The varieties were evaluated on the basis of phenotypic (size, shape, colour, pulp colour, flavour, taste, time of maturity, fibre) and physico-chemical attributes of fruit. TSS, acidity, reducing and non reducing sugars are important characters which determine suitability of fruit for pickling/canning/juices.
VII) Punjab State Biological Diversity Rules

The draft rules were discussed. These have been submitted to the Legal Remembrancer for vetting.

VIII. Creation of State Biodiversity Fund and Posts in PBB

Proposal for creation of State Biodiversity Fund as required u/s 31 & 32 of the Biological Diversity Act, 2002 was submitted to the State Govt. Rs. 4.00 lac was sanctioned under the head Biodiversity Conservation in Punjab under operation by PSCST. The funds were released on 31.03.2008.

Further, proposal for creation of the following posts was submitted to the State Govt.:

1. Member Secretary - 1
2. Senior Scientific Officer - 1
3. Steno-typist-cum-Computer Operator - 1
4. Driver - 1

The same are yet to be sanctioned.

IX. Participation in Lectures/Conferences

- Dr. Neelima Jerath, AD (Env) delivered a lecture on “Status of Biodiversity” in the State’ Children Science Congress-2007 workshop organized by PSCST on 24.7.2007 at Chandigarh.

- AD( Env) participated in Workshop on ‘Biosphere Reserves & World Heritage Sites: Learning Laboratories for Sustainable Development’ organized by ICEE, Ahmedabad on 26.11.2007 during the International Workshop on Environment Education.

- AD(Env) delivered a special lecture on “Biological Diversity Act and constitution of BMCs” in a Workshop on ‘Biodiversity Conservation & People’s Concerns’, organized by Kheti Virasat Mission at Village Talewal, district Barnala on 19.1.2008. Scientist, PSCST also participated.

- AD (Env) and Scientist, PSCST participated in Two day seminar on ‘Global Warming and Climatic Change’, organized by CRRID at Chandigarh on 8th and 9th February 2008.

- Project Associate, PSCST delivered a lecture on biodiversity at Van Chetna Kendra, Ludhiana on 8th March, 2008.
## Audited Statement of Accounts of Biodiversity Board for the year 2007-08

<table>
<thead>
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<th>Receipt (Rs.)</th>
<th>Particulars</th>
<th>Payment</th>
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<tbody>
<tr>
<td>4,00,000</td>
<td>Infrastructural facilities, meeting expenses, travel &amp; overheads of PBB</td>
<td>40,677.00</td>
</tr>
<tr>
<td>(received on 31.03.2008)</td>
<td>Balance C/F</td>
<td>3,59,323</td>
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<td><strong>Total</strong></td>
<td><strong>4,00,000</strong></td>
<td><strong>Total</strong></td>
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Note: During the year 2007-08 the Board carried out its activities under PSCST and support from UNESCO – Details of funds made available for carrying out its activities are as under:

<table>
<thead>
<tr>
<th>Receipt (Rs.)</th>
<th>Particulars</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>o 2,00,000</td>
<td>Printing &amp; stationary of Board literature</td>
<td>2,78,782.00</td>
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<tr>
<td>from Govt. of Punjab</td>
<td>Field travels &amp; camps in biodiversity rich areas</td>
<td>38,517.00</td>
</tr>
<tr>
<td>o 1,73,546</td>
<td>Salary of Project Associate (Biodiversity)</td>
<td>67,216.00</td>
</tr>
<tr>
<td>from UNESCO</td>
<td>Office Expenses, trainings, meetings, telephone, postage, etc.</td>
<td>43,196.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,73,546</strong></td>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Excess expenditure over receipt  Rs. 54,165.00*

* UNESCO has released first instalment of Rs. 47,700/- on 08.04.2008.
  o Balance excess expenditure of Rs. 6,465/- will be adjusted in 2008-09 funds.

Sd/-
Additional Director
(Environment)

Sd/-
Manager (Finance & Accounts)