

PUNJAB BIODIVERSITY BOARD



Agenda Notes

6th Meeting of Punjab Biodiversity Board

Secretariat:

Punjab State Council for Science & Technology
MGSIPA Complex, Sector-26, Chandigarh – 160 019

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Date : 22.05.2014

Time : 12.30 PM

Venue : Conference Room, Punjab State Council for Science & Technology,
2nd Floor, MGSIPA Complex, Sector-26, Chandigarh

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AGENDA

The 5th meeting of Punjab Biodiversity Board was held on 24.10.2011 under the Chairmanship of Hon'ble Chief Minister, Punjab.

Item No. 6.1: Confirmation of Minutes of 5th Meeting of Punjab Biodiversity Board held on 24/10/2011.

The Minutes of the meeting were circulated to all the members. No comments/suggestions have been received. The minutes are placed at (**Annexure-I Pg.37**). The same may kindly be confirmed.

Item No. 6.2: Follow up action on the Minutes of the 5th Meeting of Punjab Biodiversity Board held on 24/10/2011.

The follow-up actions on the minutes of the 5th meeting are placed at (**Annexure-II Pg.41**) for information of the members of Punjab Biodiversity Board.

Item No.6.3 Agenda items for Consideration and Approval

Item No.6.3.1: Capacity Building of District level Biodiversity Management Committees (BMCs) and Technical Supporting Groups (TSGs) & preparation of People's Biodiversity Registers (PBRs)

Punjab Biodiversity Board (PBB) has constituted District level Biodiversity Management Committees (BMCs) & Technical Support Groups (TSGs) in accordance with Section 41 of Biological Diversity Act, 2002 in all 22 Districts of the state under the chairmanship of respective Additional Deputy Commissioners (D). Rs.8.00 lacs were provided by National Biodiversity Authority (NBA) for the purpose as well as for initiating preparation of Peoples Biodiversity Registers (PBRs). The status of funds released and physical progress is given in **Table-1**.

Out of 22 Districts, 20 Districts have conducted training programmes for BMC and TSG members and only 2 districts (Ferozepur and SBS Nagar) are yet to conduct capacity building activities. Further, 14 districts have initiated action for preparation of PBRs whereas 10 districts have yet to initiate this activity. Furthermore, inspite of repeated reminders, UCs are yet to be submitted by most the districts. Whereas district Roopnagar and Sangrur have submitted the full UC, district Ludhiana, Tarn Taran, Bathinda, Mukatsar Sahib, Faridkot and Patiala have submitted partial UCs. Out of these, districts Fazilka and Pathankot have made considerable physical progress w.r.t PBR preparation but UCs have not been submitted. The detailed status is as under:

- Roopnagar & Sangrur : Funds spent, UC submitted
- Ludhiana : No activity carried out. Out of Rs.60,000/-, Rs.40,000/- has been refunded vide cheque dated 9.01.2014 vide letter dated 3.02.2014. Further, District Administration has informed that Rs.10,000/- was fraudulently withdrawn by an employee and the district is not in a position to refund the same to the Board as an investigation is still being carried out. With reference to balance of Rs.10,000/- the district proposes to refund the same to PBB.
- Tarn Taran, Bathinda, : Partial UCs submitted as per Table-1. The
Mukatsar Sahib, matter was followed up vide letters dated
Faridkot and Patiala 10.12.2013 from SSTE and Letters dated
19.03.2012, 21.01.2013 25.07.2013 &
14.11.2013 from MS/PBB. However, the matter
needs to be followed up again.

- District Ferozepur, Fategarh Sahib, Kapurthala, SAS Nagar, Hoshiarpur, Jalandhar, Amritsar, Mansa, Barnala, SBS Nagar, Gurdaspur, Moga, Fazilika and Pathankot.

In spite of letter dated 10.12.2013 from SSTE and Letters dated 19.03.2012, 21.01.2013, 25.07.2013 & 14.11.13 from MS/PBB and frequent telephonic reminders, no UC has been submitted. The matter needs to be followed up.

It is proposed that an advisory be issued through the office of Hon'ble Chief Minister (Chairman of PBB) to all districts to undertake the training activities of District BMCs/expedite the preparation of district level draft PBRs by involving local experts and utilize the grants released by PBB at the earliest to facilitate submission of consolidated report to MoEF and NBA so that additional funds can be sought for further activities.

The Board members are further informed that NBA has issued guidelines for PBR preparation in 2012-2013. Accordingly, NBA, GoI during the financial year 2012-2013 and 2013-2014 has sanctioned Rs.26.45 lacs for preparation of PBRs as per its approved guidelines in 11 districts (i.e. Gurdaspur, Taran Tarn, Pathankot, Ludhiana, Bathinda, SBS Nagar, SAS Nagar, Amritsar/Ferozepur, Hoshiarpur, Roopnagar, Barnala) and one village (Cholti Kheri, Fatehgarh Sahib). Out of these, PBR preparation activity has been initiated in 8 districts by involving expert agencies as below:

a) Funds amounting Rs.11.10 lacs have been sanctioned to Foundation of Revitalization of Local Health Traditions (FRLHT), Bangalore for undertaking PBR preparation activity in six districts (Hoshiarpur, SBS Nagar, Bathinda, Ludhiana, Amritsar & Barnala) and Rs. 4.44 lacs have been released as 1st Installment.

b) Funds amounting Rs.2.20 lacs have been sanctioned to World Wide Fund for Nature (WWF), New Delhi for two district PBRs i.e. Roopnagar & Gurdaspur and Rs.1.76 lacs have been released as 1st Installment.

These agencies will conduct PRA exercise, meetings, skill development activities, detailed survey and collection of primary data by involving taxonomists during financial year 2014-15. The staff of the Punjab Biodiversity Board would provide necessary technical support for PBR preparation.

The Board may:

- Advise w.r.t realization of UCs from districts as well as on fraudulent withdrawal of Rs.10,000/- by an employee of District Administration, Ludhiana.
- Ratify preparation of PBRs through FRLHT and WWF (expert agencies).

For approval please.

Table 1: Physical progress and status of funds of District BMCs (as on 05.05.2014)

| Sr. No. | Name of Distt. | Amount released (in Rs) for awareness activities (FY 2008-09) | Amt. released (in Rs) for Constitution of BMCs and joint Training Program of BMCs (FY 2009-010) | Amt. released (in Rs) for PBR preparation (FY 2009-13) | Total funds released till date (in Rs) | Funds utilization status (in Rs) | Physical progress In continuation from previous page | |
|---------|-----------------|--|--|---|--|--|---|---|
| | | | | | | | BMC constituted on | Activities |
| 1. | Ludhiana | 10,000 | 20,000 | 30,000 | 60,000 | 40,000 Refunded UC for Rs.20,000 yet to be submitted | 31.03.2010 | -Training organized on 27.4.2010 -Meeting organized on 30.03.2012 |
| 2. | Tarn Taran | 10,000 | 20,000 | 30,000 | 60,000 | 30,000 UC submitted UC for balance Rs.30,000 yet to be submitted | 01.04.2010 | -Training organized on 24.8.2011 PBR: First draft is under preparation |
| 3. | Ferozepur | 10,000 | 20,000 | 30,000 | 60,000 | - | 22.02.2010 | -- |
| 4. | Fatehgarh Sahib | 10,000 | 20,000 | 30,000 | 60,000 | - | 15.02.2010 | -Training organized on 30.8.2011 -Meeting organized on 15.5.2012 -Village BMC constituted in Cholti Kheri to facilitate notification of identified BHS (Kaya Kalp Vriksh) |
| 5. | Kapurthala | 10,000 | 20,000 | 30,000 | 60,000 | - | 31.03.2010 | - Training program organized on 14.01.2014 PBR: First draft prepared |
| 6. | SAS Nagar | 10,000 | 20,000 | 30,000 | 60,000 | - | 12.04.2010 | - Training organized on 11.4.2012 |
| 7. | Bathinda | 10,000 | 20,000 | 30,000 | 60,000 | 10,000 UC submitted UC for balance Rs.50,000 yet to be submitted | 31.03.2010 | - Training organized on 27.5.2010 - Meeting organized on 06.04.2013 PBR: First draft prepared & validated. |
| 8. | Hoshiarpur | 10,000 | 20,000 (including village BMCs) | 30,000 | 60,000 | - | 30.03.2010 | - Training organized on 26.5.2010 - Meeting organized on 28.12.2011 PBR: First draft prepared. The same is being validated |

Table 1: Physical progress and status of funds of District BMCs (as on 05.05.2014)

| Sr. No. | Name of Distt. | Amount released (in Rs) for awareness activities (FY 2008-09) | Amt. released (in Rs) for Constitution of BMCs and joint Training Program of BMCs (FY 2009-010) | Amt. released (in Rs) for PBR preparation (FY 2009-13) | Total funds released till date (in Rs) | Funds utilization status (in Rs) | Physical progress In continuation from previous page | |
|---------|----------------|--|--|---|--|---|---|--|
| | | | | | | | BMC constituted on | Activities |
| 9. | Jalandhar | 10,000 | To be organized jointly with Kapurthala or expenditure to be borne by Distt. Administration | 30,000 | 40,000 | - | 19.05.2010 | - Training organized on 16.08.2013 - PBR : First draft is under preparation |
| 10. | Amritsar | 10,000 | To be organized jointly with Tarn Taran or expenditure to be borne by Distt. Administration | 30,000 | 40,000 | - | 07.01.2011 | -Training organized on 25.10.2011 |
| 11. | Muktsar | 10,000 | To be organized jointly with Bathinda or expenditure to be borne by Distt. Administration | 30,000 | 40,000 | 6,240 UC submitted UC for balance Rs.33,760 yet to be submitted | 17.02.2011 | - Training organized on 13.08.2013 - PBR : First draft is under preparation |
| 12. | Mansa | 10,000 | To be organized jointly with Bathinda or expenditure to be borne by Distt. Administration | 30,000 | 40,000 | - | 09.03.2011 | - Training organized on 13.08.2013 - Meeting organized on 11.02.2014 - PBR : First draft prepared & validated |

Table 1: Physical progress and status of funds of District BMCs (as on 05.05.2014)

| Sr. No. | Name of Distt. | Amount released (in Rs) for awareness activities (FY 2008-09) | Amt. released (in Rs) for Constitution of BMCs and joint Training Program of BMCs (FY 2009-10) | Amt. released (in Rs) for PBR preparation (FY 2009-13) | Total funds released till date (in Rs) | Funds utilization status (in Rs) | Physical progress In continuation from previous page | |
|---------|----------------|--|--|---|--|--|---|--|
| | | | | | | | BMC constituted on | Activities |
| 13. | Barnala | 10,000 | To be organized jointly with Ludhiana or expenditure to be borne by Distt. Administration | 30,000 | 40,000 | - | 15.03.2011 | - Training organized on 9.1.2013. - PBR: First draft is under preparation |
| 14. | Sangrur | 10,000 | To be organized jointly with Fatehgarh Sahib or expenditure to be borne by Distt. Administration | 30,000 | 40,000 | 40,000 UC submitted | 16.03.2011 | - Training organized on 10.8.2011 - Meeting organized on 09.01.2014 - PBR: First draft prepared |
| 15. | SBS Nagar | 10,000 | To be organized jointly with SAS Nagar or expenditure to be borne by Distt. Administration | 30,000 | 40,000 | - | 24.03.2011 | - |
| 16. | Faridkot | 10,000 | To be organized jointly with Ferozepur or expenditure to be borne by Distt. Administration | 30,000 | 40,000 | 30,000 UC submitted UC for balance Rs.10,000 yet to be submitted | 25.3.2011 | - Training organized on 14.06.2013 - PBR: First draft prepared & validated. |

Table 1: Physical progress and status of funds of District BMCs (as on 05.05.2014)

| Sr. No. | Name of Distt. | Amount released (in Rs) for awareness activities (FY 2008-09) | Amt. released (in Rs) for Constitution of BMCs and joint Training Program of BMCs (FY 2009-010) | Amt. released (in Rs) for PBR preparation (FY 2009-13) | Total funds released till date (in Rs) | Funds utilization status (in Rs) | Physical progress In continuation from previous page | |
|---------|----------------|--|--|---|--|---|---|--|
| | | | | | | | BMC constituted on | Activities |
| 17. | Roopnagar | 10,000 | To be organized jointly with SAS Nagar or expenditure to be borne by Distt. Administration | 30,000 | 40,000 | 40,000 UC submitted | 10.04.2012 | - Training organized on 4.5.2011 - Meetings organized on 27.03.2012, 25.4.2012, 22.5.2012, 22.6.2012 & 5.2.2013 - PBR: First draft prepared and validated |
| 18. | Gurdaspur | 10,000 | To be organized jointly with Tarn Taran or expenditure to be borne by Distt. Administration | 30,000 | 40,000 | - | 18.03.2010 | - Training organized on 05.09.2013 - PBR: First draft is under preparation |
| 19. | Moga | 10,000 | To be organized jointly with Ludhiana or expenditure to be borne by Distt. Administration | 30,000 | 40,000 | - | 30.03.2011 | - Training organized on 30.07.2013 |
| 20. | Patiala | 10,000 | To be organized jointly with Fatehgarh Sahib or expenditure to be borne by Distt. Administration | 30,000 | 40,000 | 5,000 UC submitted UC for balance Rs.35,000 yet to be submitted | 22.04.2010 | - Training organized on 01.03.2012 |

Table 1: Physical progress and status of funds of District BMCs (as on 05.05.2014)

| Sr. No. | Name of Distt. | Amount released (in Rs) for awareness activities (FY 2008-09) | Amt. released (in Rs) for Constitution of BMCs and joint Training Program of BMCs (FY 2009-10) | Amt. released (in Rs) for PBR preparation (FY 2009-13) | Total funds released till date (in Rs) | Funds utilization status (in Rs) | Physical progress In continuation from previous page | |
|---------|--------------------|--|---|---|--|----------------------------------|---|---|
| | | | | | | | BMC constituted on | Activities |
| 21 | Fazilka* | - | To be organized jointly with Ferozpur or expenditure to be borne by Distt. Administration | 20,000 | 20,000 | - | 27.04.2012 | - Training organized on 06.08.2013 PBR: First draft prepared & validated |
| 22 | Pathankot* | - | To be organized jointly with Hoshiarpur or expenditure to be borne by Distt. Administration | 20,000 | 20,000 | - | 04.04.2012 | - Training organized on 19.08.2013. PBR: First draft prepared & validated |
| | Grand Total | 2,00,000/- | | 8,00,000/- | | | | |

*District not formed in the year 2008-09

Item No.6.3.2 Strengthening of PBB and Restructuring

Punjab Biodiversity Board was established in December, 2004 vide Notification No. 2/41/2000-STE(1)/3942 dated 23.12.2004 as a statutory body in accordance with the Biological Diversity Act, 2002 of Govt. of India and re-notified from time to time. The Board is presently undertaking various activities as envisaged by BDA, 2002 with its meager staff and is being serviced by Punjab State Council for Science & Technology especially for administrative and financial matters. The Board is being provided financial support to the tune of Rs.9 to Rs.10 Lacs annually by State Govt. under Non Plan Budget for salary of manpower and to carry out various activities.

The envisaged and present staff strength of the Board is as under:-

| Sanctioned Post | Status |
|---|--|
| Member Secretary (37400-67000+GP10000) | Post approved in 2 nd meeting, but no funds provided by the state government. Presently Executive Director, PSCST is working as Member Secretary, Punjab Biodiversity Board also. |
| Sr. Scientific Officer (15600-39100+GP6600) | Post approved in 2 nd meeting. However as advised by FD, a Scientist at consolidated salary of ₹20,000/-pm+20% HRA has been recruited on contract (outsource basis) |
| Computer Operator-cum-Steno-typist (5910-20200+GP2000) | Post approved in 2 nd meeting, recruited on consolidated salary of ₹10,000/-pm+20% HRA on contract (outsource basis) |
| Driver (5910-20200+GP2000) | Post approved in 2 nd meeting, recruited on consolidated salary of ₹7,000/- pm+ 20% HRA on contract. |

Note: In addition, SSO (Env.), PSCST is providing technical assistance to the Board in its activities, in addition to his own duties. All administrative and financial services are presently provided by Punjab State Council for Science & Technology as the Board has no separate office.

The major responsibilities/ activities of the Board include:-

| Sr. No. | Responsibilities | Activities /Status |
|---------|--|---|
| 1. | Setting up BMCs at District level (22), block level (141), Village level and town level u/s 41 of the Act. | Presently, 22 district level BMCs and 32 village BMCs have been set up |
| 2. | Taking up large scale capacity building exercises for district, block and village/town level BMCs especially with respect to conservation and sustainable use of biodiversity and equitable benefit sharing issues | Capacity Building activities especially celebration of IBD being taken up as per available funds (from GoP and NBA). Biodiversity Festival, 2012 organized in collaboration with Education Department |
| 3. | Levy of collection fee by BMCs as per section 41 (3) of the Act. | Action yet to be initiated, pending notification of Biodiversity Rules. |

| | | |
|-----|--|--|
| 4. | Promote preparation of PBRs (which would include inventorization of biological resources (in both agricultural fields as well as wild) occurring within the jurisdiction of a BMC and associated traditional knowledge) and building capacity on this aspect (initiated in 3 districts). | PBR preparation initiated in eleven districts i.e. Roopnagar, Hoshiarpur, Barnala, Tarntaran, Bathinda, Jalandhar, Muktsar, Faridkot, Gurdaspur, Fazilka and Pathankot |
| 5. | Regulate access by Indian companies and/or individuals for commercial utilization or bio-survey and bio-utilization for accessing of biological resources as per Section 7 and Section 23(b) of the Act and assist NBA w.r.t section 3, 4 and 6 of the Act. | Regulation of Indian companies is pending notification of the rules. W.r.t section 3, 4 & 6 of the Act, information is provided to NBA from time to time. |
| 6. | Identify Biodiversity Heritage Sites in the State & facilitate their notification by the State Govt. | Three sites identified. Notification pending. |
| 7. | Identify rare and endangered species & facilitate their notification by the Central Govt. | The list has been validated from the concerned Departments as desired by MoEF, Gol and submitted for further necessary action at Gol level. |
| 8. | Promote conservation of agricultural biodiversity and domesticated animal breeds | Information of native domesticated breeds compiled from Department of Animal Husbandry and NBAGR. Regarding Agricultural biodiversity, information on pre and post green revolution varieties has been compiled from PAU. Further, PBB has undertaken a study on elite mango varieties in Inami Baag, distt. Hoshiarpur with PAU. A research project is also under preparation and a paper has been published. |
| 9. | Take up projects and programmes for conservation of flora and fauna in wild | Information has been compiled by PSCST presently. The Board has limited staff. Projects would be taken up as staff increases. |
| 10. | Advise the State Govt. on issues related to biodiversity conservation by supplementing efforts of State Departments of Forest & Wildlife, Agriculture, Horticulture, Animal Husbandry, Fisheries, etc. | <ul style="list-style-type: none"> - SBSAP has been prepared - Draft Biodiversity Rules have been formulated - Biodiversity Act has been printed in regional language (Punjabi) |
| 11. | Undertake/ promote studies on biodiversity | <ul style="list-style-type: none"> - Two major studies as 'Biodiversity in the Shivaliks'(taken up by PSCST) and 'Inventorising industries involved in utilizing bioresources' jointly by PSCST & PBB undertaken. Besides, study on Germplasm of Mango in Inami Baag, Distt. Hoshiarpur undertaken in collaboration with Fruit Research Station Gangian. - A brief study on Chatpatt Bani –a socially protected area has also been undertaken. |

The activities of PBB have increased manifold during the past three/four years. However, funds and infrastructure have not developed commensurately. Field level activities such as constitution of village level BMC & their capacity building, preparation of District/Village Level PBRs, Notification of BHS, etc., need to be strengthened. This is possible only if Board is strengthened with technical manpower and finances. Presently the Board does not even have a separate office.

The matter was taken up in the 5th meeting of the Board wherein members agreed that PBB needed to be strengthened by providing additional staff and funds. Also, core staff needed to be hired in scale and budget under non plan needed to be appropriately enhanced. A proposal was submitted to AD in June 2012 but no decision could be taken. In case the Act is to be implemented in earnestness in the state, provisions of funds in the state Non Plan budget need to be enhanced.

Details of additional posts immediately required along with their justification are provided in **Annexure-III (Pg.44)**. This will involve total expenditure of Rs.40 lac/ annum.

Meanwhile the issue of staff crunch has been repeatedly raised in meetings of NBA. The NBA has now sanctioned the following staff and funds:-

| Sr. No. | Post | Funds sanctioned (Rs. in lacs) |
|----------------|--|---------------------------------------|
| 1. | Technical Officers-2 On consolidated salary @ Rs.14,000/-+ HRA (20%)+EPF (12%) | 4.44 |
| 2. | Finance & Administration Asstt.-1 On consolidated salary @ Rs.12,000/-+ HRA (20%)+EPF (12%) | 1.90 |
| 3. | Asstt. Manager (F & Admn.)- On honorarium as per state Govt. rules as additional charge to an existing official of PSCST which is servicing the Board (as approved in the 4 th meeting) | 0.32 |
| | Annual salaries of manpower (1+2) –A | 6.66 |
| | Office expenses & contingencies - B | 1.34 |
| | Grand Total (A+B) | 8.00 lacs |

Technical Officers (2) and Asstt. (F&A) had been recruited on the above mentioned salaries against the funds provided by NBA. However, none of the Technical Officer joined the Board and the post needs to be re-advertized. Further, even these posts are at junior

level. The matter may be discussed and in order to strengthen the Board, State Govt. be pursued to provide funds for posts of Member Secretary, Senior Scientific Officer and Steno in regular scale under Non Plan Budget to expedite the implementation of BDA, 2002 in the state. Gradually staff strength can be increased. SSTE may also like to take up the matter with NBA.

Further, for the existing staff, Board may consider enhancement @3% per annum (provided their performance is rated as 'very good' or above for two consecutive years). This will have an additional financial implication of Rs.30,000/- per annum only.

For consideration please.

Item No.6.3.3 Provision of Office space for Punjab Biodiversity Board

The Punjab Biodiversity Board is presently functioning from the office of Punjab State Council for Science & Technology (PSCST) and is serviced by PSCST. Activities and manpower of the board has gradually increased due to enhanced financial support of NBA under various projects. During FY 2012-13 to 2013-14, NBA had sanctioned 4 contractual posts (2 Technical Officers, 1 Biodiversity Communicator & 1 Assistant Finance & Administration) on consolidated salaries under project mode on yearly basis to carry out the activities of Board which in addition to the 3 posts sanctioned by the State Government (1 Scientist, 1 Steno-typist & 1 Driver on contract and outsource basis). Accordingly, the present total staff strength is 7 personnel.

PBB is facing a severe shortage of office space as a small room in the basement of PSCST office, having an area of 108 sq. feet (12' X9') has been allocated to PBB. The area is insufficient to make seating arrangement of PBB staff and is also hindering the routine office work. The shortage of area is also a constraint for PBB to purchase its own office infrastructure such as furniture, computers, file cabinets, photocopier machine, telephone, fax, etc. Hence, PBB needs to be provided with adequate and independent office space with minimum area of 600 sq. feet to ensure efficient office functioning and to establish its own identity, it being a statutory body.

In view of the above, it is proposed that requisite office space may be provided to Board either free of cost by the State Govt. at an appropriate place/building or provision of additional funds of Rs. 5 Lacs/annum be made in the non plan budget of the board for hiring of office space of 600 sq. ft.

The Board may authorize SSTE to take up matter with Govt./concerned agencies.

For consideration please.

Item No.6.3.4 Project Proposal on “Biodiversity Resource Centre on Wheels”

Biodiversity encompasses diversity at ecosystem, species and genetic level of flora and fauna. It is an important resource with consumptive use value (food, firewood, fodder, meat, local medicines etc.), productive use value (commercial products, national food security system, tourism) and non-consumptive use value (ecological web, carbon fixation, soil protection, climate regulation, maintenance of water cycle, etc.). However, its benefits to society and economy are generally underestimated. The economics of ecosystems needs to be well understood. Thus, there is an urgent need to take up extensive capacity building exercises to raise public understanding on the importance of biodiversity and promote its sustainable utilization. All sections of society and stakeholders need to be provided information on Biological Diversity Act & Rules. This, however, is a monumental task.

Punjab Biodiversity Board has developed a proposal for ‘Biodiversity Resource Centre on Wheels` to undertake outreach activities in all parts of state (both urban and rural areas across the state with special focus on Shivaliks) in a cost effective and efficient manner. The Centre on Wheels is proposed to be developed as a mobile exhibition mounted on a mini bus/ SUV and will be extensively used for conducting on-site biodiversity educational programmes for BMC/TSG members, college & NGC eco- club school students, farming communities, NGOs and general public through different approaches of learning by panel/poster displays, interactive models, films, slide shows, exhibitions, games, group discussions, and by dissemination of communication material like pamphlets, brochures, booklets and postcards, etc.

PBB has prepared a proposal amounting Rs 27 Lacs and approached MoEF, Gol and NBA for financial support. The proposal is placed at **Annexure-IV (Pg.47)**. NBA letter No.NBA/10/04/Pro/13-14/1877 dated 12th July, 2013 has communicated that NBA’s Project Scrutiny Committee has in principle agreed to sanction Rs.23 lacs to Punjab Biodiversity Board (PBB) for the same subject to certain terms & conditions. NBA had sought consent/clarifications w.r.t approval of State Govt. for purchase of vehicle, sharing of vehicle with neighbouring States for creating awareness and use of facility by NBA wherever required which was submitted. However, funds are yet to be released in view of Central Govt. circular for austerity measures w.r.t purchase of new vehicles. It has been clarified to NBA that this vehicle will not be used as general office vehicle but the body will be got modified for use as a mobile exhibition. The matter w.r.t purchase of vehicle as and when funds are received from NBA may please be approved.

Item No.6.3.5 Proposal on declaration of Biodiversity Heritage Site: Inami Baag and preparation of collaborative research project with PAU Ludhiana on “Establishment of gene bank at Fruit Research Centre at Gangian” for DST funding

Board members were informed in the 5th meeting that Inami Baag in village Bassi Umar Khan, Block-Bhunga, District Hoshiarpur could be notified as a Biodiversity Heritage Site of Punjab. Detailed field assessment and physico-chemical studies had been conducted by PBB in collaboration with Punjab Agricultural University, Ludhiana. A comprehensive budget proposal amounting to Rs.200 lacs on declaration of Inami Baag as Biodiversity Heritage Site, as approved by Board members, was submitted to state Govt. (under Plan Scheme) and also to NBA for release of funds. The State Govt. vide memo no. 2/2/2011-STE(1)/183 dated 24.01.2012 had allocated and sanctioned Rs. 100 Lacs in the financial year 2011-12 under plan scheme EE6 Titled “Conservation of Biodiversity and declaration of BHS”. However, no funds were released. Further, PBB had submitted proposals amounting Rs.40.00 lacs and Rs. 180.00 lacs as per approved outlay of Plan Scheme EE6 during the financial year 2012-13 & 2013-14 respectively. However, till date no funds have been released for the implementation of the scheme.

The matter regarding shifting of germ plasm of elite varieties of Mango for hybridization and breeding programmes at Fruit Research Station of PAU, Gangian, has also been discussed with Director Research, PAU Ludhiana. It was decided that a collaborative research project on “Establishment of Mango Germ Plasm/ Gene Bank at FRS, Gangian” for availing financial assistance from GoI would be submitted by PAU. The same is awaited. Even though PAU is focusing on table varieties, the State needs to preserve its natural tapka desi varieties. It is now proposed to approach IARI for the purpose.

Further, it is also informed that a research paper titled ‘Physio-chemical Characterization of Unexploited Mango Diversity in Sub-mountane Zone of Northern India’ has been jointly published by PBB, PSCST and Department of Fruit Science, PAU in Indian Journal of Plant Genetic Resources (IJPGR) Vol.25 No.3, 2012 (Copy placed at **Annexure-V (Pg.53)**).

Since this is an important heritage site, Chairman may consider provision of funds out of State plan budget for acquiring and conserving this site.

Item No.6.3.6 Proposal for declaration of State Flower

The Govt. of Punjab had already notified State Animal (*Antilope cervicarps*, Black Buck), State Bird (*Eastern goshawk*, Baj) and State Tree (*Dalbergia sissoo*, Shisham) vide notifications issued by Department of Agriculture and Forests (Forest Branch) dated 15.3.1989 to promote their conservation. However, state flower is yet to be notified. Twenty one (21) states of India have already notified their state flowers to promote conservation of particular species. Accordingly, it is proposed that a State flower may be identified for notification. The declaration as State Flower would help to create awareness and initiate activities for the conservation for the identified species all across the Punjab. It is proposed that any one flower i.e. either *Butea monosperma* (Palash) or *Bauhinia variegata* (Kanchnar) or *Acacia nilotica* (Kikar) which are common species all over Punjab and easily identifiable or *Hibiscus hoshiarpurensis* (an endemic species) or *Tecomella undulata* (Roheda) an endangered species or any other species as deemed appropriate be selected.

This is for the consideration of members of PBB.

Item No.6.3.7 Annual Report (2011-12 & 2012-13) and Statement of Accounts for (2011-12 & 2012-13).

Under Section 33 of the Biological Diversity Act, 2002, the Annual Report and Statement of Accounts of the Board are required to be placed before the Legislative Assembly.

Copies of Annual Report for 2011-12 and 2012-13 are placed on table for perusal and approval of Board Members. Copies of Statement of Accounts for the year 2011-12 and 2012-13 are also annexed at **Annexure VI (Pg.62)** for information and approval. Further, post facto approval for appointment of auditor M/s Aggarwal A. Kumar & Associates at annual fees of ₹10,000/- + taxes may also be ratified.

For approval please.

Item No.6.3.8 Appointment of Auditor for Punjab Biodiversity Board.

M/s Aggarwal A. Kumar & Associates has been auditing the accounts of the Board. As M/s Aggarwal A. Kumar & Associates has been already completed 3 years, it is proposed that M/s Gandhi & Associates, Chartered Accountant, Chandigarh may be appointed as Auditor for auditing the accounts of the Board for next three years i.e 2014-15, 2015-16 and 2016-17 at an annual fees of ₹15,000/-. M/s Gandhi & Associates is CAG empanelled Auditor and has been auditing the Accounts of PSCST.

For approval please.

Item No.6.3.9 Approval for expenditure of PBB for the F.Y 2014-15.

Proposed budget of PBB for the F.Y. 2014-15 is as under:

(Rs. in Lacs)

| Head | Expenditure during 2013-14 | Proposed expenditure during 2014-15 |
|------------------------------------|-----------------------------------|--|
| Manpower | 6.33 | 14.74 |
| Administrative Expenditure | | |
| • Printing & Stationery | 0.72 | 0.80 |
| • Vehicles (Running & Maintenance) | 1.80 | 2.00 |
| • Travel | 0.53 | 0.60 |
| • Other office expenses | 1.04 | 1.10 |
| Total | 10.42 | 19.24 |

For approval please.

Item No.6.4 Agenda items for information

Item 6.4.1 Provision of funds by National Biodiversity Authority for various activities of Punjab Biodiversity Board

During the period of reporting, PBB received following funds:

| Funds received from NBA for 2011-12 (A) | (Rs. in lacs) |
|---|----------------------|
| Celebration of IB Day-2011 | 1.50 |
| Organization of Biodiversity Festival-2012 | 1.00 |
| Putting up exhibition on behalf of MoEF & NBA in CII Conference on 'Sustainability Solutions' | 1.00 |
| Publication of BD Act, 2002 in Punjabi | 1.50 |
| Total (A) | 5.00 |
| Funds received from NBA for 2012-13 (B) | |
| Organization of PBB exhibition during COP-11 | 4.75 |
| Preparation of display material on behalf of MoEF, NBA for COP-11 exhibition | 8.38 |
| Celebration of IB Day-2012 | 2.25 |
| Funds for hiring manpower to carry out mandatory work of PBB | 8.00 |
| Preparation of PBRs in five districts (Gurdaspur, Tarn Taran, Pathankot, Ludhiana & Bathinda) | 11.50 |
| Total (B) | 34.88 |
| Funds received from NBA for 2013-14 (C) | |
| Celebration of IB Day-2013 | 3.00 |
| Preparation of PBRs in six districts and one village (SBS Nagar, SAS Nagar, Ferozepur, Hoshiarpur, Roopnagar, Barnala & Cholti Kheri, District Fatehgarh Sahib) | 14.95 |
| Constitution of 33 village level BMCs | 19.80 |
| Total (C) | 37.75 |
| Funds received from NBA for 2014-15 (D) | |
| Financial assistance to Punjab Biodiversity Board for strengthening of manpower (outsourced/ contract basis) for year 2014-15 | 09.50 |
| Training & capacity building of academicians and personnel of relevant line departments dealing with Biodiversity related issues in Punjab | 10.00 |
| Celebration of International Biological Diversity Day, 2014 | 5.00 |
| Total (D) | 24.50 |
| Grand Total (A+B+C+D) | 102.13 |

- **Funds received from Govt. of Punjab under Non Plan Budget:**
 - Non Plan budget 2011-12: Rs.10.00 lacs
 - Non Plan budget 2012-13: Rs.10.00 lacs
 - Non Plan budget 2013-14: Rs. 4.05 lacs
(No funds were provided under office expenditure by the State Govt.)
 - Non Plan budget 2014-15: ---
 - Funds received from Govt. of Punjab for activities: Nil
- Total Rs.24.05 lacs**

Further, during the FY 2013-14 and 2014-15, PBB has also submitted the following proposals to NBA:

(Rs. in lacs)

| | | |
|----|--|--------------|
| 1. | Strengthening of PBR preparation activities in Punjab with the Support of specialized staff at field level | 28.50 |
| 2. | Preparation of 3 District and 3 Village level People's Biodiversity Registers | 11.55 |
| | Total | 40.05 |

This is for information of Members, please.

Item 6.4.2 Organization of joint Exhibition of MoEF, NBA and SBBs on behalf of MoEF, NBA during COP-11 to CBD held at Hyderabad (Andhra Pradesh) from 1st Oct.2012 to 19th Oct. 2012

The Sixth Conference of the Parties serving as Meeting of the Parties (CoP/ MoP-6) to the Cartagena Protocol on Bio-safety and the Eleventh Conference of the Parties (CoP-11) to the Convention on Biological Diversity (CBD) were organized by Ministry of Environment and Forests, Govt. of India from 1st to 19th October, 2012 at HICC-HITEX Complex, Hyderabad. The Conference of the Parties to CBD is the governing body of the Convention and it advances implementation of the Convention through the decisions it takes at its periodic meetings held every two years. The mega event provided a massive opportunity to India to consolidate, scale up and showcase initiatives and strengths on biodiversity protection and conservation. The prestigious event was attended by around 10,000 participants from 193 countries. The High Level Segment of the meeting was inaugurated by Hon`ble Prime Minister of India.

An Interactive Fair on Biodiversity in the form of an International Exhibition was organized concurrently at COP-11. The exhibition provided an excellent opportunity for presentations and interactions among the participants. In total, 90 exhibition stalls representing a diverse array of organizations, including UN bodies, international organizations, various department/ ministries of Government of India and Govt. of Andhra Pradesh, research and academic institutions, National Biodiversity Authority and State Biodiversity Boards, National & International business enterprises and NGOs, were set up to present and show case the various biodiversity conservation activities, initiatives, projects and rich heritage to raise biodiversity related issues and foster cross-organizational exchanges.

Exhibition Stalls of MoEF, NBA and SBBs

A joint exhibition of Ministry of Environment & Forests (MOEF), Govt. of India, National Biodiversity Authority and 26 State Biodiversity Boards (SBBs) was put up at the occasion comprising 29 booths. Punjab Biodiversity Board (PBB) was nominated by Govt. of India for its coordination, especially for layout, designing and preparation of display materials. The exhibition materials were conceptualized, designed and printed by PBB.

The layout plan included zone wise presentation of biodiversity as below:

| Sr. No. | Zone/Area | Exhibiting SBBs | Focused subject area |
|---------|----------------------------|---|--|
| 1. | MoEF and NBA | - | Country level information (India being a mega diverse country) along with activities, initiatives and progress by MoEF and NBA towards biodiversity conservation including ZSI & BSI |
| 2. | North Zone | Haryana, Himachal Pradesh, J&K, Punjab, Uttar Pradesh, Uttarakhand | Biodiversity of the North Western Himalayan (mountain and sub-mountainous ecosystems) and alluvial plains |
| 3. | South Zone | Andhra Pradesh, Karnataka, Kerala and Tamil Nadu (CPREEC) | Biodiversity of the peninsular/ deccan region with focus on coastal biodiversity |
| 4. | Central Zone | Bihar, Chhattisgarh, Jharkhand Madhya Pradesh | Forest and agricultural diversity of Central India |
| 5. | West zone | Goa, Gujarat, Maharashtra and Rajasthan | Biodiversity of desert ecosystem,, Rann and western coastal areas |
| 6. | East and North East states | Arunachal Pradesh, Assam, Manipur, Meghalaya Mizoram, Nagaland, Orissa, Sikkim, Tripura | Diversity in North Eastern region as well as Sundarbans with information on in-situ and ex-situ conservation efforts, including special features of domesticated biodiversity |
| 7. | Agricultural Diversity | All SBBs | Agricultural biodiversity presenting live seed samples of varieties of crop plants and other species |
| 8. | Coastal & marine diversity | Coordinated by CPREEC | Coastal diversity of Eastern & Western Ghats |
| 9. | Handicraft Area | All SBBs | Biodiversity based handicrafts |
| 10. | Sacred Groves and TK | All SBBs | Biodiversity related cultural and religious connotations of communities and associated practices |
| 11. | Audio Video Area | All SBBs | Presentation and screening of biodiversity related films documentaries and slides. |
| 12. | Activity Area | --- | Organization of biodiversity games and interaction for college and school students |

In all 171 panels/ standees/ posters along with 255 seed samples of various crops were displayed. Publications including books, booklets, pamphlets, fliers, and CDs by MoEF, NBA and all participating SBBs were displayed and made available for distribution in respective sections.

A major highlight of the exhibition was that all stalls were manned by 40 volunteers of National Green Corps "Prakrithi Mitras" from Andhra Pradesh who were trained on various biodiversity issues for 3 months before the commencement of CoP-11.

The exhibition was widely visited by COP-11 delegates, Govt. officers & scientists, school, college and university students, NGOs, research scholars and general public. The exhibition witnessed a huge rush of general public and school students especially on weekends as exhibition was kept open for general public on all 3 weekends of the event. The VVIP delegates included of Convention of Biological Diversity, Montreal, Canada; **Hon'ble Chief Minister, Andhra Pradesh**; Ministers from different states, senior officers from the Ministry of Environment & Forests, Govt. of India and other Central Ministries, Chief Secretary, Andhra Pradesh; Planning Commission members, Heads and representatives of many International organizations including CBD secretariat, Chairmen and Member Secretary of SBBs and several central and state govt. officers from Govt. departments & institutions. All the queries raised by the visitors were appropriately responded to the NGC volunteers, PBB and KSBB team. Total 3345 entries were made in eight visitor books by the visitors.

An amount of Rs.13.25 Lacs was provided to PBB by NBA for preparation of exhibition material. A comprehensive report along with DVD of the exhibition has been submitted to Secretary, MoEF Gol and Hon'ble Chief Minister, Punjab for information. The efforts of Punjab Biodiversity Board in coordinating & organizing the exhibition were appreciated by MoEF and NBA.

This is for the information of members of PBB.

Item 6.4.3 Launch of PBB website

Punjab Biodiversity Board has developed its website with domain name “www.pbb.gov.in”. The website contains information on the various aspects of Biological Diversity Act, 2002 and activities/programmes being taken up by the Board. The website was launched by Mr. Hem Pande, Joint Secretary, MoEF, Govt. of India during 7th meet of State Biodiversity Boards held in January, 2012 at Chennai.

This is for the information of members of PBB.

Item 6.4.4 Organization of Biodiversity Festival, 2012

Punjab Biodiversity Board (PBB) had organized a 'Biodiversity Festival' in Punjab by conducting two state level competitions on biodiversity in January- February, 2012. The programme was sponsored by National Biodiversity Authority, Govt. of India. An amount Rs. 1 Lac was provided to PBB by NBA for organization of Festival. The details are as under:-

a) Documentation of Local Biodiversity by School Students

A unique contest on "Documentation of local biodiversity" by school students was organized by Punjab Biodiversity Board. The entries were invited through District Science Supervisors (DSS) for the contest from school students at block level. The main objective of the programme was to make students aware about their local biological resources through documentation and to motivate & encourage them to take concerted actions to conserve it. The participating students (Class VIII to XII) were required to document their local biodiversity (block level) in the prescribed format (PBR template provided by NBA) in English or Punjabi. The information on locally available plants, crops, fruit trees, medicinal plants, domesticated & wild animals, birds etc. was to be enlisted along with their uses and associated traditional knowledge (TK). The students were advised to take help of teachers, elders in the family or experts in preparing the lists for their locality. Cash prizes for the district and state level winners were announced as per following details:-

District level:- ₹1000/- and ₹500/- for 1st & 2nd prize, respectively for each district and the same will be considered for state level contest

State level:- ₹10,000/-, ₹5,000/- and ₹2,000/- for 1st, 2nd & 3rd prize, respectively.

Total 314 entries from 217 schools of 81 blocks of 20 districts were received by PBB. The entries were adjudged by an expert committee to select district and state level winners. The list of winner students along with their Guide teachers is placed at **Annexure-VII (Pg.63)**. The entries from each district will be further collated and compiled in due course of time to prepare consolidated District level Students PBRs for reference and record of respective District Level BMCs.

b) Preparation of Biodiversity Mascot of Punjab

PBB had invited entries for preparation of 'State biodiversity mascot' from school students and general public through newspaper & website advertisement with cash prize of Rs.10,000/- for the winners of each category along with a memento and certificate. Total 169 entries comprising 139 from school category and 30 from general category were received by PBB. The expert committee adjudged Mascot of Mr. Gourav Shonik titled

“Bucktawar Singh” as winner from general category, but observed that no entry from school category qualified for the prize. However, efforts of two school students i.e. Prabhjot Kaur (Mohali) and Harjinder Singh (Nabha) were appreciated. The selected mascot along with slogan/message will be used in publications, exhibits and other printed or digital media of PBB. The prize distribution programme was held at Bharti Vidya Mandir Senior Secondary School, Ludhiana on 31st August, 2012.

This is for the information of members of PBB.

Item 6.4.5 Translation and Printing of Biological Diversity Act, 2002 & Biological Diversity Rules, 2004 in Punjabi

The Govt. of India has mandated the translation of Biological Diversity Act, 2002 and Biological Diversity Rules, 2004 in regional language. Accordingly, NBA provided Rs.1.5 lacs to PBB for translation of Act & Rules into Punjabi to help local people especially BMC/TSG members like farmers, NGOs, teachers, vaids, village panchayat members, general public, etc. to understand various provisions of the Act & Rules comprehensively and insightfully to enable & motivate them to take concerted actions towards conservation and sustainable use of components. PBB got the verbatim translation of Act & Rules done through Department of Punjabi Language, Govt. of Punjab. The same is compiled and published (5000 copies).

This is for the information of members of PBB.

Item 6.4.6 Celebration of International Biodiversity Day-2012 and 2013

International Biodiversity Day-2012

International Biodiversity Day is celebrated each year on 22nd May. The theme of year 2012 IBD as finalized by Convention of Biological Diversity was 'Marine Biodiversity'. The following activities were taken up by Punjab Biodiversity Board:

- Department of Zoology and Environmental Science, Punjabi University Patiala celebrated IB Day on 5.6.2012 by organizing one day National Seminar on "Marine Biodiversity and its importance". Special lectures on biodiversity, posters competition, plantation drive and a student rally were organized.
- Guru Nanak Dev University, Amritsar celebrated IB Day by organizing workshop on "Aquatic Biodiversity and livelihoods in Punjab" on 22.05.2012 at Botany Department of University by organizing various programmes i.e. a series of lectures on marine biodiversity, photography competition on various aspects of biodiversity and a documentary film on "Importance of biodiversity" was also screened.
- Pushpa Gujral Science City, Kapurthala, celebrated International Biodiversity Day by organizing activities like expert talks and distribution of informative brochures on conservation and management of wildlife resources to the general public.
- A special seminar on "Marine biodiversity" was organized by Global College of Pharmacy (Anandpur Sahib) by conducting a series of expert lectures.
- A special district level programme was organized by District Science Supervisor in collaboration with District Biodiversity Management Committee at Shiwalik Public School, Rupnagar, under the chairmanship of Deputy Commissioner Rupnagar. The programme was attended by school students, teachers, members of Biodiversity Management Committees and Technical Support Groups of District Rupnagar and general public. Activities including exhibition, paper reading competition, play on biodiversity & a series of lecture on different aspects of biodiversity were organized
- Institute of Ecology & Environment, Pathankot conducted a seminar on "Biodiversity Conservation". A special visit to a biodiversity rich site 'Chatpat Bani in village Katruchak' was conducted to study the biodiversity of the site. An exhibition on traditional health care was also organized.
- Govt. Primary School, Machaki Mal, Distt. Faridkot celebrated IBD by organizing a seminar on 'Threats to Biodiversity,' and undertook various other activities like competitions, declamation contests, plantation of medicinal plant in the school premises etc.

- 220 different programmes on Biodiversity such as lectures, rallies, special visits, plantation & cleanliness drives, exhibition and student competitions etc. were organized in 98 schools of the state covered under National Green Corps (NGC) programme.

Rs.2.25 lacs were released by National Biodiversity Authority for Celebration of IBD-2012.

International Biodiversity Day-2013

The theme of year 2013 was 'Water & Biodiversity'. The following activities were taken up by Punjab Biodiversity Board:

- PBB, in collaboration with Punjab State Council for Science & Technology and ENVIS Centre, put up an Exhibition at Students' Centre of Panjab University, Chandigarh on 22-05-2013 with a purpose to create awareness among students.
- Central University of Punjab, Bathinda in collaboration with PBB organized a series of expert lectures. Expert lectures were delivered by eminent scientists representing different aspects of the biodiversity.
- Panjabi University, Patiala organized a one day seminar on "Conservation of Biodiversity and Water". The seminar was attended by more than 300 participants including students, research scholars, faculty members.
- Guru Nanak Dev University, Amritsar celebrated IB Day by organizing workshop on "Relationship between Water and Biodiversity" at Botany Department of University. During the workshop various programmes were organized i.e. a series of lectures on various aspects of biodiversity. Beside it, poster/pamphlet competition were also organized among the students with the purpose to generate awareness among the students
- Baba Farid University of Health Sciences, Faridkot conducted a seminar cum exhibition on "Biodiversity Based Traditional Medicine" in their premises. About 100 participants including members of District level BMCs attended the seminar as well as exhibition.
- Pushpa Gujral Science City, Kapurthala, celebrated International Biodiversity Day by organizing activities like expert talks, painting competition photography competition, a play on conservation of biodiversity and distributed information brochures on watering biodiversity and ecosystem management released by National Biodiversity Authority, Chennai. The target audience was students, teachers, and general public.
- Department of Botany, Dolphin PG College of Life Sciences, Chunni-Kalan, Fatehgarh Sahib have celebrated International Biodiversity Day by organizing a

one day seminar on the importance of biodiversity. About 5 sapling of shady trees were also planted in the premises of the college.

- A special seminar on “Biodiversity and Water conservation” was organized by Global College of Pharmacy (Anandpur Sahib) by conducting a series of lectures from the students of the college.
- A special district level programme was organized by District Science Supervisor at Govt. Adarsh Sen. Sec. School Anandpur Sahib, Distt. Rupnagar, under the chairmanship of District Education Officer Rupnagar. The programme was attended by school students, teachers, members of biodiversity management committees and technical support groups of District Rupnagar and general public. Activities including exhibition, paper reading competition, play on biodiversity & a series of lecture on different aspects of biodiversity were organized.
- Institute of Ecology & Environment, Pathankot conducted a seminar on “Biodiversity Conservation”. An exhibition on traditional Health care was also organized.
- Diffuse Environmental Education Keep Society Humbly Aware (DEEKSHA) conducted a workshop on “Conservation and Preservation of Biodiversity” at Sant Isher Singh Public School, Mohali. Various lectures on the different aspects of biodiversity was present by experts. Beside it, various competitions such as Quiz, slogan writing competition was also conducted.
- Abhilasha Foundation, Bathinda organized a one day seminar on “Biodiversity and its uses” at Zila Parishad Hall, Mukstar Sahib. The programme was inaugurated by ADC (D). About 200 peoples including members of District level BMCs attended the workshop.
- Sai Dharam Singh Grover Foundation, Derabassi, celebrated this day by organizing a training programme to develop some handicrafts items from weeds of water hyacinth etc. to villagers, local women and school students .
- Govt. Primary School, Machaki Mal, Distt. Faridkot celebrated the day by organizing a seminar on ‘Threats to Biodiversity,’ and undertook various other activities like competitions, declamation contests, plantation of medicinal plant in the school premises etc. Beside it, school also exhibited a exhibition on traditional foods of Punjab.

Rs.3.00 lacs were released by National Biodiversity Authority for organizing these programmes to celebrate IBD-2013.

This is for the information of members of PBB.

Item 6.4.7 Visit of Science Express: Biodiversity Special to Chandigarh & Punjab

Science Express - Biodiversity Special' (SEBS) Train was a collaborative initiative of Department of Science & Technology (DST) and Ministry of Environment & Forests (MoEF), Government of India to align with activities of Conference of Parties held at Hyderabad, India from 1st October to 19th October, 2012 and beyond. The main objective of the Train was to raise awareness about the country's unique biodiversity and the need to conserve it through people's participation and to popularize the importance of biodiversity amongst the masses. Of the 16 coaches comprising the SEBS, eight were dedicated to showcasing biodiversity spread across the various bio-geographic zones- the Trans Himalaya and the Himalayas, the Gangetic Plain, North East India, the Desert and Semi-Arid zone, the Western Ghats, the deccan Peninsula and the Coasts and Islands. The other coaches had exhibits on climate change, energy and water conservation. It was launched on 5th June, 2012 at Ahmedabad and terminated at Gandhi Nagar on 22nd December, 2012 at the end of first phase after completing 53 visits in various parts of the country.

In the State of Punjab, the train halted at 3 important stations covering north east and south west parts of the State as per the following schedule:-

- Chandigarh: 15th Nov to 18th Nov., 2012
- Ferozepur : 26th Nov. to 28th Nov., 2012
- Bathinda : 29th Nov. to 1st Dec., 2012

Punjab Biodiversity Board (PBB) in collaboration with Punjab State Council for Science & Technology (PSCST) motivated & mobilized students and teachers from Schools, Colleges, Universities and academic institutions to visit the train for information on biodiversity of India. Prior information was sent to all District Science Supervisors and Heads of institutions to motivate and mobilize teachers & students (along with their parents) to visit this unique facility on the designated dates of halt at the nearest Railway Station, about 2 months in advance. NGC schools were also motivated to mobilize eco club members to visit the Biodiversity Special Train. Besides this, information was also sent to non-governmental organizations to motivate general public to visit the facility as per their convenience. Literature available on biodiversity comprising booklets on Biodiversity, magazines, articles etc. was widely distributed to generate inquisitiveness amongst students & teachers in advance. The information was also put on the PSCST website, ENVIS website and PBB website for wider publicity. The train schedule was also advertised through display advertisement in leading English & Punjabi newspapers of the region.

PBB & PSCST also organized several events at the respective Railway Stations coinciding with the halt of the train. Experts and eminent personalities were invited to visit the train and interact with students to motivate them to conserve biodiversity. Orientation of students and teachers on various elements of the Biodiversity Special was done by PBB and PSCST officers prior to boarding the train. PSCST & PBB officers assisted Centre for Environment Education in organization of painting competitions at the three stations. Various biodiversity games were organized by PBB for students to make learning a fun activity. Winners were given away prizes. A small exhibition was also organized at the Railway Station by PBB and Regional Centre of Expertise on ESD, PSCST. A brief summary of the visitors is as below:-

| Station | District covered | No. of schools from Punjab | No. of teachers | No. of students | No. of Universities | No. of college |
|-------------------|--|----------------------------|-----------------|-----------------|---------------------|----------------|
| Chandigarh | Patiala, Ropar, SBS Nagar, Mohali, Jalandhar | 157 | 225 | 1890 | 2 | 7 |
| Ferozpur | Ferozpur, Faridkot, Moga, Amritsar, Muktsar, Fazilka | 47 | 260 | 2355 | - | 2 |
| Bathinda | Bathinda, Fazilka, Ludhiana, Mukstar, Mansa, Barnala, Faridkot | 114 | 536 | 6628 | 1 | 5 |

A detailed report of the activity has been submitted to MoEF, GOI and Chairman NBA for information.

This is for the information of members of PBB.

Item 6.4.8 Nomination of Member Secretary, Punjab Biodiversity Board as a member of NBA Expert Committee on Normally Traded Commodities.

Member Secretary, PBB has been nominated as a member of Expert Committee on "Normally Traded Commodities" re-constituted by NBA in view of her expertise and previous work in the area of conservation of biological resources. Earlier, she was also a member of NBA Task Force for preparation of guidelines on creating structure, administration and maintaining of accounts and other related matters pertaining to Biodiversity Management Committees.

This is for the information of members of PBB.

Item 6.4.9 Biodiversity Outreach Programmes

A) Brainstorming workshop on “Identifying Biodiversity rich areas in Punjab”

Punjab Biodiversity Board, in collaboration with ENVIS Centre of Punjab State Council for Science & Technology and UNESCO, organized a brainstorming workshop on “Identifying Biodiversity Rich areas in Punjab” on 21st March, 2012 in Chandigarh under the chairmanship of Member Secretary, PBB. The main objective of the workshop was to identify sites rich in the biodiversity in the State, which had potential to be declared as Biodiversity Heritage Sites (BHS). About fifty experts from International/national institutions (UNESCO, WII, NBAGR, WWF- India), various relevant Govt. departments of Punjab, faculty & research scientist from Universities & Colleges and proactive NGOs participated. The distinguished guests were Dr. Ram Boojh, Programme Specialist, Ecological Sciences, UNESCO, Dr. V.B. Mathur, Dean, Wildlife Institute of India; Dr. D.K. Sadana, Principal Scientist, NBAGR, Karnal; Prof. M.S. Johal, well known fisheries expert; Dr. A.K. Jain, Sr. Animal Breeder, GADVASU and Ms. Gitanjali, Project Officer WWF-India.

Participants evinced keen interest in discussions and shared information about biodiversity rich sites in the states. Fifteen biodiversity rich areas of the state were specifically identified and recommended by experts for conservation which may further be declared as Biodiversity Heritage Sites or Biosphere Reserve (List at **Annexure-VIII (Pg.67)**). Experts were also of the view that there was an immense need to increase awareness among local communities and enhance their involvement in all biodiversity conservation programmes.

B) Exhibitions on Biodiversity (3)

PBB participated in the following exhibitions:

- **CII Conference on ‘Sustainability Solutions’:** An exhibition stall was put up by PBB on behalf of Ministry of Environment & Forests, Govt. of India and National Biodiversity Authority at the Conference on ‘Sustainability Solutions’ organized by Confederation of Indian Industry at New Delhi from 25th & 26th November, 2011. One of the focus area of the Conference was ‘Valuing and securing biodiversity. The posters, panels and standees depicting various aspects of Indian biodiversity and Biological Diversity Act, 2002, besides, biodiversity related handicraft, etc were displayed on the stall. Awareness literature including publications, brochures, and pamphlets of MoEF, NBA and PBB were

distributed. The distinguish visitors included Mr. Salman Khurshid, Union Minister of Law and Minority Affairs, Govt. of India; Mr. Hem Pande, Joint Secretary, Ministry of Environment & Forests, Govt. of India; Dr. Balakrishna Pisupati, Chairman, NBA and Mr. Ravi Sharma, Principal Officer, CBD Secretariat.

- **Destination Punjab Fair:** PBB, in collaboration with PSCST, put up an exhibition stall at organized by Punjab Chapter of CII at Amritsar from 7th to 10th October, 2011. The major objective of the fair was to project “Brand Punjab” for creating linkages for SMEs and creating networking opportunities across key sectors with special focus on agricultural & food sector. The fair was inaugurated by S. Sukhbir Singh Badal, Hon`ble Deputy Chief Minister, Punjab. More than 50 specific queries related to biodiversity issues were responded. Bilingual awareness literature on biodiversity was also distributed.
- **Van Mahotsav:** An exhibition stall on biodiversity rich areas of Punjab was put up jointly by PBB and PSCST during Van Mahotsav organized by Department of Forest, Punjab at Fazilka on 1st June, 2012. The event was inaugurated by Hon`ble Chief Minister, Punjab.
- **7th CMS Vatavaran Environment & Wildlife Film Festival:** PBB participated on behalf of National Biodiversity Authority, Chennai and as knowledge partners of CMS Vatavaran during the mega event -7th Environment & Wildlife Film Festival held at Indira Gandhi National Centre for Arts, New Delhi from 30th – 3rd February, 2014. PBB showcased diversity in crops and domesticated animals through an exhibition. The exhibition included the displays of live samples of native/endemic seed of crop varieties, standees/panels broadly describing Biodiversity, Biodiversity Hotspots, Biodiversity at National Level and Biodiversity in Punjab. PBB also adopted distinctive approach of sensitizing communities through informative exhibition and the Biodiversity Game “Snakes & Ladder”.

- C) Special session on Biodiversity Conservation outside Protected Area Network:** Punjab Biodiversity Board organized a special session on “Biodiversity Conservation outside protected Area Network” on 3rd Feb., 2014 during 7th Environment & Wildlife Film Festival. The session included Keynote address from Dr. Ram Bhoj, Programme Specialist, UNESCO about Man and Biosphere programme of UNESCO. Dr. Neelima Jerath, Member Secretary, PBB delivered a lecture on "Biodiversity Rich Areas in Punjab". Further Mr. G. M. Lingaraju, Liaison cum Technical Officer, National

Biodiversity Authority spoke about the initiatives of NBA for conservation of Biodiversity Heritage Sites. This was followed by an interactive session with the participants. Visitors from diverse fields including Academicians, Students, and General Public etc. highly appreciated the session organized by Punjab Biodiversity Board.

This is for the information of members of PBB.

Item 6.4.10 Participation in Trainings, Seminars & Conferences

A) MS/PBB participated in:

- 2nd Intergovernmental Committee Meeting for Nagoya Protocol ICNP(2) organized by CBD & Ministry of Environment & Forests, Govt. of India at New Delhi (2nd to 6th July, 2012)
- 8th meeting of SBBs, March 2013 (15th & 16th March, 2013) at Chennai.
- 7th CMS Vatavaran Environment & Wildlife Film Festival held at IGNC, New Delhi (30th -3rd February, 2014)

B) Senior Scientific Officer (Env.) PBB/PSCST participated in:

- United Nation's and JICA's Group Training Course on "Regional Development by Sustainable use of Biodiversity" held at Japan (2nd October, 2011 to 3rd November, 2011).
- National Workshop on People's Biodiversity Registers at Bengaluru organized by National Biodiversity Authority on (22nd – 23rd Dec. 2011 at Bengaluru)
- 1st National Biodiversity Congress held at Thiruvananthapuram (27th – 30th Dec. 2012).
- 9th meeting of State Biodiversity Boards (SBBs) organized by National Biodiversity Authority at Chennai (20th to 21st January, 2014)

C) Scientist PBB participated in:

- Destination Punjab Fair' organized by Punjab CII at Amritsar on 7th to 10th October, 2011.
- CII conference on 'Sustainability Solutions' on 25th & 26th Nov.2011 held at New Delhi
- Biodiversity Assessment of Keshopur Miani Wetland, Distt. Gurdaspur in collaboration with experts from Punjabi University, Patiala on 16.02.2014.

Item No.6.5: Any other item with the permission of Chairman

PUNJAB BIODIVERSITY BOARD

Sub: Minutes of the 5th meeting of Punjab Biodiversity Board held under the chairmanship of Hon'ble Chief Minister, Punjab on 24.10.2011 at 9.30 AM at the residence of CM.

Present: List of attendees at **Annexure-I**.

The following agenda items were discussed and decisions taken:

Item No. 5.1: Confirmation of Minutes of 4th Meeting of Punjab Biodiversity Board held on 25/08/2010.

Confirmed

Item No. 5.2: Follow up action on the Minutes of the 4th Meeting of Punjab Biodiversity Board held on 25/08/2010.

Noted

Item No.5.3 Mega Event: Three day meeting of MoEF-Gol, National Biodiversity Authority (NBA) & State Biodiversity Boards (SBBs) in Punjab on "Implementing Biodiversity Act, 2002".

Noted. Board members were informed that NBA had provided Rs.17.36 lacs for the event.

Item No.5.4: Constitution of Biodiversity Management Committees (BMCs) and Technical Supporting Groups (TSGs).

Board members were informed that district level BMCs and TSGs have been constituted in all the 20 districts of the State and Rs.8.00 lacs received from NBA had been disbursed for meetings of BMCs, as well as, for providing training for preparation of People's Biodiversity Registers. Five trainings have been conducted in districts Hoshiarpur, Ropar, Amritsar, Fatehgarh Sahib and Sangrur. Work is being taken up in other districts.

Item No.5.5: Proposal on declaration of Biodiversity Heritage Site: Inami Baag.

Board members were informed that scientific studies at the site had been conducted with Fruit Research Station of PAU located at Gangian and physical site studies were carried out in collaboration with District Administration and Department of Horticulture. The need for conserving this important area was reiterated. The proposal was approved. The same will be pursued with the State Govt. (under Plan Scheme) and with NBA/MoEF-GOI for release of funds. Additional activities for conservation of the gene pool could be taken up with PAU subsequently.

Item No.5.6: Proposal on Interstate Shivalik Biodiversity Conservation Corridor

Details of the proposal were discussed. It was suggested that the area could be considered for Biosphere Reserve subject to the condition that developmental activities are not hampered. Director, Botanical Survey of India, Kolkata informed that no developmental activities were affected in Biosphere Reserves. However, VC-PAU expressed his reservations. It was decided that a meeting of Experts would be organized under the chairmanship of SSTE to look into the details and a decision would be taken accordingly.

Item No.5.7: Punjab State Biological Diversity Rules

The Board members were informed that draft Rules have been vetted by LR and would be put up to the Govt. for approval.

Item No.5.8: Conservation of Peafowl in Punjab

The Board members were informed that a proposal has been prepared with Wildlife Institute of India, Dehradun for submission to Govt. of India for funding.

Item No.5.9 Project on Inventorising Industries involved in utilization of bioresources in Punjab.

Noted

Item No.5.10: Participation of Member Secretary, Punjab Biodiversity Board in Conference of Parties-10 (Cop-10) at Nagoya, Japan.

Noted

Item No.5.11: Annual Report and Statement of Accounts for 2009-10

Approved

Table Item 1: Annual Report and Statement of Accounts for 2010-11

Approved

Table Item 2: Celebration of International Biodiversity Day, 2011.

Noted. Board members were informed that Govt. of India had sanctioned Rs.1.5 lac for the activity.

Table Item 3: List of threatened flora and fauna from Punjab

Board members were informed that a list of 8 angiosperms, 3 pteridophytes, 6 mammals, 20 birds and 12 reptiles had been submitted to MoEF, GOI through State Govt. for further necessary action at their end. Ratified.

**Table Item 4: Additional charge of Asstt. Manager (Finance & Admn.)–
Honorarium**

Members were informed that presently the PBB is serviced by Punjab State Council for Science & Technology. In the 4th meeting of PBB, it was agreed that Sh. Rakesh Grover, Junior Accounts Executive of PSCST be given additional charge of Finance & Admn. in the Board with appropriate honorarium as per Punjab Civil Services' Rules. Sh. Grover has requested honorarium @ 10% of basic pay. The request was approved subject to provision in the Punjab Civil Services' Rules.

Table Item 5: Restructuring of PBB staff.

Board members agreed that PBB needed to be strengthened by providing additional staff and regularizing existing staff. Hon'ble Chief Minister advised Secretary, Science Technology & Environment to look into the matter and put up the case to the State Govt. for enhancement of PBB budget appropriately under Non-Plan. Increasing the salary of Driver from Rs.5000/- + HRA to Rs.7,000/- + HRA per month was also approved.

The meeting ended with a vote of thanks to the chair.

Sub: List of attendees.

1. Shri S.C. Agrawal, IAS,
Chief Secretary,
Govt. of Punjab.
2. Shri A.R. Talwar, IAS,
Financial Commissioner, Development,
Govt. of Punjab.
3. Shri D.S. Guru, IAS,
Principal Secretary to CM,
Govt. of Punjab.
4. Shri D.S. Bains, IAS,
Financial Commissioner,
Department of Forests & Wildlife,
Govt. of Punjab.
5. Shri Viswajeet Khanna, IAS,
Secretary, Science, Technology & Environment,
Govt. of Punjab.
6. Dr. G.S. Kalkat,
Chairman, Punjab State Farmers Commission &
Ex. Vice Chancellor, PAU, Ludhiana.
7. Dr. B.S. Dhillon,
Vice Chancellor,
Punjab Agricultural University, Ludhiana.
8. Dr. Paramjit Singh,
Director, Botanical Survey of India, Kolkata.
9. Mr. H.S. Gujral,
Principal Chief Conservator of Forest,
Govt. of Punjab.
10. Mr. Sukhjit Pal Singh, PCS,
OSD to CM, Punjab.
11. Mr. H.S. Sandha,
Director,
Department of Animal Husbandry, Govt. of Punjab.
12. Dr. (Mrs.) Neelima Jerath,
Member Secretary, Punjab Biodiversity Board &
Executive Director, PSCST.
13. Dr. A.K Thukral,
Director Research,
Guru Nanak Dev University, Amritsar.
14. Dr. Anjana Pant,
Senior Coordinator,
WWF- India, New Delhi.

Follow up action on the Minutes of the 5th meeting of Punjab Biodiversity Board held on 24.10.2011

| Item No. | Name of the Item | Decision taken | Action taken |
|-----------------|--|--|--|
| 3.9 | Collection fee for access of bio-resources for commercial purpose / research | Board to inform general public and research bodies regarding collection fees | Board has been regularly giving information in its all trainings and outreach activities to all concerned. |
| 5.3 | Mega Event: Three day meeting of MoEF-Gol, National Biodiversity Authority (NBA) & State Biodiversity Boards (SBBs) in Punjab on “Implementing Biodiversity Act, 2002 | Noted | No action required |
| 5.4 | Constitution of Biodiversity Management Committees (BMCs) and Technical Supporting Groups (TSGs) | Noted | Discussed as separate item no. 6.3.1 |
| 5.5 | Proposal on declaration of Biodiversity Heritage Site: Inami Baag. | Noted | Discussed as separate item no. 6.3.4 |
| 5.6 | Proposal on Interstate Shivalik Biodiversity Conservation Corridor | A meeting of Experts would be organized under the chairmanship of PSSTE to look into the details and a decision would be taken accordingly | A meeting was held under the chairmanship of PSSTE, Govt. of Punjab on 08.05.2012. It was decided to assess the feasibility of developing the area as a Biosphere Reserve instead of “Conservation Corridor” and that Dhar-Dunera area in District Gurdaspur may be taken up on pilot basis. Mapping & delineation of Boundaries” and “Socio-economic needs assessment” was to be taken up by expert groups coordinated by District Level Biodiversity Management Committee of Pathankot. A meeting was held with ADC (D) and Director, Institute of Ecology and Environment (District BMC member) by PBB officers in June 2012. Subsequently the issue was discussed with Programme Specialist Ecology, UNESCO and the proposal not found to be feasible, Hence dropped. |

| | | | |
|-----------------------------|---|----------|--|
| 5.7 | Punjab State Biological Diversity Rules | Noted | Draft rules were modified and approved by LR for notification with memorandum for councils of ministers in Feb.2012. However, the draft was called by NBA for second review in July, 2012. The comments/observations of NBA were received in April, 2013 after repeated reminders and telephonic requests. NBA has again suggested modifications, some of which are inconsistent with the Act as per earlier discussion held with LR. The matter has been brought to the notice of NBA and is being discussed with Law Officer of NBA to remove ambiguities. |
| 5.8 | Conservation of Peafowl in Punjab | Noted | MoEF, GoI has not sanctioned the project. Hence, dropped. |
| 5.9 | Project on Inventorising industries involved in utilization of bioresources in Punjab. | Noted | The project was completed and report published. Copies will be placed on table. An executive summary is at Annexure IX (Pg.68) . |
| 5.10 | Participation of Member Secretary, Punjab Biodiversity Board in Conference of Parties-10 (Cop-10) at Nagoya, Japan | Noted | No action is required |
| 5.11 | Annual Report and Statement of Accounts for 2009-10 | Approved | No action is required |
| Separate Table Items | | | |
| 1. | Annual Report and Statement of Accounts for 2010-11 | Approved | No action is required |
| 2 | Celebration of International Biodiversity Day, 2011 | Noted | No action is required |
| 3 | List of threatened flora and fauna from Punjab. | Ratified | Joint Secretary, MoEF-GoI had requested the Board to revise the list of threatened fauna by including only those species which are on verge of extinction to ensure their conservation. Accordingly, Chief Wildlife Warden, Punjab was consulted and a revised list was submitted to Govt. of India in Jan. 2013. Additional Secretary, MoEF, GoI in July, 2013 had communicated that BSI, while agreeing to 4 floral species from PBB list, has also included 4 additional floral species |

| | | | |
|---|---|--|---|
| | | | <p>from Punjab in the list to be notified by MoEF, Gol and ZSI has agreed to include only 5 faunal species (1 mammal, 2 birds, 2 reptiles) out of 16 species recommended by Chief Wildlife Warden (CWW), Punjab for notification. He has further requested the Board to get the matter examined, if required and communicate the final list to MoEF, Gol for notification. The matter has been discussed with Department of Forests & Wildlife Preservation, Punjab in light of the comments received from BSI & ZSI. The revised list of threatened flora and fauna of Punjab consisting 8 floral and 5 faunal species prepared on the recommendation of BSI and ZSI, respectively has been submitted to MoEF, Gol for notification u/s 38 of BDA-2002 after the approval of Chairman, PBB. Further, the matter with regard to reconciliation of ZSI & CWW on remaining 11 faunal species for inclusion in the list will be taken up by PBB in due course of time and supplementary list will be submitted to MoEF, Gol for notification, if required.</p> |
| 4 | Additional charge of Assistant Manager (Finance & Admn.)– Honorarium | Board approved to grant of Honorarium subject to provision in the Punjab Civil Services' Rules. | The matter was put up to AD for final approval. However, AD approved only Rs.500/- pm which was not accepted by incumbent. The matter was taken up with NBA which approved grant of 10% of basic salary to an official of PSCST (JAE) to oversee Administrative and Accounts work till the Board's staff was trained. However, the JAE has refused to accept the same once again. Subsequently, Assistant (F&A) has been recruited. |
| 5 | Restructuring of PBB staff | Hon'ble Chairman advised Secretary, Science Technology & Environment to look into the matter and put up the case to the State Govt. for enhancement of PBB budget appropriately under Non-Plan | Discussed as separate item. |

Details of additional posts required with their justification

| Existing Staff | |
|--|-------------------------------|
| • Member Secretary- Additional charge | |
| • Scientist in place of Senior Scientific Officer | |
| • Steno-typist-cum-computer operator | |
| • Driver | |
| Additional staff immediately required | |
| Principal Scientific Officer (15600-39100+GP7600) | 1 |
| Senior Scientific Officer (15600-39100+GP 6600) | 1 (in place of Scientist)* |
| Biodiversity Communicator 15600-39100+GP 6600 | 1 |
| Research Officer 15600-39100+GP 5400 | 1 |
| Asstt. Manager (Finance & Administration) 15600-39100+GP 5000 | 1 |
| Accountant-cum-cashier 5910-20200+GP 1950 | 1 |
| Computer Operator-cum-steno-typist/ Clerk (5910-20200+ GP 2000) | 2 |
| Total additional posts | 7+2* |

| Sr. No. | Name of post | Justification |
|---------|--|---|
| 1. | Principal Scientific Officer (Scientist 'D') (15600-39100+GP 7600) | Till the appointment of full time Member Secretary, Principal Scientific Officer (PSO) will assist the acting MS to implement the Biodiversity Act in the State especially w.r.t. Section 23, 24, 41 and 61 of BD Act, 2002. The MoEF-Gol vide notification No.S.O.2708(E) dated 17.11.2008 has authorized officers of the State Biodiversity Board, not below the rank of Scientist 'C' (PSO) to file complaints with regard to offences punishable u/s 61A of BD Act, 2002. The Board is required to identify and conserve rare, threatened and endemic species and wild relatives of crop plants and protect them through <i>in-situ</i> and <i>ex-situ</i> conservation. Senior officer of the level of PSO is required to undertake conservation measures by formulating and executing special projects/ surveys/ studies and to carry out activities related to identification and declaration of Biodiversity Heritage Sites in the state. |
| 2. | Senior Scientific Officer -1 (15600-39100+GP 6600) | A Scientist at a consolidated salary of ₹20,000/-+HRA (outsource basis on contract) is working against the sanctioned post of SSO. He is involved in constitution of district level & town level BMCs & TSGs. Since, present junior officer (Scientist) is working against the sanctioned post of SSO, therefore, one SSO of PSCST has been given additional charge to oversee and facilitate his work especially liaison with district administration especially DCs/ ADCs. He also looks after the various routine activities of Board including celebration of IB Day and training programmes etc. |
| 3. | Biodiversity Communicator (15600-39100+GP 6600) | As all the BMCs at District/ Town/ Village level are required to be trained about various provisions of BD Act and documentation of local flora and fauna and associated traditional knowledge. Biodiversity Communicator will carry out all the capacity building and training activities of PBB at all levels. He will be responsible for developing training module and conducting training at district and village level. |

| | | |
|----|--|--|
| 4. | Research Officer (15600-39100+GP 5400) | The board is required to take up special studies related to biodiversity linked livelihood issues in Punjab, formulate strategy and action plan for sustainable utilization of such biological resources and implement benefit sharing mechanism as envisaged by BD Act. He will be involved in documentation of biodiversity and traditional knowledge associated with it. He will also carry out fields surveys especially in biodiversity rich pockets of the state and formulate and take up new projects. |
| 5. | Asstt. Manager (Finance & Administration) (15600-39100+GP 5000) | Since the Board has limited staff, hence, there is no need to have separate post of Manager (Finance & Accounts) and Administration Officer. The incumbent will carry out both the activity with assistance of Sr. Assistant. Administration and Account Asstt.-cum- Cashier. He will be responsible to look after the administrative as well as financial matters of the Board and to maintain and disburse grants of the Board, holding meetings and look after personnel matters. |
| 6. | Senior Asstt. (Admn.) (10300-34800+ GP 3800) | The activities of the Board will increase in due course of time, this post will be then required to assist the Asstt. Manager in administration matter. He will assist Asstt. Manager in holding meetings, preparation of Annual Reports and personnel matters. |
| 7. | Computer Operator-cum-steno- typist/ Clerk (2) (5910-20200+ GP 2000) | A computer operator-cum-steno-typist already working on consolidated salary ₹10000+HRA (outsource basis) on contract against the sanctioned post. Existing Computer Operator-cum-steno-typist is looking after all the routine typing and clerical work of Board. One additional computer is required to carry out the typing work of proposed scientific staff. |

Project Proposal

Biodiversity Resource Centre on Wheels



Prepared by:
Punjab Biodiversity Board

Project Proposal

Biodiversity Resource Centre on Wheels

Habitat destruction due to pressures of intensive agriculture, urbanization and industrialization is causing serious threat to the biodiversity of Punjab. In order to conserve biodiversity (including agriculture biodiversity), ensure its sustainable use and fair and equitable sharing of benefits arising out of biological resources, the Punjab Government has notified the Punjab Biodiversity Board. The Board has in turn set up Biodiversity Management Committees at district level in all districts and at village level in biodiversity rich areas of Shivaliks. The Board is also undertaking various activities to conserve biodiversity, create awareness on issues of sustainable utilization and promote equitable access and benefit sharing in the state.

Even though biodiversity issues have now begun to be highlighted in the media and through various natural resource conservation campaigns in the state, little is still known about the subject amongst people in rural, as well as, urban areas. Experts on the subject contend that there is an urgent need to take up extensive capacity building exercises, raise public understanding about the importance of biodiversity related issues to promote its sustainable utilization and empower all sections of society and stakeholders through information on Acts & Rules related to biodiversity. This, however, is a monumental task as involving all stakeholders in biodiversity conservation requires capacity building at all levels.

The 11th meeting of the Conference of the Parties (COP-11) to the Convention on Biological Diversity (CBD) was held in Hyderabad from 1st to 19th October, 2012. COP-11 provided an excellent opportunity to bring national focus on biodiversity and create mass awareness on various issues pertaining to it. A joint exhibition of MoEF-Gol, NBA and SBBS was also organized during COP-11 to showcase rich biological diversity of India. Punjab Biodiversity Board coordinated and organized the entire exhibition of MoEF, NBA & SBBs with respect to conceptualization, designing, development and display of exhibits and their layout on behalf of MoEF, NBA and some SBBs. COP-11 has already set the agenda not only for the Ministry of Environment and Forests, National Biodiversity Authority and all State Biodiversity Boards, but also for every citizen who has a stake in conservation of biodiversity and intends to make sustainable development a reality.

In an effort to create mass awareness on the biodiversity related issues all across the country with special focus on school students; the Ministry of Environment and Forests in partnership with the Department of Science and Technology, Govt. of India had also taken the initiative to run the Science Express -Biodiversity Special (SEBS) mobile train exhibition which covered major stations across India. The unique exhibition train had traveled to 53 locations across India with the objectives

to develop awareness about biodiversity, climate change and similar issues among students and general public. The SEBS was also highlighted during the COP-11.

As per its schedule, the SEBS had also traveled to 3 locations in Punjab namely Chandigarh (4 days, 15th Nov. to 18th Nov. 2012), Ferozpur City (3 days, 26th Nov to 28th Nov., 29, 2012) and Bathinda (3 days, 29th Nov. to 1st Dec., 2012). The State Biodiversity Board in collaboration with Punjab State Council for Science & Technology, mobilized students from all over Punjab to visit and experience this unique exhibition. However, even with the best of the efforts a large percentage of students and local community has been left out as the train covered only south western parts of state, besides Chandigarh. Many other biodiversity rich areas of state (especially villages in the border districts of western Punjab and Mand area, villages in the Kandi area and the shivalik foothills as well as entire population in Dhar Dunera, Majha and Doaba areas) has remain uncovered by SEBS. It is important that outreach activities are undertaken in these areas also to meet the inclusive awareness objective of SEBS. This will not only lead to capacity building of existing 22 district level BMCs and 32 village level BMCs, but will also create a mass movement amongst local population especially students.

Punjab Biodiversity Board, therefore, proposes to develop a 'Biodiversity Resource Centre on Wheels` to further extend the outreach and message of the SEBS to other parts of state, both urban and rural areas all across the state with special focus on shivaliks in most cost effective and efficient manner.

The Resource Centre on Wheels will be extensively used to create on site mass awareness before/during/after the visit of SEBS in Punjab. The Resource Centre will be used to undertake outreach activities for a broad section of communities in urban and rural areas by using different multimedia approaches for motivating & encouraging them to take concerted actions to conserve their local biodiversity. The students, Biodiversity Management Committees (BMCs), NGOs, communities and general public will be motivated and mobilized by Resource Centre on wheel to visit SEBS during its journey in Punjab.

The Centre on Wheels is proposed to be developed as a mobile exhibition mounted on a mini bus/ SUV and will be extensively used for conducting on site biodiversity educational programmes for BMC/TSG members, college & NGC eco- club school students, farming communities, NGOs and general public through different approaches of learning by panel/poster displays, interactive models, films, slide shows, puppet shows, exhibitions, games, group discussions, and for dissemination of communication material like pamphlets, brochures, booklets and postcards, etc.

The Structure

The resource centre will be built and designed on a mini bus or SUV chassis with 4x4 drive (to enable outreach activities in hilly areas). The sides of vehicle will be modified to store expandable information panels, which will remain closed and covered during travelling. Preferably four such side panels will be developed which could expand to hoist 32-40 posters with bilingual information on biological diversity of India & Punjab highlighting its richness, besides information on Acts & Rules. Information on various thematic areas such as benefits, threats, agro-biodiversity, livelihoods, climate change, traditional knowledge and policy & programmes would also be covered. The display material will be low cost and easily changeable so that the material can be changed as per requirement of the training programme/ exhibition. The contents of display material will also be decided through discussions with teachers, youth, educationists, experts, BMCs, NBA and MoEF.

The back of the vehicle will be used to display models and to screen films. The vehicle will also carry along with it a screen, speakers, LCD projector, generator, computer system, GPS public address (PA) system etc. and will be a one stop-shop for undertaking capacity building activities on various biodiversity issues saving lot of time and resources. It will provide an opportunity to the communities to access a ready resource for undertaking biodiversity conservation activities. Reference resource materials on various issues will also be placed inside the bus for those interested in more details on any particular issue.

The mobile centre will facilitate visits to areas where access has been very limited till date. The BMCs, local youth organization and proactive NGOs and University/ College volunteers will be involved and trained by PBB as local partners to carry out awareness programmes by utilizing the mobile biodiversity resource Centre in their respective districts/areas. The core team for organizing an activity will comprise one PBB personnel, 2 university/college volunteers and local partners for mobilization of participants. Part time services of a driver will be hired as per the requirement to execute the whole project at minimum operational cost. The operational & maintenance cost will be borne by Punjab Biodiversity Board. One such project is also being successfully implemented by Centre for Environment Education, Ahmedabad for creating Environment Education in various parts of Gujarat, sample pictures of which are as below:-



Picture 1: A view of side panel opening mechanism



Picture 2: Expandable side information panels



Picture 3: A view of on site interactive school student programme

It is hoped that the 'Biodiversity Resource Centre on Wheels` will work towards strengthening the existing fora and platforms concerning biodiversity created by SEBS and provide resources, support, guidance and expertise over a period of time to help such fora to conduct their activities more effectively.

Budget Proposal

| Sr. No. | Head | Rs. in Lacs |
|---------|--|--------------|
| 1. | Cost of mini bus/ SUV & modification of chassis | 15.00 |
| 2. | Refurbishing, designing and preparation of back and side panels | 4.50 |
| 3. | Computer, Projector, generator, screen, GPS, speakers, Public address system, films, etc | 2.50 |
| 4. | Printing of bilingual display material for panels and literature for distribution | 3.00 |
| 5. | Operational & Maintenance cost and driver at DC rate | 2.00 |
| | Grand Total | 27.00 |

**PUNJAB BIODIVERSITY BOARD
MGSIPA, COMPLEX, SECTOR-26
CHANDIGARH**

**RECEIPT AND PAYMENT ACCOUNT FOR THE YEAR ENDING 31.03.2012
(Audited)**

| Payments | 01.04.2011 to 31.03.2012 | | Receipts | 01.04.2011 to 31.03.2012 |
|-----------------------|---|----------------------|---|---|
| Expenditure | Amount (Rs.) | | Income | Amount (Rs.) |
| Salary and wages | 6,27,033 | | Tech. Sectt. (Grant from GoP) | 10,00,000 |
| Travelling & DA | 82,919 | | | |
| Telephone expenses | 5,500 | | | |
| R& M Vehicle | 1,88,133 | | Interest on Bank | 6,178 |
| Printing & Stationery | 1,73,611 | | | |
| Office Misc. Exp. | 8,500 | | Excess of Expenditure over income | 1,92,132 |
| Postage | 3,221 | | | |
| Insurance | 8,188 | | | |
| Advt. & publicity | 60,161 | | | |
| Dep. | 3,893 | | | |
| Audit fees | 23,090 | | | |
| Hiring of Taxi | 14,061 | 11,98,310 | | |
| Total | | Rs. 11,98,310 | Total | Rs. 11,98,310 |

**Manager (F& A)
PSCST
For Punjab Biodiversity Board**

**Member Secretary
Punjab Biodiversity Board**

DOCUMENTATION OF LOCAL BIODIVERSITY BY SCHOOL STUDENTS

Districtwise Winners

| S. | Distt. | 1 st Prize (Rs.1,000/-) | Student Name(s)/ Class | Guide Teacher | 2nd Prize (500/-) | Student (s) Name/ Class | Guide Teacher |
|-----|----------------------|---|--|--|--|--|--|
| 1. | Barnala | Govt. High School, Dhaula | Talwinder Singh 9 th Gurpreet Singh 9 th Gurvinder Singh 9 th Satnam Singh 8 th Mandeep Singh 8 th | Ms. Neha Bansal | Govt. High School, Cheema Jodhpur | Lovepreet Kaur (10 th) | Smt. Amrinder Kaur |
| 2. | Bathinda | Govt. Senior Secondary School, Mehma Sarja | Harinder Singh | Ms. Yogpreet Kaur | Govt. Sr. Secondary School, Jhumba | Charanjit Singh (9 th) | 1.Sh. Gurvinder Singh 2. Smt. Neelam Kumari |
| 3. | Faridkot | Govt. Girls Senior Secondary School, Jaitu | Rajvinder Kaur (11 th) | Ms. Milandeep | Govt. High School, Kot Sukhia | Gagandeep Kaur(9 th) | Ms. Dipti Bansal |
| 4. | Fatehgarh Sahib | Govt. Girls Senior Secondary School, Sirhind Mandi | 1. Avleen Kaur (11th) 2. Sukhjeet Kaur (11th) | Smt. Navjot Kaur | Govt. Sr. Secondary School, Brass | Pardeep Singh (12 th) | Smt. Baljinder Kaur |
| 5. | Firozpur/ Fazilka | Govt. Middle School, Sher Muhd. Mahigir | 1. Virender Singh (8th) 2. Manjit Singh (8th) 3. Santosh Rani (8th) 4. Sunita Rani (8th) | 1. Sh. C.M. Rai 2. Sh Ram Darshan | Govt. High School, Bhage Ke Uttar | Sunita Rani (9 th) | Smt. Saranjit Kaur |
| 6. | Gurdaspur | Govt. Girls Senior Secondary School, Dharampura Colony, Batala | 1. Harpreet Kaur 2. Diksha | Smt. Pawanjit Sandhu | XXXXXXXXXXXX | XXXXXXXXXXXX | XXXXXXXXXXXX |
| 7. | Jalandhar | GHS, Talwandi Bharon | Mandeep Sidhu 10 th | Sh. Narinder Singh | Govt. Girls Sr. Sec. School, Basti Sheikh | 1. Mansi (9 th) 2. Manesha (9 th) | Smt. Tejinder Kaur |
| 8. | Kapurthala | Govt. Girls Senior Secondary School, Sultanpur Lodhi | 1. Garima (11 th) 2. Raman (11 th) | Ms. Veena Prasher | Govt. Sr. Secondary School, Hussainpur | Anu (10 th) | Ms. Anupam Garg |
| 9. | Ludhiana | Govt. Senior Secondary School, Boparai Kalan | 1. Manpreet Kaur (12 th) 2. Lovpreet Kaur (12 th) | Sh. Jawahar Singh | Govt. High School, Bhaini Arain, | 1.Chamkaur Singh10 th 2.Harmanpreet 10 th | Sh. Sukhdev Singh |
| 10. | Mansa | Govt. Senior Secondary School (B), Boha | 1. Manpreet Singh (8 th) 2.Jagseer Singh (8 th) 3. Gurpreet Singh (10 th) 4. Rajinder Singh (10 th) 5. Gurvinder Singh (10 th) | 1.Sh. Parminder 2.Sh. Vishal Bansal | Govt. Middle School, Khillan | 1 Kulwinder Kaur (8 th) 2.Jagdeep Singh (8 th) 3.Harwinder Singh (8 th) 4.Veerpal Kaur (6 th) | Sh. Anupam Madan |

| S. | Distt. | 1 st Prize (Rs.1,000/-) | Student Name(s)/ Class | Guide Teacher | 2nd Prize (500/-) | Student (s) Name/ Class | Guide Teacher |
|-----|-------------------------|---|--|---|---|---|---|
| | | | 6. Gurpreet Singh (10 th) 7. Prince Garg (10 th) 8. Ganebh Singh (10 th) 9. Sunny Singh (10 th) 10. Khushvir Singh (10 th) 11. Tejinder Kumar (11 th) 12. Sarabjit Singh (11 th) 13. Risha Singla (11 th) 14. Gurmandeep Kaur (11 th) 15. Maninder Kaur (11 th) 16. Mamta Rani (11 th) | | | | |
| 11. | Moga | Govt. Senior Secondary School, Khosa Randhir | Pooja Rani (10 th) | Ms. Narinderjit Kaur | Govt. Senior Secondary School, Buttar | 1. Kamalpreet Kaur (10 th) 2. Harpreet Kaur (10 th) | Mrs. Sukhwinder Kaur |
| 12. | Muksar | Govt. Senior Secondary School, Mehmood Khera | 1. Kuldip 11 th 2. Hazari Lal 11 th 3. Harvinder Singh 11 th 4. Mandeep Singh 12 th 5. Navjit Singh 12 th 6. Babli Rani 11 th 7. Balak Singh 11 th | S. Puran Singh Manes | XXXXXXXXXXXX | XXXXXXXXXXXX | XXXXXXXXXXXX |
| 13. | SAS Nagar | Govt. Senior Secondary School, Daulat Singh Wala | Komal Sharma (9 th) | Ms. Shashi Singla | Govt. High School, Jawaharpur | 1. Amandeep Singh 10 th 2. Devdutt 10 th | Sh. Ashish Sharma |
| 14. | SBS Nagar Nawanshahr | Govt. Middle School, Saloh | 1. Mandeep Kaur 8 th 2. Arti 7 th 3. Naresh 8 th 4. Anshu 7 th 5. Sunny 7 th 6. Priyanka 7 th 7. Rahul 8 th | Sh. Sanjiv Kumar | Govt. Girls Senior Secondary School, Chak Bilga | 1. Jaskarandeep Kaur (8 th) 2. Manjot Kaur “ 3. Parveen Pooja “ 4. Navdeep Kaur “ 5. Amanpreet Kaur “ 6. Jaspreet Kaur “ 7. Mamta “ | Ms. Harvinder Mann |
| 15. | Pathankot | Saheed Makhan Singh, Govt. Girls Sr. Sec. School, Pathankot | 1. Shallu 2. Rashi 3. Anju | 1. Rajeshwar Singh 2. Smt. Gurpreet Kaur | Govt. Sr. Secondary School, Boha | Jyoti Devi (9 th) | 1. Smt. Jeevan Jyoti 2. Smt. Surekha |
| 16. | Patiala | Govt. Sr. Secondary School, (B) Sanour | 1. Mona Rani (12 th) 2. Navdeep Kaur (12 th) | Smt. Neeraj Vaid | Govt. Senior Secondary School, Nogawan | 1. Manjit Singh (12 th) 2. Varinder Singh (12 th) | Ramesh Chand Tomar |
| 17. | Ropar | Govt. Senior Secondary School, Morinda | 1. Ravinder Kumar (9 th) 2. Kuldip Singh (9 th) | Smt. Mandeep Kaur | Govt. Girls Senior Sec. School, Ropar | Inderpreet Kaur (12 th) | Mrs. Amarjeet Kaur |

| S. | Distt. | 1 st Prize (Rs.1,000/-) | Student Name(s)/ Class | Guide Teacher | 2nd Prize (500/-) | Student (s) Name/ Class | Guide Teacher |
|-----|------------|--|---|---------------------|------------------------------------|---|--|
| 18. | Sangrur | Govt. Sr. Secondary School, Gadhuan | 1. Hardeep Kaur (10 th) 2. Rajinder Rani (9 th) 3. Shinderpal Kaur (8 th) | Sh. Prem Sarup | Govt. Sr. Secondary School, Mehlan | 1.Randhir Kumar 11 th 2.Jasvir Singh 11 th 3.Kulwinder Kumar 11 th 4.Navdeep Kaur 11 th 5.Charanjit Kaur 11 th | 1. Parminder Kumar 2.Dimple Manchanda |
| 19. | Tarn Taran | Govt. Senior Secondary School, Chola Sahib | Amarjeet Singh (9 th) | Smt. Dalvinder Kaur | Govt. High School, Boparai | Kirandeep Kaur (10 th) | Smt. Ramandeep Kaur |

State Level Winners

| Sr. No. | Distt. | 1st Prize (₹ 10,000/-) | Student Name(s)/ Class | Guide Teacher |
|---------|-----------------|---|---|---|
| 1. | Patiala | Govt. Senior Secondary School (B), Sanour | 1. Mona Rani (12 th) 2. Navdeep Kaur (12 th) | Smt. Neeraj Vaid |
| | | 2nd Prize (₹ 5,000/-) | | |
| 2. | Ludhiana | Govt. Senior Secondary School, Boparai Kalan | 1. Manpreet Kaur (12 th) 2. Lovpreet Kaur (12 th) | Sh. Jawahar Singh |
| | | 3rd Prize (₹ 2000/-) | | |
| 3. | Mansa | Govt. Senior Secondary School (Boys), Boha | 1. Manpreet Singh (8th) 2. Jagseer Singh (8th) 3. Gurpreet Singh (10th) 4. Rajinder Singh (10th) 5. Gurvinder Singh (10th) 6. Gurpreet Singh (10th) 7. Prince Garg (10th) 8. Ganebh Singh (10th) 9. Sunny Singh (10th) 10. Khushvir Singh (10th) 11. Tejinder Kumar (11 th) 12. Sarabjit Singh (11 th) 13. Risha Singla (11 th) 14. Gurmandeep Kaur (11 th) 15. Maninder Kaur (11 th) 16. Mamta Rani (11 th) | 1. Sh. Parminder Tangri 2. Sh. Vishal Bansal |

Biodiversity Rich Areas/Sites identified in Punjab

- Areas falling outside Harike Wildlife Sanctuary from Village Gagrewal to Goindwal Sahib on river Beas as dolphin heritage site for conservation of dolphins.
- Patti and Ferozpur area for native livestock species like Nili Ravi
- Mand area for conservation of Hog Deer population.
- Sultanpur Lodhi area and area between Nangal and Ropar for conservation of fish biodiversity.
- Inami Baag in block Bhunga, district Hoshiarpur for elite mango varieties.
- Aam Khas Baag and Ram Baag in district Amritsar
- Baradari Garden, Patiala for Simbal Tree & Banayan Tree which are about 120 years old and Ferns.
 - Shalimar Garden, Kapurthala
 - Northern parts of Shivaliks as biodiversity rich pockets.
 - Dhar block in district Pathankot & Nurpur Bedi area in Rupnagar district for Vultures, Indian Python and Hedge hog.
 - Chatpatt-Bani in district Pathankot especially as it is being conserved as a sacred grove.
 - Pandori (area between Keshopur Miani and Kahnuwan) in district Gurdaspur as a sacred grove
 - Area falling outside Kathlaur Kalsian Sanctuary along Ranjit Sagar Dam.
 - Keshopur Miani & Magamudian in district Gurdaspur for Sarus Cranes.

Executive Summary

The variety of genes, species and ecosystems which encompass populations, communities & habitats constitute biological diversity. It forms the foundation upon which human civilization depends and is essential for maintaining the basic life processes and for performing environmental services. Population pressure, industrialization, intensive agricultural and extensive use of natural resources are, however, leading to loss of biological resources.

India accounts for 7.8% of the global recorded species and is one of the 17 mega diverse countries of the world. Four biodiversity hot spots of world (out of 35) exist in India. The country is estimated to house about 45,000 plant species and 89,442 animal species representing 12.5% of the world's flora and 6.6% of fauna. The Biological Diversity Act, 2002 has been enacted by the Govt. of India to promote conservation and sustainable of biological resources.

Punjab is primarily an agricultural state with about 84% land area under agriculture. The state harboured considerable genetic variability in the past, both, in wild and cultivated areas. However, this has reduced over the years due to changes in cropping pattern, extensive & intensive farming and higher dependence on HYVs. Though the state has only 6% area under forests, yet a large variety of flora & fauna has been recorded from Shivaliks and wetlands. Data indicates the presence of 397 species of algae, >560 species of fungi, 21 species of lichens, 34 species of bryophytes, 21 species of gymnosperms and 1939 species of angiosperms in the state. Faunal diversity includes 112 species of fishes, 15 species of amphibians, 35 species of reptiles, 442 species of birds and 43 species of mammals, besides, large number of invertebrates. Prior to the green revolution, 41 varieties of wheat, 37 varieties of rice, 4 varieties of maize, 3 varieties of bajra, 16 varieties of sugarcane, 19 species/varieties of pulses, 9 species/varieties of oil seeds and 10 varieties of cotton were reported to be in use in Punjab. Data indicates that out of 49 post green revolution varieties of wheat released by PAU, only 3 are widely used. Similarly, out of 27 varieties of rice released, only 9 are currently in use.

The state has done remarkably well in the field of agriculture and is now laying emphasis on promoting industrial growth. Presently, there are 162,559 small scale and 373 large and medium scale industries. The Industrial production has more than doubled in both, small scale industries (from Rs.183.24 billion in 2001 to Rs. 418.96 billion in 2010) as well as medium/large scale industries (from Rs. 265.76 billion in 2001 to Rs 583.12 billion in 2010). Various industrial sectors like processed food, rice, yarn & textile, hosiery, pulp & paper and sports goods depend upon biological resources which are being cultivated and are normally traded. The share of industrial sector (Secondary Sector) to State Gross Domestic Product has increased from 20% in 1980-81 to 29% in 2009-10. There are also 255 registered herbal units operating in the State, besides many unregistered units. These are extensively utilizing medicinal plants and herbs which are obtained from various parts of Punjab and adjoining states.

No systematic study has been carried out in the State to assess the utilization and marketing of biological resources, which are generally not normally traded and are exempted from provisions of the Biological Diversity Act, 2002 provided they are traded as commodities, as notified by Govt. of India under section 40 of the Biological Diversity Act, 2002 (commonly referred to as 'normally traded commodity' list). The present study gives a brief overview of various bioresources based industries in the state with special focus on industries using medicinal and aromatic plants, which are not included in the above notification, to assess their economic potential so as to promote their conservation and sustainable use. Extensive field visits were made to collect primary as well as secondary data.

Bioresources based industry in Punjab

Punjab's large agricultural base gives it a competitive advantage in various agrobased industries like food processing, textiles, paper, leather, etc. Further, bioresources (including medicinal and aromatic plants) are also being used as raw material by some pharmaceutical & nutraceutical industry in the state. Most of the raw material being used by these industries is either being cultivated or is covered under the above referred notification of the Ministry of Environment and Forests, Govt. of India. The Ministry had exempted 190 biological resources including 35 medicinal plants, 28 spices and 127 other crops from the purview of the Biological Diversity Act, 2002. Prior permission of the National Biodiversity Authority would not be required for export of these 190 items. However, certain raw materials used by the industry are obtained from the wild and are covered under the provisions of the Biological Diversity Act, 2002.

Data indicates that out of the total 373 large/medium units (LMU) in the state, 310 units (83%) are utilizing bio-resources as major raw material. These include 142 units of food products & beverages (45%), 96 textile units

of both, natural & synthetic fibre (31%) and 33 paper & paper products units (11%). The maximum bioresources based LMUs are located in district Ludhiana (77) followed by districts Patiala (59), and Mohali & Amritsar (32 each). Data also indicates that 13% (20,940) of the total Small Scale Units (SSU) are bioresource based enterprises. These include food products & beverages (6081), leather & leather products (4263), textiles (1425 approx.), wood products (2783), furniture (2621), paper & paper products (754), rubber products (647), hosiery & garments 394), pharmaceuticals & botanicals (212) and tobacco products (7). Ludhiana (4292), Amritsar (2816), Sangrur (2803) and Jalandhar (1926) are leading districts for bioresources based SSUs in the state.

Punjab's food and beverage industrial sector covers grain processing, alcoholic beverages, fruit and vegetable processing, meat and poultry, milk & milk products, sugar & edible oil, soya based products, etc. There are total 6223 food and beverage industries in state consisting 142 LMUs and 6081 SSUs, and maximum units are situated in District Sangur (841), Ludhiana (627) & Amritsar (615). Eighty one per cent units are manufacturing grain/cereal based food products & animal feed. The textile sector contributes about 19% to the total industrial production and about 38% to the total exports from Punjab. The sector is also one of the largest employment provider and accounts for almost 60% of industrial employment in the state including the largest employment providing sector to women. The textile sector is strong on all aspects of the value chain, i.e., from the raw material stage to the finished products stage. Natural fibers are being used by 45% of LMU/SSU units, whereas 55% units are using artificial fibers, which are cheaper as compared to natural fibers. Out of a total of 3264 textile units (3168 SSU and 96 LMU) in the state, over 1460 units are bioresources base. More than two third of textile units (76%) are manufacturing knitted and crocheted fabric & articles and remaining 24% are involved in spinning, weaving and finishing. Ludhiana is one of the important centres of hosiery industry of India for cotton, woollen and synthetic knitwear. Ludhiana hosiery industry caters to about 90% of the total demand of woollens besides, being leading exporter to USA, Europe and Middle East.

The leather industry in Punjab is facing a shortage of quality hides even though cattle head count of the state stands only second to Uttar Pradesh in the country. Presently, more than 40% of the raw material is being purchased from outside the state. Leather products worth Rs.2.17 billion and Rs.2.34 billion have been exported mostly to European countries from the state in the years 2009 and 2010, respectively. There are 4268 leather goods industries operational in the state comprising 5 LMUs and 4263 SSUs. Data indicates that 653 rubber manufacturing units are operational in the state consisting of 647 SSUs and only 6 LMUs (in Ludhiana). The natural rubber accounts for 33% of the total bioresource base of the industry. There is an acute shortage of natural rubber in Kerala owing to ever growing demand leading to upswing in its prices. The unprecedented hike in natural rubber prices in last few years coupled with fall in demand of some rubber-based products, has put the rubber industry of Punjab in jeopardy. About 2/3rd of rubber units (74%) are involved in the manufacturing of rubber tyres & tubes, while rest (26%) are manufacturing rubber footwear.

There are 797 paper units in the state, out of which, 33 are LMUs and 764 are SSUs. The paper industry of the state is mainly utilizing waste paper, wood pulp, agri-residues like wheat straw and kana grass (sarkanda), etc. as raw materials for manufacturing paper products. However, the industry is quite concerned about the ever increasing prices and fluctuations in supply of raw materials. Even though the state has a very small area under natural forests (6%) and agroforestry, still, 2783 wood product units and 2621 furniture making units are functional in the state. Eucalyptus and poplar are being used as main raw materials by plywood industry. The furniture units extensively use Dalbergia, Teak, Bamboo, Cane, Deodar, Mango, Neem etc for making different type of furniture articles. However, Dalbergia and Teak are generally preferred for making quality furniture. There are 7 small scale tobacco manufacturing units in the state, mainly producing snuff, katha, chewing lime, etc. Most of the raw material is being brought from other states though *Acacia catechu* is available in the Shivaliks. There are 268 registered units of cottage and village industries in the state with an employment of about 1650 workers. Out of these, 121 units are utilizing various kinds of bioresources as raw material.

Herbal industry in Punjab

Worldwide, between 50,000 and 80,000 plants, mostly flowering, are used medicinally. About 80% population of developing countries relies on plant based products for their pharmaceutical and nutraceutical needs and there is a global resurgence in traditional and alternative health care systems, resulting in world herbal trade of about US\$ 120 billion, which is expected to reach US\$ 7 trillion by 2050. India has approximately 17,500 species of flowering plants. Out of these, 6000-7000 species are estimated to have medicinal usage in folk and documented systems of medicine like Ayurveda, Siddha, Unani and Homoeopathy. About 960 species of medicinal plants are estimated to be in trade, of which, 178 species have annual consumption levels in excess of 100 metric tonnes. The Indian medicinal plants and their products account for exports of about Rs. 10 billion. There are nearly 9,500 registered herbal industries along with many unregistered cottage-level herbal units in the country, which depend upon the continuous supply of medicinal plants for manufacture of herbal medical formulations based on Indian Systems of Medicine. Broadly nine categories of products are being obtained by industrial processing of medicinal plants. These include new drugs, phytopharmaceuticals, health and immunity

enhancing products and nutraceutical, cosmetics, intermediates for drug manufacturing, galenicals, etc. Significant quantities of medicinal plant resources are also being consumed in the country at the household level through traditional healers and practitioners.

About 800 species of medicinal plants are used by industry out of which majorly 20 species (2.5%) are being cultivated. Over 90% of the species are mainly collected from the wild. Further, over 70% of these plant collections involve destructive harvesting practices and pose a definite threat to the diversity of medicinal plants in the country. Marketing of medicinal plants is inefficient, informal, secretive and opportunistic. As a result, the raw material supply situation is shaky, unsustainable and exploitative.

There are 255 registered herbal units operating in Punjab, besides many unregistered herbal units, which are utilizing botanicals to prepare various product formulations (with or without the species included in the afore mentioned notification of the Ministry of Environment & Forests, Govt. of India). Out of these 180 units were found to be functional, out of which limited data has been provided by 121 units only (67.2%) from 15 districts (out of 20 districts). These 121 units are using 919.9 MT/annum of raw plant materials. However, no data has been provided w.r.t. areas/sites of collection and volumes of certain important species obtained from the wild which are currently being used by the industry. The district wise usage of plant species by pharmacies/herbal units in Punjab ranges from 279 kg/annum in district Mansa to 527 MT/annum in district Amritsar, which is 57% of the total usage in the state. Other districts with high consumption value are Ludhiana (>153.6 th. kg/annum), Sangrur (>80 th. kg/annum) and Jalandhar (>68 th. kg/annum). These account for 17%, 9% and 7% usage respectively. Rest all districts are using raw material in the range of 3% to 1%. The maximum (28) herbal based industrial units are functioning in district Amritsar followed by 26 units in district Ludhiana, 17 units in district Jalandhar and 14 units in district Sangrur. Data about the harvesting and processing of medicinal plants by hakims, vaid, SHGs and communities is not available.

None of the industries provided any information on direct collection sites. It was informed that raw material was being procured from the market/traders and not collected directly. Such traders operate in Majith Mandi at Amritsar, collection center at Pathankot and in other states as well. Majith Mandi is known as the trade hub of some of these biological resources. Raw materials from Punjab and nearby states is collected here and categorized for export and/or domestic consumption. Fifty four dealers/traders exporters are operating in Majith Mandi. An estimated 22,000 Metric Tonnes of botanical's (mainly 67 species) are being annually traded from Majith Mandi. Many stakeholders with divergent interests are involved in the marketing of medicinal plants in state and organized marketing, standardization and quality control practices are lacking.

Industry wise data indicates that the ten highest herbal raw material consuming units of the state are located in District Amritsar (8), Ludhiana(1) and Fatehgarh Sahib(1) and are collectively utilizing 524,481 kg of raw material per annum, which is about 57% of total herbal usage in the state. Pharmed, Amritsar (131,100 kg), Hoap Industries, Ludhiana (111,170 kg) and Himachal Drug Pharma, Amritsar (58,151) are using maximum botanical raw material. A total of 503 plant species are being used in the state, out of which, 334 species (66%) occur in Punjab and the rest are being brought/collected from other states. Data reveals that of the 334 plant species from Punjab, 127 are herb species, 110 are tree species, 63 are shrubs, and 34 are climbers. Out of total 503 species used, only 82 species are exempted from the provisions of the Biological Diversity Act, 2002 (as these are included in the list of 'normally traded commodities' notified by Govt. of India). Therefore, prior permission of National Biodiversity Authority is required for export of rest of the 421 plant species or their products being traded from the state. The most used medicinal plants are *Aloe barbadensis* (175 Tons/annum), *Emblica officinalis* (38 Tons/annum) and *Terminalia chebula* (25 Tons/annum). Data points that out of the 10 maximum used plant species, six species namely, *Terminalia chebula*, *Commiphora wightii*, *Tinospora cordifolia*, *Tribulus lanuginosus*, *Terminalia arjuna* and *Terminalia belerica* do not fall under 'normally traded commodity list', but are very important species used by the industry. Other important species excluded from the normally traded commodities list which are being collected from the state include *Saraca asoca* (11311 kg/annum), *Boerhavia diffusa* (10979 kg/annum), *Sesamum orientale* (10951 kg/annum), *Asparagus racemosus* (7314 kg/annum), *Psoralea corylifolia* (10951 kg/annum), *Mucuna pruriens* (5290 kg/annum), *Eclipta prostrata* (5290 kg/annum), etc. Conservation of their habitat and regulated harvesting needs to be promoted to ensure their long term sustainability.

Two plant species, namely *Tecomella undulata* and *Withania coagulans*, being used by herbal units have been identified as threatened species in the state. *Tecomella undulata* has been identified as an 'endangered species' and *Withania coagulans* as 'vulnerable species' as per IUCN Red Data List. Only 10 kg/annum of *Withania coagulans* is used in the state, but the usage of *Tecomella undulata* is quite high (790 kg/annum). Since these are threatened species of the state, their trade and harvesting needs to be specifically monitored. Further, special focus needs to be given on conservation of the habitat of their two species.

Information about the annual turnover was provided by only 74 units (61%). The total annual turnover of these units collectively amounts to approx. Rs.28 crore (280 million). Only 7 units had a turn over of more than one crore per annum. The turn over of 10 units ranged between Rs.50 lac to Rs.1 crore, 32 units had a turn over ranging between Rs.10 to Rs.50 lac and 25 units showed annual turn over of less than 10 lac. Data on product details reveals that these units produce ayurvedic and unani medicines (tablets, capsules, powders, medicinal oils etc.) nutraceuticals (teas, syrups, tonics and drops), cosmetics (face packs, shampoos, gels, creams, face powders, hair oil, henna & herbal dyes, soaps & toiletries, etc.) and pickles & food supplements (juices, sherbats, etc.). Twenty four units have also provided names of traders from where raw material is being purchased. This includes 22 traders from Punjab and 10 traders from Delhi, Uttarakhand, Haryana and Madhya Pradesh.

Bioresources based un-registered cottage/tiny units

About 500 unregistered tiny and cottage units based on biological resources exist in the state with a large percentage occurring in the Shivalik area alone due to higher availability of non-timber forest produce (NTFP), wild medicinal plants, etc. These units provide livelihood to local communities in about 300 villages in the Shivalik area falling in five forest divisions namely, Ropar, Garhshankar, Hoshiarpur, Dasuya and Pathankot. The local population accesses these bio-resources, both from the forests and uncultivated areas as raw material.

A pilot study was got conducted under the present project to assess the extent of bio-resources used in such units, identify specific areas from where these resources were being collected, extent of involvement of the local communities, list of products and production value. As per the survey, a total of 371 Self Help Groups (SHGs) with about 5000 members were found to exist in 223 villages. These SHGs were engaged in various income generation activities and collectively made an earning of about Rs.44 lac per annum during the study period. The survey indicates that mainly 22 categories of livelihood activities were being taken up through these non-registered units, out of which at least 10 were based on resources which were not normally traded i.e. rope making, leaf plate making, basket, chatai, broom making units, medicinal plant units, pickle making units based on wild fruits, chyavanprash making units and units involved in trade of wheat straw and vermicomposting.

The way forward

The study needs to be supplemented with information from traders on specific sites of collection of raw biological materials, especially plants which are either threatened or used in large quantities. The extent of plant usage by cottage/tiny industry, both in the organized and unorganized sectors and access by vaid and hakims also needs to be assessed to help define strategies for their conservation and sustainable utilization to implement the Biological Diversity Act, 2002 in the state. Information on associated Traditional Knowledge will also help to strengthen the 'Access and Benefit Sharing' mechanism and help local communities recognize the economic benefits of protecting biodiversity.