

Minutes of the First National Level Discussion **Meeting on**

Development of Methodology for Economic Valuation of Bio-resources

13th July, 2013 at National Biodiversity Authority (NBA)

The First National Level Discussion Meeting on “Development of Methodology for Economic Valuation of Bio-resources” was held at Conference Hall, National Biodiversity Authority (NBA), Chennai on 13th July, 2013 from 10.30 am to 4.00 pm. A background note was circulated to the participants well in advance. The background note contains the following information:

- Access and Benefit Sharing (ABS)
- ABS Process in India
- ABS: UNEP GEF MoEF Project in NBA
- Bio-resources from Selected Ecosystems (Forests, Wetlands and Agriculture) and their Economic Significance Paradox in Valuation
- Why the Real Value Estimation of Bio-resources is Significant?
- Development Process of the Valuation Methodology of Bio-resources (Evidences from Literature and Lessons from Industrial Visits and Discussions)
- Possible / Draft Methodologies for valuation of Bio-resources:
- Value Chain Analysis:
- The “Maximum Willingness to Pay” Approach:
- Application of the Appropriate Economic Instruments: (tax, cess, charges, royalty etc.)
- Minimum Support Price for Bio-resources
- Collectors’ Willingness to Accept and Minimum Livelihood

The expert members who participated in the meeting includes:

1. Dr. U. Shankar, Emeritus Professor, Madras School of Economics, Chennai
2. Dr. Paul Appasamy, Visiting Professor, Madras School of Economics, Chennai
3. Dr. Madhu Verma, Professor, Indian Institute of Forests Management, Bhopal
4. Dr. G. Haripriya, Associate Professor, Indian Institute of Technology, Mumbai

5. Dr. S. Suneetha, United Nations University, Japan (based in Chennai)
6. Dr. K. S. Neelakandan, Rtd. Forest Officer, Chennai
7. Dr. Ajit Menon, Associate Professor, Madras Institute of Development Studies, Chennai.
8. Dr. Hemant K Gupta, Joint Member Secretary, Himachal Pradesh Biodiversity Board, Shimla.

Dr. Balakrishna Pisupati, Chairman, NBA welcomed the expert members and briefly mentioned about the ABS project in NBA, issues on the ABS particularly fair and equitable benefit sharing, details about the applications received by NBA and its complexities. He also expressed about the need and urgency in arriving the appropriate methodology for valuing bio-resources for successful implementation of the ABS mechanism.

After the welcome / introductory remarks of the Chairman, Prakash Nellyat, Project Associate (Economic Valuation), UNEP-GEF-ABS project made a presentation on the “Valuation of Bio- resources for Operationalizing Access and Benefit Sharing Mechanism: Search for Methodology”. The presentation highlighted: Biodiversity degradation and the emergence of Convention of Biological Diversity (CBD), Access and benefit sharing objective of CBD, Nagoya Protocol, ABS process in India, UNEP GEF MoEF (ABS) Project in NBA and its significance in strengthening the Biological Diversity Act and Rules, Linkages between biodiversity and bio-resources, Valuation of bio-resources: paradox and challenges, Property rights issues of bio-resources, Significance of the real value estimation in ABS and the possible/draft methodologies for valuation of bio-resource.

The methodology drafted for bio-resources valuation includes: (a) Value Chain Analysis, (b) The “Maximum Willingness to Pay” Approach, (c) Application of the Appropriate Economic Instruments: (tax, cess, charges, royalty etc.), (d) Minimum Support Price for Bio-resources and (e) Collectors’ Willingness to Accept and Minimum Livelihood. The Presentation of Prakash concluded that; “developing an appropriate methodology for valuing bio-resources, which are used for commercial purposes, is extremely important for signing the ABS agreements, and charging the ‘real value’ for bio-resources from the users. In this regard, the possibilities in considering the above draft methods and / or identifying new methods should be the main agenda of the First National Level Discussion Meeting”.

Dr. Ishwar Poojar, Project Manager, UNEP-GEF ABS project, NBA suggested the committee to come up with simple valuation methodologies or formulas, which can be used by the BMCs in valuing the bio-resources in their jurisdictions. Later Project Manager invited Dr. Sankar to chair the sections of the day.

After the presentation, the expert members discussed various issues and methodologies in bio-resources valuation. The discussion section was chaired by Dr. Shankar. In the discussion section the members expressed their views, which are summarized below:

Dr. U. Shankar

- There is no generalised formula for valuing bio-resources.
- Value or supply chain analyses for bio-resources have high scope.
- There is huge uncertainty in the entire process of bio-resources valuation and benefit sharing.
- Negotiation and benefit sharing will materialize only when the product is commercialised.
- Providers are not aware about the potential value and commercial scope of bio-resources.
- Scientists are more aware about the potential value of bio-resources.
- Sellers' or providers' "Traditional Knowledge" aspects should consider in valuation.
- Institutional solutions like corporates has significant role in ABS.
- Benefits sharing should emphasise both monetary and non-monetary manner.
- Information asymmetry plays a significant role and became a major constraint in bio-resources valuation.
- Negotiation between the providers and users of bio-resources is important. Further they should also share the risks mutually.
- Providers can demand an exclusive price for bio-resources, which they exchange.
- NBA should develop and manage "taxonomic database" for all biological resources in the country. This database should contain the information on current status of bio-resources, its sustainability, users' rights etc.
- Certain bio-resources or products may not be significantly valuable, where cost of collection is greater than the benefits.

- Value of substitute products (wherever possible) may consider an option in deriving the real value of bio-resources.
- Government monopoly on bio-resources should emphasize. This monopoly rights may help in demand better price for resources.
- For identifying and determining the future potential value of the resources, institutional collaboration is required. Concerned government organizations on biodiversity management, researchers and users (companies and other business entrepreneurs) should come together in the negotiation process.

Dr. Madhu Verma

- Need to consider the approaches followed by the TEEB reports in valuation.
- The ecosystem services of biodiversity are completely left out in the present study. Even if bio-resources valuation is important, certain considerations need to give to ecosystem services.
- Valuation approach is similar to the methodology adopted for the estimation of NPV of the forests conversion in India.
- Stakeholders' engagement in valuation and negotiation is significant.
- Need to consider the non-negotiable aspects of ecosystems too in the valuation exercises.
- ABS agreements can consider or make as an incentive mechanism. The companies who complies the ABS norms can give tax exemptions and other appropriate incentives.
- Payment for ecosystem can consider as an option for biodiversity management.

Dr. Suneetha

- Uncertainty factors is a major issues in the entire process of bio-resources valuation.
- However one can overcome these issues through the “probability” considerations and estimations.
(Dr. Sanker responds that in biodiversity case the subjective probability is important but not able to bring in public domain)
- Certain bio-resources (species) are unique and traditional knowledge also plays a significant role in its identification and extraction.

- Information about the resources and the use of the resources is crucial and should be considered with due importance in the methodology.
- ABS as an incentive option has lot of potential. Certification and labelling can use as a criteria.
- The non-monetary benefits and its sharing are more significant in certain cases.
- Universities and industries interaction is required to reveal certain issues underline with the ABS and valuation of bio-resources (Eg. The Griffith University and industrial collaboration in Australia).
- We can't develop or consider a single formula to value the bio-resources for signing the ABS agreements.
- Based on the product and situations in the country appropriate and suitable methodology need to develop.

Dr. Haripriya

- Uncertainty issues in bio-resources valuation is crucial and a major challenge.
- Bio-resources are state resources; hence state is having a monopoly on the resources.
- State should follow an approach; “bio-resources is state (my) resources, you are using hence you pay for it”.
- Most of the bio-resources dos not have substitutes.
- Scarcity rent and information rent play a crucial role in real value estimation.
- Information rent contains the details on cost of production, financial revenue for the bio-prospecting and probability hit.
- “Willingness to Accept” approach for estimating the real value of bio-resources (one of the approaches proposed in the background note) is ‘more notional’ type approach, hence least acceptable.
- Bio-resources valuation approach should be based on;
 - (a) Product
 - (b) Market alternative
 - (c) Monopoly rent
 - (d) Factor cost method
- Cost based information can collect from the company's balance sheet and annual reports.

- Depending on a general formula for valuing different bio-resources having different economic potential is ‘not appropriate’. We should develop case specific formulas.
- Marginal value of the input into the final product through factor cost analysis is an appropriate approach.
- For unique bio-resources, 100% negotiation is easily possible.

Dr. Neelakantan

- Bio-resources, particularly forest products are under-priced.
- Bio-resources extraction from common lands is taken place legally as well as illegally.
- For legally collected forest products, prices were fixed by the Forest Department.
- However this price does not represents the economic value or the true value of the resources.

Dr. Paul P Appasamy

- For handling the ABS application, NBA should follow a parallel approach, which followed by the Pollution Control Board on industries.
- Bio-resources use for Research and Development (R&D) and commercial uses need to be considered differently.
- Generally, R&D collection would be in a limited quantity and should not affect the sustainability of the resources and its stock.
- Hence the value for the bio-resources collected for R&D can be brought under the flat-rate.
- Bio-resources used for commercial use should be valued through the “value chain analysis”.
- Bio-resources come for ABS agreements need to categorised based on the nature of the resources and its purpose of usages in the company.

Dr. Ajit Menon

- Biodiversity/ecosystem services also need to be considered in the valuation exercises.

- It remained unclear as to what formula would be used to share resources with the community.
- Whether existing laws would give communities enough rights to claim benefit sharing?
- What about protected areas and the bio-resources within these areas?

Dr. Hemant Gupta

- Discussed about the interrelationship between Forest Management System, Forest Act and the Biological Diversity Act.
- Highlighted the bio-resources in Himachal Pradesh and its potential use in industrial sector.

Dr. Thomson Jacob

- Bio resources processes and value addition can take place in abroad also. Such case how to capture the value chain?

Based on the presentation and discussions the committee unanimously accepted that it is significant to develop case specific and / or separate formulas for valuing bio-resources. In this context bio-resources are categorised under 6 heads and separate possible methodologies / approaches had drafted (see the table). Further for examining the practical significance of the methodology, the Chairman, NBA proposed:

- (a) To undertake trial exercise with 4 / 5 ABS applications received and processed by the NBA
- (b) Conduct a field level exercise with 2 / 3 bio-resources based industries with the collaboration of SBBs and BMCs in our project state.

Table








Development of Methodology for Valuing Bio-resources

Methods Derived from the First National Level Discussion Meeting (13th July 2013)

| | Category of Bio-resources | Possible Methodological Approach | Payment Detail |
|---|---|---|---|
| A | Bio Pharmaceuticals (modern drugs) | Scarcity Rent (SR), Information Rent (IR) - share a proportion attributable to the product. | Initial payment + payment at the time of product development + payment at marketing stage. |
| | (Population status, Rare Endangered and Threatening (RET), Abundant, Endemic) | Endemic Rent (ER) | Monetary + Non- Monetary (for endemic and RET) |
| B | Bio-technology (Seed / Agriculture Related), Land races, Microbes, | Information Rent (IR) - share a proportion attributable to the product. | Initial payment + payment at the time of product development + payment at marketing stage Monetary + Non- Monetary (for endemic and RET) |
| C | Crop protection products | Information Rent (IR) - share a proportion attributable to the product. | One time |
| D | Botanicals (AYUSH) | Based on the proportion of Net Present Value (NPV) of the profit x the contribution of input to the out put | One time |
| E | Nutraceuticals / Personal Products cosmetics | Based on the proportion of NPV of the profit x the contribution of input to the out put | One time |
| F | Academia / R&D (non-commercial scientific | Onetime fee + renegotiation change in intent | One time |

research)

**Expert Committee Meeting on 13th July, 2013 at NBA, Chennai
(Economic Valuation)**

| Sl. No | Name and Address | Signature |
|--------|--|---|
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| 2. | DR. CHRIS) MADHU VERMA PROFESSOR, Indian Institute of Forest Management, Bhopal. (9425811479, 9300803479) |  |
| 3. | U. SANKAR Professor, Madras School of Economics, Rajpet Road, Chennai-25 | U. Sankar |
| 4. | PAUL APPASAMY Madras School of Economics Chennai - 600 025 | Paul P. Appasamy |
| 5. | DR K. S. NEELAKANTAN IFS (Retd) New No 27 old no 8, Sivaji Street. T. Nagar - CHENNAI. 600 017 99590 33 209 |  |
| 6. | C. Thomson Jacob UNEP - GEF ABS Project. National Biodiv. Authority. |  |
| 7. | G. S. Haripriya Associate Professor IIT Bombay, Powai, Mumbai-76 |  |
| 8. | Dr. Hemant Gupta (9445020465) Member Secretary, H.P. Biodiversity Board. 34, SOA Conna, Kasimihill, Sion. |  |
| 9. | Runeetha. M. S., #1, Anna Apt, No. 5 (New), 6 th Cross, Trustpuram, Chennai- |  |

**Expert Committee Meeting on 13th July, 2013 at NBA, Chennai
(Economic Valuation)**


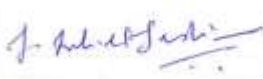
| Sl. No | Name and Address | Signature |
|--------|---|---|
| 10 | Prakash Nelligat NBA |  |
| 11. | J. Juliet Justice Project Consultant NBA, Chennai |  |
| 12. | Chairman, NBA | |
| 13. | Dr. Behwar Poojar, Manager NBA, Chennai | |
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Photo Gallery



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Remarks by Prof. U.Sankar

1. We need completion of taxonomy for bio resources giving biological characteristics; current status (rarity, uniqueness, sustainability); potential value based on current science; availability of substitutes
2. Rights over resources: state, private, common; if state nature of rights given
3. (a) Resource marketed (perfect or imperfect market);
(b) Marketable but not marketed (high transaction costs of creating and operating markets because of dispersed small suppliers, asymmetric information; and
(c) non-marketable
4. Uncertainty about finding the value of the resource because of long time between acquisition and commercialization of derived product, resource passing through many hands, low probability of developing commercial product and its success.

For most commonly available bio resources which have substitutes simple ABS mechanism like certain percentage of gross value of output / value added is sufficient. For 3(a), if market is imperfect formulate policies. Market imperfection may be due to small number of buyers or sellers, asymmetric information, or uncertainty about product quality.

For 3(b) and also 3 (a) explore state intervention in the form of creating marketing institutions or

foster community based organizations for bringing producers and users together along with facilities for standardization, storage and reaching fair prices.

Document different stages in supply chains, extent of price spreads, and market imperfections and find ways of reducing price spreads and improving efficiency. State role is mainly as facilitator.

Once the supply chain is improved, competitive bidding or auction may help in finding fair price

For 4, mechanisms are needed to handle time and uncertainty.

One option is to design producer-user institutions on long term basis, long term contracts with contingent clauses, and mechanisms for sharing costs and benefits (monetary and non-monetary). We may learn from experiments in Costa Rica and other Latin American countries.

Another option is to issue certificate of origin along with PIC, MTA like a passport accompanying the resource from the procurement stage to the stage of commercialization of the product derived from the resource. This is desirable especially for a bio resource for patenting.

Access fee and milestone payments would be useful.