India's submission in response to points (c) to (h) of CBD Notification 2011-223 relating to decision X/44 on incentive measures

(a) taking measures, and establishing, or enhancing, mechanisms with a view to account for the values of biodiversity and ecosystem services in public and private sector decision making, including by revising and updating national biodiversity strategies and action plans to further engage different sectors of government and the private sector, building on the work of the TEEB initiative, the UNDP regional initiative on the importance of biodiversity and ecosystems for sustained growth and equity in Latin America and the Caribbean, and other relevant initiatives;

and

(b) undertaking similar studies at the national level;

India launched the TEEB India study for national level economic valuation on biodiversity on the lines of the global TEEB study in New Delhi on 18th February, 2011. Thereafter, the first national stakeholders' consultations to draw up the work programme under TEEB India study was organized at Indian Institute of Forest Management, Bhopal on 15-16 September, 2011, wherein inland waters and coastal and marine ecosystems have been identified as priorities. The study has an indicative timeframe of five years. The economic valuation studies in India and the overall design of the TEEB India study is proposed to be made ready before CoP-11 to be held in October 2012.

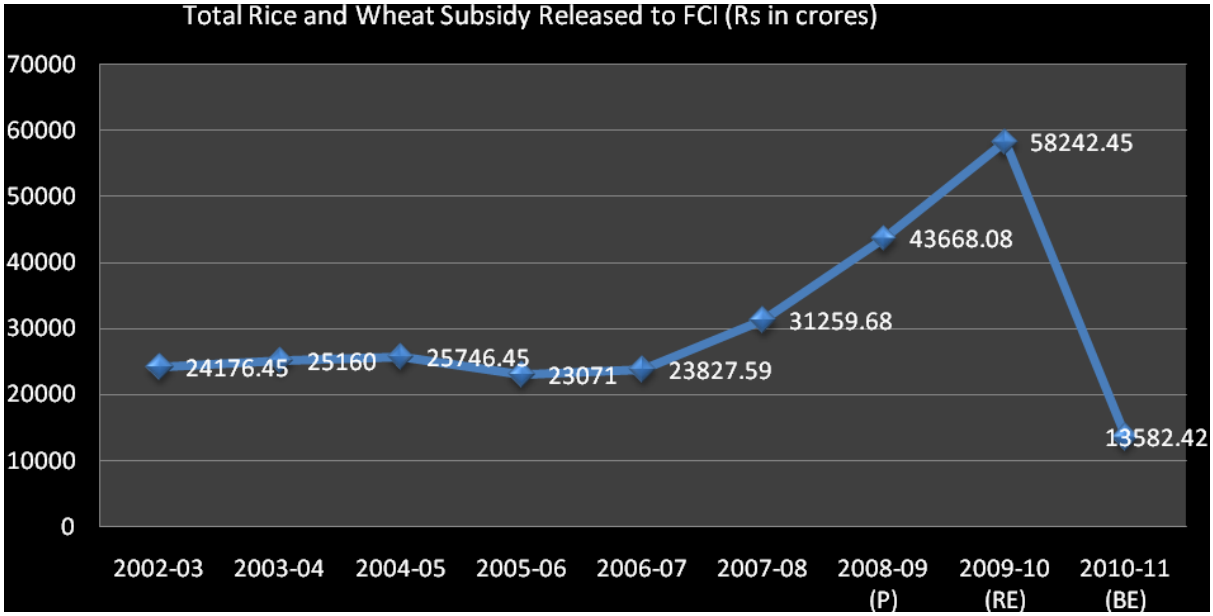
(c) Identifying, eliminating, phasing out, or reforming, with a view to minimize or avoid negative impacts from, existing harmful incentives for sectors that can potentially affect biodiversity, taking into account target 3 of the Strategic Plan for Biodiversity 2011-2020

Food and Crop Price Subsidies

In a developing country with a large population such as India, ensuring food security is a key priority. Food subsidies are positioned to address this issue. These take the shape of low issue prices for food from fair price shops. There is no evidence that these food subsidies for the poor endanger biodiversity in any manner.

However minimum support prices on food crops may have biodiversity consequences. Crop price subsidies encourage cultivation of common lands. This too may have biodiversity implications.

Some relevant figures are reproduced below.

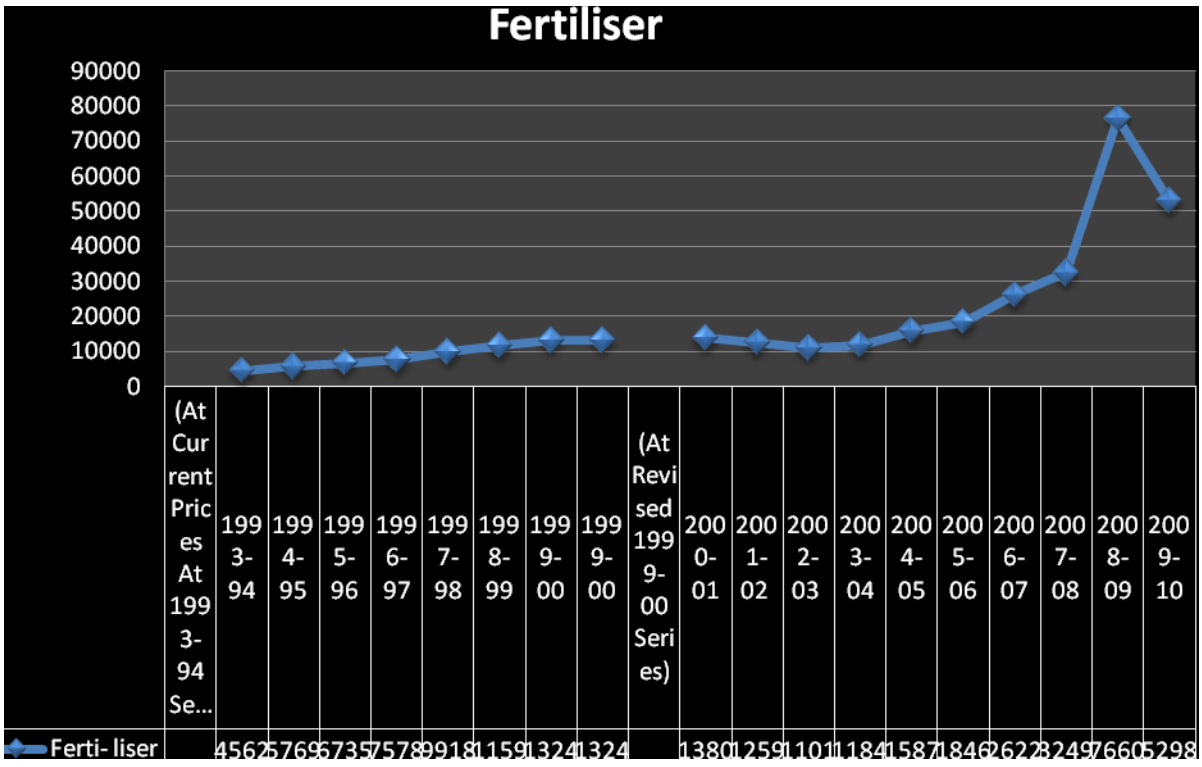


Fertilizer Subsidies

The fertilizer subsidy is basically meant for import substitution and push fertilizer consumption. This has had the impact of raising production of food production in the country. However excess use of fertilizers may have caused nitrate content in soil and groundwater going up in certain pockets of the country.

Irrigation Subsidies

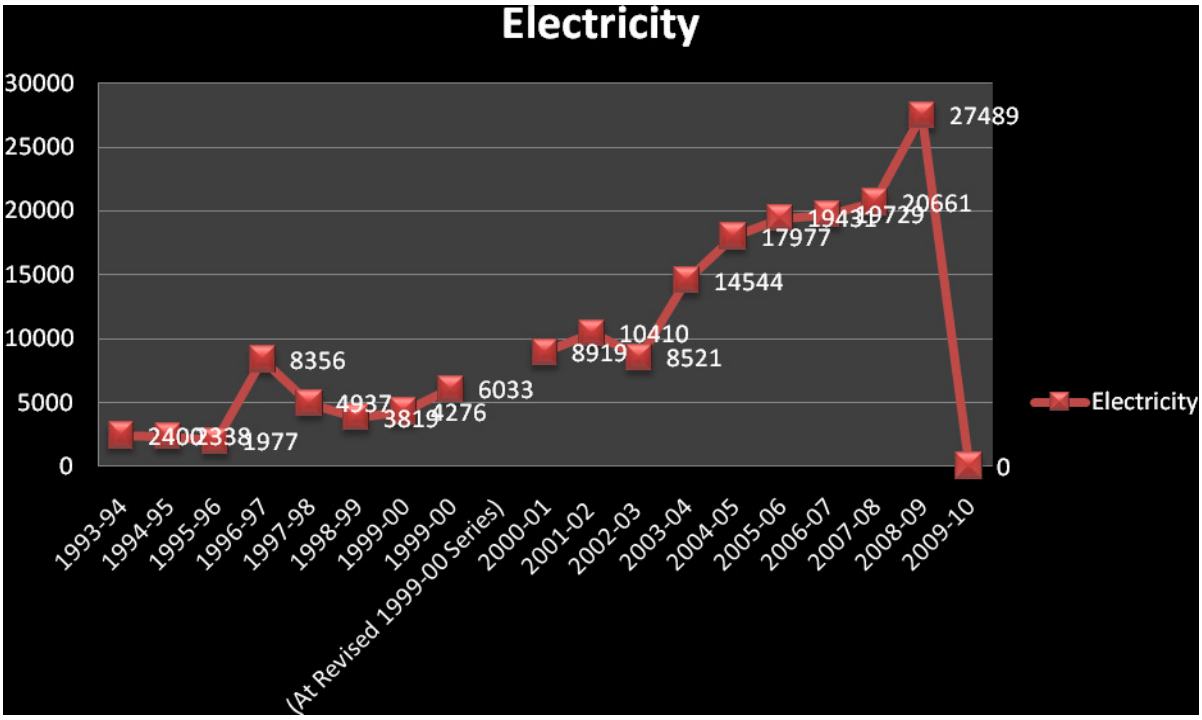
Irrigation subsidies are primarily meant for the purpose of increasing production. Surface Irrigation through canals account for 70 % of surface irrigated land. In some instances, irrigation (canal) subsidies may contribute to unregulated cropping patterns, even though projects are conceived and constructed with a pre- determined objective defining the extent of area to be covered and cropping pattern to be followed. This may therefore have environmental implications.



Energy subsidies

India is largely dependent on fossil fuel. Technological improvements can reduce the country's dependence on fossil fuel. The subsidy in energy is meant for the benefit of the poorest of the poor, but not all of it reaches the targeted population. The National Environmental Policy, Government of India 2007, recognized the fact that explicit and implicit subsidies for the use of various resources could entail policy failures.

The bulk of India's energy subsidies aim to provide cheap fuel for lighting to poor households; replace fuels like firewood and dung with cleaner cooking fuels; insulate the domestic economy from the volatility of the international prices of petroleum products. However, there have been reports of subsidized kerosene being "diverted" from the public distribution system for other uses.



(d) Promoting the design and implementation, in all key economic sectors, of positive incentive measures for the conservation and sustainable use of biodiversity that are effective, transparent, targeted, appropriately monitored, cost-efficient as well as consistent and in harmony with the Convention and other relevant international obligations, and that do not generate perverse incentives, taking into account, as appropriate, the range of positive incentive measures identified in the report for policy-makers of the TEEB initiative, the polluter pays principle and the associated full-cost recovery principle, as well as the livelihood of indigenous and local communities

Positive Incentives:

Organic Farming

Organic farming is an area where subsidies create positive externalities for biodiversity conservation. Gradual phasing out of subsidy on synthetic fertilizer/pesticides and initiating promotion of bio-inputs would contribute towards enhancing organic agriculture. Subsidies should also partake of special insurance scheme for organic farms which would reduce risks devolving on farmers in case of crop failure. Moreover, markets need to be developed for organic produce and channels provided to export these commodities while at the same time following international standards and norms. India has subsidies for certification of organic farms. India also provides for marketing infrastructure for transport of organic farm produce from farms to markets. The Agricultural and Processed Food Products Export Development Authority (APEDA) is a noteworthy organization that works under the aegis of the Ministry of Commerce, Government of India. Organizations such as the Spices Board of India provide a variety of subsidies to encourage production of organic spices by way of subsidies for planting materials, bio composts and related inputs. Organic farming incentives and subsidies actually contribute to biodiversity conservation.

(e) Engaging with businesses and enterprises on ways and means to contribute to the national implementation of the Convention, including through the design and implementation, with their participation, of direct and indirect positive incentive measures for the conservation and sustainable use of biodiversity; Engaging Business in the Conservation and Sustainable use of Biodiversity

India's National Biodiversity Action Plan (NBAP) 2008, emphasizes 'business' and private sector as target groups in education, training, awareness and extension programmes on biodiversity issues. Likewise, participation of private sector in R&D is clearly emphasized by the NBAP.

Involvement of India's business and private sector in biodiversity conservation efforts can be divided into two categories.

The first category relates to sustainable utilization of bioresources. In the second category come efforts on the part of private sector to promote field based projects for conservation of biodiversity.

There have been many voluntary efforts on the part of India's private sector particularly those specializing in Indian System of Medicines to participate in ex situ and in situ conservation of important medicinal plants. India's leading Ayurveda/Indian medicine manufacturing enterprises such as Dabur, Himalaya Drugs, the Arya Vaidya Sala and Arya Vaidya Pharmacy have spearheaded conservation movements in this sphere. These efforts have been promoted by national R&D establishments such as the Council for Scientific and Industrial Research (CSIR) and the Department of Biotechnology. There are nutraceutical establishments in India that have specialized in producing nutraceuticals based on plant based extracts, resinoids and essential oils . They have also demonstrated interest in conservation activities.

The following examples are noteworthy in so far as the second category goes.

Tata Steel – IUCN Initiative for Turtle Conservation is an important project which has been undertaken by India's corporate major at Dhamra port in the State of Orissa

for turtle conservation. These efforts have supplemented programmes of turtle conservation being undertaken by the State Forest/Wildlife Departments.

Tata Power Ltd, India's major private sector electricity producer has taken up a major project for conserving biodiversity in Northern Western Ghats at Mulshi.

Associated Cement Companies (ACC) Ltd in association with Applied Environmental Research Foundation (AERF), Pune has its sites assessed for biodiversity and detailed inventory as part of its Corporate Social Responsibility scheme.

Initiatives by Indian Institute of Management Bangalore (IIMB), one of India's leading business schools initiated a major campus greening programme in 2008. IIMB Initiative has been to green its 100 acre campus through carefully designed re-forestation programme that targets species endemic to the zone. IIMB also catalogued avian and reptile species occurring within its campus. These efforts went hand in hand with similar initiatives to reduce water consumption and avoid energy wastage as part of the Institute's commitment to reduce its carbon footprint.

Green Thumb Certification program of Applied Environmental Research Foundation (AERF), Pune is a voluntary certification initiative by India's leading private foundation for companies that have played a stellar role in conservation. The Foundation has also initiated a 'Sponsor a forest' scheme for eliciting financial support of the private sector for conserving forests that also promises carbon offset benefits to the private sector.

Apart from ABS provisions in the India's Biodiversity Act 2002 that provide for benefit sharing from commercial use of bio-resources and traditional knowledge, initiatives for biodiversity conservation also arise from 100% depreciation benefits accorded to the private sector for application of renewable energy that saves on use of biomass derived from forests to meet energy needs. This apart, financial institutions such as the Small Industries Development Bank of India provide term loans to enterprises in the small and medium sector that utilize bio-resources on a sustainable basis.

(f) Implementing sustainable consumption and production patterns for the conservation and sustainable use of biodiversity, both in the public and the private sector, including through business and biodiversity initiatives, procurement policies that are in line with the objectives of the Convention, and development of methods to promote science-based information on biodiversity in consumer and producer decisions, consistent and in harmony with the Convention and other relevant international obligations;

Sustainable Consumption

In 1999, the UN General Assembly revised the *United Nations Guidelines on Consumer Protection* to include sustainable consumption in the Objectives and General Principles as well as in a specific new section. The UN Guidelines now encompass conducting sustainable consumption research, promoting recycling and sustainable government practices encouraging life cycle thinking and eco-products, and developing standards for regulating and verifying environmental claims. (OECD, 2008). UNEP has also developed the *Guidelines for National Programmes on Sustainable Consumption and Production* which address gaps in initiatives by National Governments.(UNEP, 2008)

Sustainable consumption has positive impact in several key areas:

- Proper Usage of water resource through water usage plans, avoiding depletion of water reserves by applying water usage plans, by minimizing distribution losses and pollution of water reserves, and by promoting technologies using less water (in industry and households).
- Provide access to safe and affordable transport, by giving preference to public transport systems for medium distances, and non-motorized transport systems for short distances.
- Ensure secure food items by applying a labelling system, supported by independent testing/verification of product features.
- Avoid littering and illegal waste dumping by promoting sustainable product design and by establishing a recycling system supported by economic incentives.
- Establish markets for sustainable products, such as organic food, by adoptinggreen procurement policies.(United Nations, 2006).

Some examples of sustainable consumption initiatives in India are given below.

- Capacity Building for Implementation of UN Guidelines on Consumer Protection (sustainable consumption) in Asia: A two-year project financially supported by the European Union, through its Asia Pro Eco programme, and is a collaborative effort between the United Nations Environment Programme, Consumers International, the Center for Environment and Development, and the Danish Consumer Council. The project was proposed as means to respond to the call from governments in Asia to strengthen the capacity of Governments and other stakeholders to implement the UN Guidelines on sustainable consumption, and to share experiences regionally (Asia-Asia) and inter-regionally(Europe-Asia) on sustainable consumption practices.
- The project involves six European countries (Denmark, France, Germany, Netherlands, Spain and Sweden) and 12 Asian countries (including India.(UNEP, 2004)
- India is credited with impartial testing of consumer products. Though there are high costs involved in testing consumer items, India has a strong active NGO base and therefore people are informed about the products.
- The Indian Green Building Council (IGBC), The Energy and Resources Institute (TERI) are actively promoting green buildings in India. Promotion for a whole-building approach to sustainability by addressing performance in the following five areas:
    - Sustainable site development
    - Water savings
    - Energy efficiency
    - Materials selection
    - Indoor environmental quality. (Evans, Shui, & Somasundaram, 2009)
- Advancing the concept of fair trade in India : PRO SUSTAIN is another project aimed to build environmentally sustainable production and consumption practices that help reduce poverty amongst poor farmers and handicraft producers in India. It seeks to create a consumer market for fair trade products in India. (Switch Asia

Programme)PRO SUSTAIN has received a three-year grant from the European Union for the project, which starts in January 2010. The partners will provide information to educate the middle class about fair trade. But they will also further the development of retail trade in India. In addition, they would like to see the government do more to promote fair trade, for example by means of public service campaigns and support to fair trade producersIn addition to Hivos, the driving forces behind PRO SUSTAIN are Fair Trade Forum India, International Resources for Fairer Trade and Shop for Change. (Hivos,People Unlimited, 2009)

- Waste generation is one of the major side effects of consumption. Though India has programmes for urban waste management, there are political, financial, planning related issues which hamper the use of modern technology to tackle this issue. Though there are plans for large recycling plants in the major cities, yet execution of the plans is beset with some problems.
- Certain initiatives which are needed for sustainable consumption practices is to generate the demand for local food. Local self-government structures should be used to disseminate knowledge on the environmental benefits of regionally produced food. Also, seasonally produced foods grown using organic methods should be given preference.
- Also the demand should be diverted away from packaged food and shift towards minimally processed and ecologically packed products.
- Culturally there should be a gradual change in the mindset and people should move towards food that have low environmental impact but provide the required nutrition.

Sustainable Production

The emphasis of sustainable production is on the supply side of the equation, focusing on improving environmental performance in key economic sectors, such as agriculture, energy, industry, tourism and transport. Sustainable consumption also addresses the demand side, by looking at how the goods and services required to meet basic needs and improve quality of life - such as food and health, shelter, clothing,

leisure and mobility - can be delivered in ways that reduce the burden on the Earth's carrying capacity.(Robins & Roberts, 1997)

Some initiatives for sustainable production in India are given below.

- Green Procurement and Purchase Guidelines

  There has been an effort to gather stakeholder inputs to draw Green Procurment and Purchasing guidelines by the CII-ITC Centre of Excellence for Sustainable Development, with support of the Ministry of Environment and Forests India. Countries have focused almost exclusively on raising awareness and developing tools for sustainable procurement. The focus has shifted from information to performance, with many national programs establishing performance targets and objectives. Unfortunately, prevailing effort appears are not sufficiently mature and robust to realise the systematic embedding of environmental and social elements into the procurement process. (CII, CII-ITC Centre of Excellence for Sustainable Development, Ministry of Environment and Forests, 2008)
- Sustainable production in the paper industry: The paper industry based on forests raises concerns regarding forest cover in India. A move towards use of handmade paper which has a lower carbon footprint and engages in cleaner technology partly addresses this issue. The estimated value based on 1995 figures indicate that the export value of handmade paper is Rs, 70 million and accounts for 0.4% of the total paper production in India. Handmade paper (HMP) indicates a high export potential. Moreover, the raw materials used in handmade papermaking are the waste products of the textile industries, that are locally available besides recycled secondary fibres. Most of the HMP in India use cotton rags, both white and colored or waste paper. In the case of handmade paper the maximum limit of recycling is almost double, i.e., 8 times, primarily due to milder conditions of processing the raw material into a sheet of paper. Handmade paper also shows a better strength isotropy than machine paper. (Kumar & Maheswari).
- Organic food production

  Organic food production retains the nutrient quality of the soil and at the same time helps build its organic carbon content. There is a growing market for

organic food products in India. In the last seven years, the industry has grown 25 fold, which is a result of the combined efforts of farmers, NGOs , government interventions and market demands. Quality has been ensured through internally acclaimed certification system both for export and domestic purposes.

Fact file of the organic production in India

Total organic area	> 1,08,650 ha
Total projects	2099
No of Grower groups	919
Total organic farmers	548,045
Total certified production	17.11 lakht
Number of processors	427
Total export	58,408 t
Value of export in	Rs.5254.9 million INR 112 million US$
Number of exporters	299

Source : (Yadav, 2011)

Crop Quantity produced in MT	**(2009-10)**
Cotton (seed cotton)	837293
Rice	17762
Wheat	113570
Other cereals and millets	271042
Pulses	53227
Oil seeds and Soybean	315067
Tea/ Coffee	40614
Spices	168507
Fruits and Vegetables	889844
Herbal and Medicinal	189193
Other	24661

Source :(Yadav, 2011)

- Other initiatives being taken up in India include
  - Development of Sustainable Products and services at a competitive price
  - Shared responsibility across and beyond the food chain
  - More business innovation for sustainable production
    - Eco–efficiency measures
    - Product innovation and design
    - Production and supply chain management

Works Cited

CII, CII-ITC Centre of Excellence for Sustainable Development, Ministry of Environment and Forests. (2008). *Stakeholder Consultation, Green Procurement & Purchasing Guidelines.* New Delhi: CII, CII-ITC Centre of Excellence for Sustainable Development, Ministry of Environment and Forests.

Environment Magazine - Heldref Publications. (2008, 08 26). *Environment Magazine - What Is Sustainable Development? Goals, Indicators, Values, and Practice*. Retrieved December 26, 2011, from http://www.environmentmagazine.org/Editorials/Kates-apr05-full.html

Evans, M., Shui, B., & Somasundaram, S. (2009). *Country Report on Building Energy Codes in India.* U.S. Department of Energy.

Hivos,People Unlimited. (2009, December 17). *Fair Trade Conquers India*. Retrieved December 28, 2011, from Hivos: http://www.hivos.nl/eng/News/Hivos-International-goes-digital/Sustainable-production/Fair-trade-conquers-India

Kumar, V., & Maheswari, R. C. (n.d.). *Handmade Papermaking in India:A Sustainable Production System.* Centre for rural Development & Technology, IIT Delhi.

Lowell Center for Sustainable Production. (n.d.). *What is Sustainable Production*. Retrieved December 2011, from Lowell Center for Sustaible Production, University of Massachusetts Lowell: http://www.sustainableproduction.org/abou.what.php

OECD. (2008). *Promoting Sustainable Consumption, Good Practices in OECD Countries.* OECD.

Policy Division, National Research Council. (1999). *Our Common Journey: A Transition Towards Sustainability.* Washington DC: National Academy Press.

Robins, N., & Roberts, S. (1997). *Changing Consumption and Production Patterns: Unlocking Trade Opportunities.* International Institute for Environmentlopment and Development, UN Department of Policy Coordination and Sustainable Deve.

Switch Asia Programme. (n.d.). *Promoting Fair trade and Sustainable Production*. Retrieved December 28, 2011, from Switch Asia Programme: http://www.switch-asia.eu/switch-projects/project-progress/projects-on-creating-demand-for-better-products/pro-sustain-fair-trade-india.html

UNEP. (2004). *Introduction to Sustainable Consumption in Europe and Asia.* UNEP.

World Commission on Environment and Development. (1987). *Report of the World Commission on Environment and Development: Our Common Future - A/42/427 Annex - UN Documents: Gathering a body of global agreements:.* Retrieved from http://www.un-documents.net/wced-ocf.htm

Yadav, A. (2011). *Organic Food Production, Problems, Prospects and Opportunities.* Ghaziabad: National Centre of Organic Farming, Ministry of Agriculture, Govtof India.

(g) Building or enhancing national capacities for assessing the values of biodiversity and ecosystem services, for identifying and removing or mitigating perverse incentives, and for the design and implementation of positive incentive measures for the conservation and sustainable use of biodiversity

Capacity building to enhance national capacities for assessing values of biodiversity and ecosystem services is crucial to ensure achievement of Targets 1 to 5 and Targets 14 and 15 of the Aichi Biodiversity Targets.

The challenge of building capacities in these areas interalia rests on the following pillars:

Focus groups

The focus group of capacity building initiatives may include students drawn from educational institutions that focus on environmental studies in their curricula. This may include social science research Institutions, Institutes/universities that focus on graduate teaching and/or research in ecological/ environmental sciences.

Content of Capacity Building

- Study of forms and typology of Biodiversity and ecosystem
- Study of inter-linkages characterizing Environmental Systems
- Ecological Energetics and cycles
- Economic Valuation Techniques of Biodiversity and Ecosystem Services
- Environmental Impact Assessments and Damage impacts
- Ecological Anthropology

Impact Realization

The impacts of capacity building need to be assessed in terms of the following impacts:

(a) Number of pilot ecosystem valuation exercises carried under actual field conditions
(b) Number of training programmes carried out amongst local communities and amongst regional policy makers
(c) Number of local community driven ecosystem assessment studies mentored by the students
(d) Efforts made to conduct pilots based on inter-institutional collaboration

Results of these assessments must be made available to educational institutions that carry out these programs to enable improvements,

Capacity building to enhance national capacities for identifying and removing perverse incentives and for the design and implementation of positive incentives is

crucial to ensure achievement of Targets 2, 5 to 10 and Targets 17 and 20 of Aichi Biodiversity Targets.

The challenge of building capacities in these areas rests on the following pillars:

Focus groups

The focus group of capacity building initiatives may include students drawn from economics, social science and management institutions that focus on environmental studies in their curricula.

Content of Capacity Building

- Study of forms and typology of Biodiversity and ecosystems
- Economic Valuation Techniques for Biodiversity and Ecosystem Services including demand assessment
- Environmental Impact Assessments and Damage impacts
- Studies on Ecosystem Services

Impact Realization

The impacts of capacity building need to be assessed in terms of the following impacts:

(e) Number of pilot ecosystem valuation exercises carried under actual field conditions to assss incidence of perverse/positive subsidies on biodiversity
(f) Number of training programmes carried out amongst local communities and amongst regional policy makers to enable them do
(g) Efforts made to conduct pilots based on inter-institutional collaboration

Results of these assessments must be made available to educational institutions that carry out these programs to enable improvements.