

# India Case Study

## Analysis of National Strategies for Sustainable Development

This document is one of 19 country case studies that form the knowledge base for a synthesis report entitled "National Strategies for Sustainable Development: Challenges, Approaches, and Innovations Based on a 19-country Analysis." The synthesis report and country case studies are available electronically at:

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### Notice to Reader

Information in the country case studies was obtained primarily from publicly available sources (e.g., Internet and literature sources) and, where possible, was supplemented through interviews with government officials. The information was up-to-date as of May 2004. Every effort was made to ensure that official national sustainable development focal point contacts had the opportunity to provide feedback on the research, but such contacts were not successful in all cases. **This case study is in an unedited, working paper format.**

These case studies are made publicly available to add to the national sustainable development strategy knowledge base. The project's research partners accept responsibility for any inaccuracies or omissions. The views expressed in this working paper do not necessarily represent the views of the funding partners.

The research partners welcome your comments on this country case study. Please e-mail comments to Darren Swanson at [dswanson@iisd.ca](mailto:dswanson@iisd.ca).

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## 1 Introduction: Country Description

The federal Republic of India is located in Southern Asia bordering Pakistan in the West, China, Nepal and Bhutan in the Northeast, Myanmar and Bangladesh in the East and the Bay of Bengal and the Arabian Sea in the South. Indian's has 1,050 billion inhabitants, about 16 % of the world's population on just 2.4% of the worlds land area. (CIA World Fact Book 2003)

### *Economy*

Since reforms started in 1990, India has been heading towards social market economy, although the public sector still dominates in key areas. Traditionally, India's economy is characterised by village farming, modern agriculture, handicrafts, a wide range of modern industries and a large number of support services. Apart from agriculture (rice, wheat, oilseed, cotton, jute, tea etc.), the main branches of economy are electricity production, consumer goods, cement, steel production and general infrastructure including telecommunications as well as insurance, banking, IT and software. In recent years, the economic change is obvious. One driving force behind this is the Information technology. The GDP approx. \$ 2,664 trillion (2002) is composed of agriculture 24.8%, industry 26.4% and services 48.8%. India's growth continues to be high, 5-6 %. The growth in the 1990s has generated less employment than was expected. The official unemployment is 4 %. India receives \$ 2.9 billion in economic aid (1998/99) and pays interest on external debt of \$100.6 billion (2001 est.). (CIA World Fact Book 2003, FFOG 2003, MoEF 2002a)

### *Society*

India (Member of the Commonwealth of Nations) is divided into 28 states and 7 union territories.

Legislative power is held by the bicameral Parliament or Sansad, consisting of the Council of States or Rajya Sabha (max. 250 members serving six-year terms) and the People's Assembly or Lok Sabha (545 members serving five-year terms). An electoral college consisting of elected members of both houses of Parliament and the legislatures of the States elects the President for a five-year term. Abdul KALAM has been president since 2002. The vice-president is elected by both houses of Parliament also for a five-year term too. Bhairon Singh SHEKHAWAT has been vice-president since 2002. Following the legislative elections the prime minister will be elected. Atal Bihari VAJPAYEE (Bharatiya Janata Party), leader of the strongest party in the "National Democratic Alliance" government coalition, has been in office as Prime Minister since 1998. The president appoints the Cabinet or the Council of Ministers on the recommendation of the Prime Minister. The judicial power is held by the Supreme Court. Its judges are appointed by the president and remain in office until they reach the age of 65. (CIA World Fact Book 2003, FFOG 2003)

The national language and mother tongue of 30% of the people is Hindi. English has an associate status and is the most important language for national, political, and commercial communication. India has many very well-educated people with fluent English. On the other hand, 42 % of the people are illiterate and a third of the people live in poverty. The infant mortality rate has stagnated at 72 per 1000 in recent years.

The life expectancy of total population 63 years (*male*: 63 years, *female*: 64 years) (2003 est.). (World Bank Group 2004, CIA 2003)

With a Human development index (HDI) of 0.59 in 2001, India is ranked 127<sup>th</sup> out of 175 countries classified (UNDP 2003).

### *Environment*

The 3,287,590 sq km of the country are characterised by upland plain in the South, flat to rolling plain along the Ganges, deserts in the West, the Himalayas in the North. The climate varies from temperate in the North to tropical monsoon in the South. The monsoon causes severe droughts, flash floods and flooding of large areas because of monsoon rains and thunderstorms. (CIA 2003)

Current environmental issues are deforestation, soil erosion, overgrazing, desertification, air pollution from industrial effluents and vehicle emissions, water pollution from raw sewage and runoff of agricultural pesticides. Tap water is not potable in some parts of the country. The huge and growing population is overstraining natural resources.

Even before India's independence in 1947, several environmental legislations existed. But only after the UN Conference on the Human Environment in Stockholm 1972, the Government began to install a first well-developed framework. Under the influence of this declaration, the National Council for Environmental Policy and Planning within the Department of Science and Technology was set up in 1972. This Council evolved into the new Ministry of Environment and Forest in 1985. (MoEF 2002a)

After the UNCED, it developed a number of strategic environmental plans, ratified the Kyoto-Protocol and a number of other international treaties and paid strong attention to the implementation of Local Agenda 21.

India is signatory of many important international treaties in the field of environment, e.g. the International Convention for the regulation of Whaling, the International Plant Protection Convention, the Antarctic Treaty, the Vienna Convention for the protection of the Ozone Layer; the Basel Convention on Trans-boundary movement of hazardous substances, the Framework Convention on Climate Change; Convention on the Conservation of Biodiversity and the Montreal Protocol on the Substances that Deplete the Ozone Layer. (CSD 2002)

*Note on sources*

This study is based on the analysis of government reports, OECD papers and reports by science institutes.

**Table 1: Profile by Selected Indicators**

<b>Indicator</b>	<b>Value</b>
Human Development Index (and ranking)	0.59 (127th)
Human Poverty Index (and ranking)	33.1 (53rd)
Environmental Sustainability Index	41.6 (116th)
GHG Emissions	1995: 1 tonnes CO <sub>2</sub> per capita
GDP and GDP per capita	\$ 2,664 trillion, \$ 2,600

Source: CIA 2003, UNDP 2003, Yale University and Columbia University 2002, Zittel and Treber 2003

## 2 Approaches to a National Sustainable Development Strategy

India presented its perspective on sustainable development before the World Summit for Sustainable Development (WSSD) in 2002 as detailed study “Empowering People for Sustainable Development” (EPSD). It was brought out by the Ministry of Environment and Forests.

The Indian Government did not feel the need for a separate specific strategy for sustainable development. The Five Year Plans (see below) provide medium-term strategies for overall development. However, after the WSSD, the Indian government initiated a process of preparing and implementing a national strategy for sustainable development by 2005.

EPSD introduces the essential framework for sustainable development in India: democratic continuity, devolution of power, independent judiciary, and civilian control of the armed forces, independent media, transparency and people's participation. It follows multidimensional, sectoral and cross-sectoral approaches. (MoEF 2002)

### Box 1: EPSD – four main Objectives

- Combating poverty
- Empowering people
- Using core competence in science and technology
- Setting environmental standards: Conservation of Natural Resources, Improving Core Sectors of Economy

Source: MoEF 2002

The multidimensionality in the EPSD is described in the chapters “Combating poverty”, “Putting people first”, “Harnessing scientific and technological prowess” and “Setting standards, institutions and legislations”. Cross-sectoral elements are included in the chapter “Conservation of natural resources” (water, agriculture, forest & biodiversity, marine resources, water resources). The penultimate chapter “Promoting sustainable development” shows a slightly sectoral approach. The sectoral orientation in EPSD focuses on the identified core sectors as energy, industry and transport, because they are essential for the future growth of the Indian economy and were responsible for much of the pollution of air and water in the past. The last chapter “Unfinished agenda” refers to the unsatisfactory progress in sustainable development globally, the North-South contract (financial transfer and environment technology transfer to developing countries) and the remaining national challenge in achieving sustainable development.

### *EPSD Content*

The governments commitment to sustainable development is reflected in specific and monitorable targets (see Box 2) for a few key indicators of human development and conservation of natural resources that became part of the Tenth Five Year Plan (FYP). The EPSD includes first of all descriptions of India’s conditions and resumes the developments of the past. There are also some measurable medium-term targets. But

the planning itself has to be put into more concrete terms within FYP. Right now the Tenth Five Year Plan is in force. (MoEF 2002, chapter 1 p. 9)

### *Coordination and Linkages with Other Strategies or Planning Processes*

#### *National Five Years Planning*

Planning is an important steering instrument of India's democracy. It is based on an iterative process involving interaction between the centre, the state and the local bodies. Multiple stakeholders participate in the planning process. Working groups and task forces are established to prepare plans and reports for various sectors. They are responsible for substantial participation of civil society.

Sustainability concerns have become a vital element in the planning process. "The Ninth Five-Year Plan (1997-2002) explicitly recognized the synergy between environment, health and development and identified as one of its core objectives the need for ensuring environmental sustainability of the development process through social mobilization and participation of people at all levels." (MoEF 2002:16)

The Planning Commission of India (PCI) is responsible for making the Five Year Plans. The PCI works under the overall guidance of the National Development Council (NDC), the highest decision-making authority in the country on development matters. In a preparatory meeting, the NDC directed the Planning Commission to prepare the Tenth Five Year Plan with a target growth rate of 8 per cent per annum along with significant improvements in social and environmental indicators. Thus, principles for sustainable development were integrated into the acting of the administration and into the Tenth FYP. The PCI consults with the Central Ministries and the State Governments while formulating FYPs and Annual Plans for short-term development goals and also oversees their implementation. The Commission also functions as an advisory planning body at the highest level. (PCI 2002, PCI 2002a)

The short-term development goals (plans) are implemented through a decentralised and broad-based administration. A uniform pattern exists of devolution of responsibility between the centre and the states on one hand and the states and local bodies on the other. There is a mid-term appraisal within the FYP. (MoEF 2002)

As already mentioned, in addition to India's 8 % growth target, further targets were set up to reflect the importance of the sustainable dimensions in development planning; the Tenth Plan identifies specific and monitorable targets for a few key indicators of human development.

**Box 2: Targets of the Tenth Five Year Plan****Targets for Sustainable Development:**

- Reduction of poverty ratio by 5 percentage points by 2007 and by 15 percentage points by 2012
- All children in school by 2003; all children to complete 5 Years in school by 2007
- Reduction in gender gaps in literacy and wage rates by at least 50 % by 2007
- Reduction in population growth between 2001 and 2011 to 16.2 %
- Increase in literacy rate to 75 % by 2007
- Reduction of Infant Mortality Rate (IMR) to 45 per 1000 live births by 2007 and to 28 by 2012
- Reduction of Maternal Mortality Rate (MMR) to 2 per 1000 live births by 2007 and to 1 by 2012
- Increase in forest cover to 25 % by 2007 and 33 % by 2012
- All villages to have sustained access to potable drinking water by 2007
- Cleaning of major polluted rivers by 2007 and other notified stretches by 2012

Source: MoEF 2002

*Integration of Sustainable Development Principles*

The FYP includes all pillars of sustainable development. However, e.g. inter-generational equity is not an outstanding topic as far as this research revealed. With regard to the poverty in the country, the main focus lies on economic growth and social development (especially employment and education) but is considering environmental aspects, too. For instance, a new approach in the Tenth FYP is social mobilisation as key to self-employment. This process-oriented program (SGSY) is for the poor with a focus on the formation of self help groups (SHGs). It is a holistic programme operating largely through SHGs, with the provision of micro-finance, training and capacity building. (PCI 2002, p. 214)

“The economy is a sub-system of the finite regional ecosystem...” (MoEF 2002d, chapter 1, p. 2). In order to encourage regional authorities and institutions to apply sustainable development in their planning, the MoEF published a manual on “Carrying Capacity based Regional Developmental Planning” in 2002. It describes the content of sustainable development and the “carrying capacity” process, a scheme to analyse regions and case studies. (MoEF 2002d, chapter 1)

### **3 Institutional and Procedural Aspects of a National Sustainable Development Strategy**

#### **3.1 Development and Institutional Aspects**

A large number of laws have been made to regulate environmental issues since the early 70s, but mainly during the 80s. This is a result of the Stockholm Declaration adopted in 1972. Under the influence of this declaration, the National Council for Environmental Policy and Planning within the Department of Science and Technology was set up in the same year and developed into a full-fledged Ministry of Environment and Forests (MoEF) in 1985. Today, it is the central administrative body in the country for regulating and guaranteeing environmental protection. (MoEF 2002a, MoEF 2002, Weidner, Jänicke 2002)

No additional institutions than the above mentioned were introduced for the initiation of the sustainable development process. The major administrative force behind the Indian environmental policy is the Ministry of Environment and Forests (MoEF), which is also responsible for the national strategy for sustainable development. It initiated co-operations with research institutes, multi-stakeholder consultations etc. in the run up to the WSSD. (CSD 2002) The National Environmental Council (NEC) has played a key role within the EPSD coordination process. The Council, chaired by the Prime Minister and the Minister of Environment and Forests, advises the MoEF in its work in environment policy and planning matters of national concern. It consists of representatives of Ministries of Environment and Forests, Power, Surface Transport, Industry, Chemicals and Petrochemicals, Petroleum and Natural Gas, Urban Affairs, Non-conventional Energy Sources, and Mines and Members of Parliament, the Planning Commission, Central Pollution Control Board, Federation of Indian Chambers of Commerce & Industry, Associated Chambers of Commerce and Industries of India, Confederation of Indian Industry, Federation of Small Industries, National Consumer Federation and National Environmental Engineering Research Institute, the non-governmental Tata Energy Research Institute, World Wide Fund - India, Smt. Nandita Krishna, CPR Centre for Environment Education, INTACH, New Delhi and several individuals. (CSD 2002, UNCSD 2004)

There are several institutions working on sustainable development issues.

The Centre of Environment Education (CEE) is an autonomous agency and a Centre of Excellence under the MoEF. CEE organised the multi-stakeholder consultations and facilitated preparatory processes and submissions to the WSSD in behalf of the MoEF. The outcome of this process was prepared by CEE with support from MoEF and is called "Sustainable development Learnings and Perspectives from India" (see 3.2). With CEE's regional Cells, projects can be implemented with a strong local focus. It is an important partner within the Five Year Planning process by coordinating the education, awareness building and training for the Planning Commission, e.g. the Thematic Working Group of the National Biodiversity Strategy and the Action Plan. Additionally, it provides comprehensive information on key sustainable development issues to policy makers. (MoEF 2002b)

The Tata Energy and Resources Institute (TERI) is the largest research institution working on local, national and global sustainability issues in all developing countries.

It covers almost every aspect of sustainable development by its natural science and technology program. Before the WSSD, the government gave the task to analyse India's experience in implementing Agenda 21 to TERI to be carried out in consultation with all relevant Ministries, the Monitoring Committee, the Planning Commission and UNDP. The finalised document "Agenda 21 – An Assessment" contains a sectoral analysis of achievements and concerns in relation to Agenda 21 objectives with evolved directions and strategies for sustainable development at the sectoral level. TERI hosts the Delhi Sustainable Development Summit (DSDS), an annual international event, and provides knowledge and stimulating debate on various aspects of sustainable development. While DSDS 2003 dealt with the larger development priorities set at Johannesburg, DSDS 2004 paid attention to Partnerships for Sustainable Development in the post-WSSD scenario.

The Planning Commission, the central instance to put principles for sustainable development into reliable plans (FYP etc.), consists of a Chairman, the Minister of State, 4 personalities, 92 senior officials of the divisions and 3 grievance officers. (PCI 2004)

### **3.2 *Participation Aspects***

In the run-up to WSSD, a number of initiatives were taken such as a review of policies in relation to Agenda 21 and a view towards a national strategy for sustainable development, multi-stakeholder consultations, a media campaign and websites to give information about India's preparations towards the Summit as well as a nationwide children's competition. Organized by the CEE and supported by the MoEF, seven Regional Consultations and several smaller, thematically specialized meetings were organized. By and large, these Consultations covered general sustainable development concerns and a few regional issues. These discussions were condensed into a draft document "Sustainable Development - Learning's and Perspectives from India". (MoEF 2002b, CSD 2002)

The draft was submitted for discussion at a National Consultation in May 2002. The National consultation brought together over 150 representatives from several central Ministries, state governments, NGOs, academic institutions and civil society organizations. The draft document was spread through well-targeted mailings and through a web forum. The document was finalized based on input received from various cross sections of society before WSSD and contains listed requirements and suggestions, perspectives and approaches towards achieving a sustainable future. This process is seen as the beginning of continuing discussion and dialogue. (MoEF 2002b)

A large number of NGO's are actively discussing issues with the government. A few hundred NGO's called themselves environmental activists in the beginning of the 80's. Today, there are about 10,000. (Weidner, Jänicke 2002)

Information technology provides also platforms to raise awareness, peoples' participation and increase transparency. The MoEF has set up a National Environmental Information System (ENVIS). The MoEF also led the implementation of the UNDP and IDRC(International Development Research Centre, Canada)-assisted project, Sustainable Development Networking Programme (SDNP). It was launched world-wide in 1990. SDNP India facilitates the process of sustainable development by providing information for NGOs, government and research

organizations, business establishments and civil society. SDNP provides a platform for debates and discussions as well. Currently, the SDNP homepage gives information about a research of a sectoral approach for sustainable development and a multi-dimensional indicators system worked out by the Indira Gandhi Institute of development Research. (CSD 2002)

Generally, there has been an increasing trend to make extra information available and to demonstrate transparency in the functioning of Government. This governmental trend allows people to participate in decision making at all levels. Important issues are debated and discussed before a decision is taken. Consultations are held on important issues, both by Government and by Parliament. They are often hosted on the governmental homepages. (2002a)

### **3.3 Monitoring Aspects**

The FYP respectively the EPSD introduced neither a comprehensive indicator system nor a clear concept of the existing indicators. India will have developed specific sustainability indicators as well as the strategy for sustainable development by 2005.

The commitment to principles of sustainable development is already reflected in the monitorable targets of human development and conservation of natural resources that were set up in the Tenth Five Year Plan (FYP) (see chapter 2, Box 2). The indicators became an instrument in the Tenth FYP relating the importance of human development with economic growth. Earlier Plans focused on many of these, but no specific targets and indicators were set. (PCI 2002)

Additionally, the EPSD introduced a few indicators to monitor social changes and named them India's Human Development Indicators. Box 3 shows the critical situation of development in India. (MoEF 2002)

#### **Box 3: India's Human Development Indicators**

Infant mortality - 72 per thousand live births
Literacy rates - 65.2%
Households with access to safe drinking water - 62.3%
Households with access to proper sanitation facilities - 49.32%
Households with electricity connection - 42.37%
Households with electricity, safe drinking water and proper sanitation facilities - 16.1%
Households with permanent houses - 41.61%
Households with semi-permanent houses - 30.95%
Households with temporary shelters - 27.44%

Source: MoEF (2002)

Before the WSSD, a stocktaking of Agenda 21 implementation with clear sustainable development requirements for the future was published by the MoEF and supported by the UNDP, prepared by TERI (see 3.1). Apparently, there are no plans for an update at this time.

The government reports the progress within the Tenth FYP and hence the sustainable development targets annually. Monitoring is of the means used by PCI to review the

progress made by the individual central Ministries and Departments every three months. Reporting guidelines and instruments were set up in the FYP. Additionally, there are inter-ministerial monitoring groups. Despite that, the Programme Evaluation Organisation (PEO) evaluates selected programmes and schemes while they are being implemented. The evaluation studies are designed to assess performance, progress of implementation, effectiveness of the administrative process and impact of programmes. These studies are essential for mid-course corrections and better designs of future programs. An evaluation plan was considered for the Tenth Plan including evaluation of major programs in the 2<sup>nd</sup> year and in the 4<sup>th</sup> year of the Plan. During the planning process, there were growing expectations towards the Planning Commission to set up more projects with time bound targets for monitoring, mid-term evaluation and detailed impact studies than in former FYPs. (PCI 2002)

India's internet performance is worth mentioning. A web enabled system contains information on financial data of Annual plans and FYP. Planning Commission uses this information from various Public Sector Undertakings, Departments and Ministries. Information on plan outlays, revised estimates and commissioning dates of various projects of all sectors of economy is provided by this system. Users can make queries and generate a number of reports from the system. A database was developed on NGOs for monitoring the performance of NGOs of various socio-economic schemes. Information on various NGOs has been fed into the system after being collected by different Ministries and Departments. The Information System for Forest, Wildlife and Environment is a web based application to provide information regarding forests, wildlife and environment of all states. It helps users in the Planning Commission to take decisions on future plans. A database has been implemented dealing with parliament questions and their answers, handled by the Parliament Section of the Planning Commission. The system with search facilities enables users to have easy access to the documents by means of search options according to year parliament-session and related subjects. The Environmental Information System (ENVIS) as mentioned earlier deals with 'Centres of Excellence' related to environment. Nearly 6000 queries are received by the ENVIS network per year. The data bases are available in the internet to everybody.

### **3.4 *Implementation Aspects and Specific Initiatives***

Principles of sustainable development passed the first bottleneck by being accepted in the Tenth FYP. New approaches and instruments like measurable national indicators improved the planning towards sustainable development even further.

More time has to pass, before conclusions can be drawn. A lot will depend on the performance on the State level and the progress in capacity building from there down to the municipal level, where objectives and plans have to be translated into practical action. The same applies to the citizens' participation and the influence that the new sustainable thinking will have on their lives. Poverty and inter-regional and inter-class conflicts remain a major challenge.

Concerning capacity building in the young generation, India set up a National Green Corps (NGC) program several years ago. The program aims to provide opportunities for children to understand the environment and environmental problems through school eco-clubs. The MoEF launched NGC with the main objective of creating environmental awareness through people's participation especially among school

children. During the Tenth Plan it is expected that about 50,000 schools will participate in NGC related activities. In addition, 3,000 eco-clubs have been set up in schools with the Ministry's assistance. (CSD 2002, PCI 2002)

The concept of sustainable development was cast into a law, the Biological Diversity Act, for the first time in 2002. According to the act, the central government shall integrate the conservation, promotion and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies. "Sustainable use" is defined as the use of components of biological diversity in such manner and at such rate that does not lead to the long-term decline of the biological diversity thereby maintaining its potential to meet the needs and aspirations of present and future generations. Further national strategies, plans, programmes are to be developed to increase awareness with respect to biodiversity. (GOI 2003, chapter 1 and 9)

Joint Forest Management is a new style of governance. Similarly, in the case of environmental clearance all major projects have to go through the process of a public hearing. Both, the government and the local communities participate in managing the forest resources. (MoEF 2002a)

India has an ambitious development program that reflects the importance of sustainable growth of the economy. But many projects and further steps will be successful only if financial support is given and international co-operation and transfer of knowledge strengthen. And of course there has to be an effective national monitoring. The Planning Division (assistance to the Planning Commission) participated in a seminar on Sustainable Development Indicators organised by TERI, as can be read in the last annual report 2002-2003 by the Planning Commission. Thus, there might be further improvement in the monitoring of sustainable development. (PCI 2002a, p. 62)

Empowering people to participate substantially is one of the main objectives of the FYP. Special attention was paid to this objective in the "Programmatic Activities" of the FYP under the paragraph "Improving governance". It was chosen as an example in this study because of the special importance it is given in India's society in general, see Box 4. The real translation into practice will be seen in the next few years. (PCI 2002b)

*Selected approaches: Outstanding approaches within the Tenth FYP 2002-2007***Box 4: Improving governance - Important Components of Civil Services Reforms**

Civil Service Reforms must be aimed at improving transparency, accountability, honesty, efficiency and sensitivity in public administration at all levels. See some important components of Civil Service Reforms:

- The processes and the outcomes of policies, entitlements and procedures must be made transparent, widely shared and well displayed.
- It is believed and as such should be followed, that less discretion would lead to a more equitable and less corrupt system.
- Prevalent institutional arrangements will have to be reviewed and changes made so that those vested with authority are also made accountable.
- The present system of rewards and punishments in public life, which makes corruption a high return-low-risk activity, needs to be changed.
- It is necessary to review the situation, and identify departments and functions within departments that were once essential, but are now redundant and would need to be done away with.
- The induction of professionals/specialists into the administrative system, on contractual appointments should be examined and suitable policy changes made in the entry policy.
- Pre-service and demand driven in-service capacity building for all cadres and ranks should be made a regular feature.
- Contributory Pension System for the new employees must be seriously considered.
- Alternative ways of carrying out a job/activity must be examined and assigned to Government only if considered essential.
- Stability of tenure is essential and should be ensured for any constructive and sustainable work

Source: PCI 2002b

In the Tenth FYP, much attention was also given to an integrated approach to improve the agricultural sector in order to protect natural resources and combat poverty at the same time. This is quite a sustainable approach that has to be implemented in the next few years, see Box 5. (PCI 2002b)

**Box 5: Agriculture and rural development - An Integrated Approach to Improvement in Agriculture Sector**

Since the agriculture sector is the core of the Tenth Plan and the bulk of the new employment opportunities are going to arise in this sector, improving agricultural productivity and creating employment opportunities in this sector are crucial. An integrated approach will have to be adopted towards this, some pre-requisites / components are indicated:

- Utilising waste and degraded lands (described in more detail above)
- Macro-management approach to centrally sponsored schemes
- Improving credit flows and simplifying procedures
- Diversification of the cropping pattern by, cultivating medicinal and aromatic plants, bio-fuels, horticulture, agro-forestry, oil-seeds, pulses, etc.
- Precision farming with a view to ensuring optimal utilization of inputs
- Organic farming
- Integrated nutrient management
- Integrated pest management using biological controls
- Improvised implements and machinery
- Contract farming
- Leasing-in and leasing-out
- Revamping the extension system by extending Krishi Vigyan Kendras, making use of print media, IT, private initiatives like agri-clinics etc.
- Use of frontier technologies especially bio-technology
- Improved storage systems and cold chains for facilitation, preservation and exports
- Conservation and upgradation of native breeds of livestock through selective breeding
- Creation of disease free zones
- Improvement of the quality of milk to meet international standards, particularly as India is now a member of the WTO.
- Extension of the 'Operation Flood' to uncovered, hilly and backward areas.
- Productions of feed and fodder have to be increased substantially.

Source: PCI 2002b

### 3.5 Summary of National SD Strategy

The table below summarizes Country's sustainable development strategic initiatives.

**Table 2: Summary of India's Approach to a National Sustainable Development Strategy**

Aspects	Summary
<b>Content of SDS</b>	
- Typology	A official Strategy planned for 2005, but integrated principles of sustainable development in the Five Years Plan and a published study on currently Indian sustainable development principles in the run-up of the WSSD: Multi-dimensional, with cross-sectoral and sectoral elements and with a focus on the economic and social components.
- Content	Four core objectives, Combating poverty, Empowering people, Using core competence in science and technology, Setting environmental standards: Conservation of Natural Resources and Improving Core Sectors of Economy, seven middle-term targets.
- Linkages with other strategies and planning processes	Strong integration into the Tenth Five Year Plan 2002-2007.
<b>Development Aspects</b>	
- legal basis, state of process	As far as information was available, an inter-ministerial process lead by the Ministry of Environment and Forests.
- Institutions, responsible agencies	Ministry of Environment and Forests.
- Decisions and negotiation	Lead by the National Environmental Council, Ministry of Environment and Forests.
- External Support	None, only for the assessment of Agenda activities before WSSD.
<b>Participation</b>	
- Coordination	By the Ministry of Environment and Forests.
- Inter-governmental actors	National Environmental Council, Ministry of Environment and Forests and all Ministries with related issues
- Civil society, NGOs actors	Difficult to identify, multi-stakeholder consultations initiated by Ministry of Environment and Forests. Research institutes like TERI and CEE.
<b>Monitoring, Reporting and Adaptation Aspects</b>	
- Responsibilities & Mechanisms	No (external) independent monitoring and qualified checks. Sustainable targets/indicators integrated in Five Year Plan. Annual reports by Planning Commission, including information from the States.
- Compliance mechanisms	Mid-course corrections of the Five Year Plan. No identifiable compliance mechanisms or implications for failure to comply.
- Learning and Adaptation	No formal process for learning and adapting based on monitoring data, but learning processes are possible in the general adjustment during the planning process.
- Application of Strategic Environmental Assessment	Notification making environmental clearance mandatory for expansion, modernisation or setting up of projects published in 1994. Several updates.
<b>Implementation Aspects</b>	
- Responsibility and coordination	Planning Commission, Ministry for Environment and Forests, all Ministries.
- Financing and capacity	UNDP and IDRC (International Development Research Centre, Canada) for SDNP, UNDP for the consultation process before WSSD.
- Communication	Mainly via internet. Homepage of the Planning Commission up-to-date but no update on the homepage of the Sustainable Development Networking Programme (SDNP).
<b>Specific SD Initiatives</b>	No outstanding initiative identified. First sustainable approaches in the Biological diversity act, 2002.

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