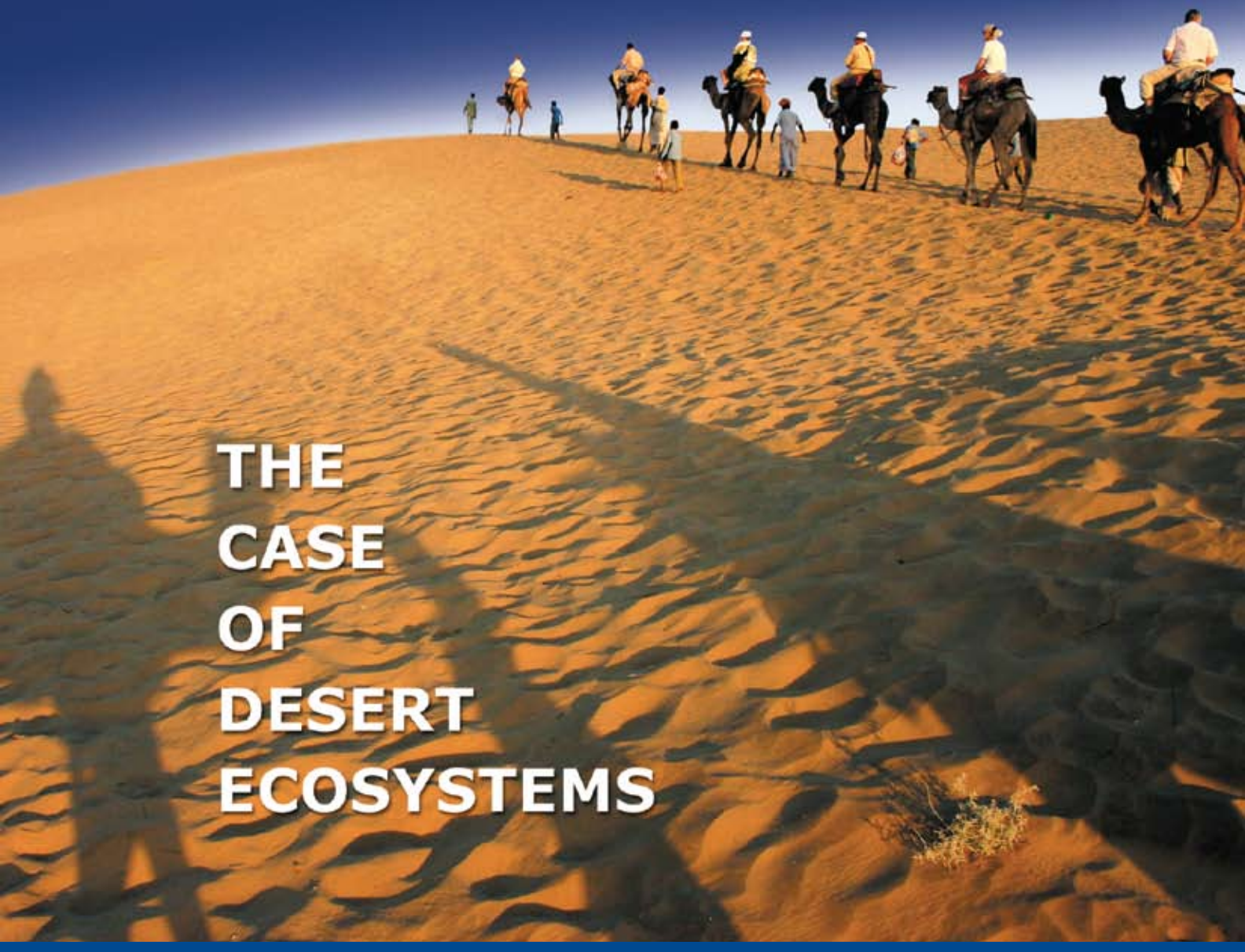
KAS INDIA: POLICY PAPER

13

2ND TERI-KAS ENVIRONMENTAL GOVERNANCE DIALOGUE

Environmental Governance in the
Context of Sustainable Development in India

November 15-16, 2012
National Law University, Jodhpur



THE CASE OF DESERT ECOSYSTEMS

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National Law University, Jodhpur, INDIA

Konrad Adenauer Stiftung

50 YEARS OF WORLDWIDE COOPERATION

Dialogues on Environmental Governance in the Context of Sustainable Development

2012 was the landmark year when heads of states and governments came together to revisit the commitments made 20 years ago on environment and sustainable development. The process involved stock taking of the achievements of the last two decades and the milestones that were yet to be completed. The objectives and themes of the summit were designed around Green Economy, the Institutional Framework for Sustainable Development and seven critical issues of our time—jobs, energy, cities, food, water, oceans and disasters. The outcomes of the three-day summit are expected to have far-reaching impacts on the way our governance frameworks mainstream sustainable development and integrate economic, social and environmental linkages with our approach towards development.

This is indeed a crucial time for environmental governance at the global, national and local levels. As emerging concerns over the global economy and daunting social challenges surface in an ever connected world, our environmental capital faces unprecedented challenges especially in the backdrop of a changing climate. While the summit provided a blueprint for global environmental governance, an important aspect of sustainable development still remains in the national and local domains, most intricately entwined with the ecosystems in which the development agenda unfolds. The way forward for environmental governance at the national scale is to identify and engage with multiple viewpoints and outcomes on environment. At the local scale, it is essential to formulate and observe norms and rules for sustainability and together the two levels (national and local) must develop and embrace the concept of 'knowledge' as an enabling factor for 'science' in our environmental policy making and governance regimes.

The way forward for environmental governance at the national scale is to identify and engage with multiple viewpoints and outcomes on environment

There is a major on-going debate—not only in the desert region but probably in the country as a whole and in other emerging countries as well—between economic growth models for development and the environment at adversarial positions. But at the same time, there is a need for recognition that environment is key to human wellbeing and is the basis for the economic system. If the latter has to flourish, environmental stewardship must be invested in.

Economic development has played out differently in the multiple contexts within India and we need to realise that the same set of regulations may not be applicable to a country that is so diverse in its natural capital as well as in socio-cultural conditions. There is a need for dialogue and conversations to understand problems of different ecosystems, the concerns, issues, challenges and coping strategies; resulting in a framework of commonalities and specificities for the country and ecosystems and the relevant strategies for environmental governance.

To this effect, a series of 'Dialogues on Environmental Governance in the Context of Sustainable Development' is being organised jointly by The Energy and Resources Institute

(TERI) and Konrad-Adenauer-Stiftung (KAS) utilising an ecosystem approach to capture the diversity of stakeholder opinions using a multi-stakeholder approach and increasing participation of major groups in governance mechanisms for sustainable development. The series of five dialogues cover various ecosystems in India—the Himalayas in the north, the hot desert region, the coastal and marine ecosystem, the plateaus and the riverine plains.

The second in the series of these TERI-KAS Dialogues on Environmental Governance focused on the Indian desert region. It was organised in collaboration with the National Law University (NLU) on November 15-16, 2012, at Jodhpur. This was preceded by the first dialogue in the series in July 2012, which focused on the Indian Himalayan region.

Desert Context

The 'hot' desert region of India consists of 37 districts spread across six states of Rajasthan, Gujarat, Haryana, Punjab, Andhra Pradesh and Karnataka. The Thar Desert spreads across western India and the eastern states of Pakistan—Sindh and Punjab. In India, the Thar Desert covers more than half of Rajasthan and the largest district of Gujarat—the Kutch district. One of the smallest deserts in the world in terms of geographical area, the Thar Desert is the most densely populated desert region with an average human population density of 83 per sq. km. compared to only 7 per sq. km. in other deserts. The predominantly rural population of the region is dependent on the natural resources available and this results in serious biotic pressures on the ecosystem.

The region is home to more than 2,000 species of flora and fauna including important medicinal plants. There are also several threatened species that are endemic only to this ecosystem. There are 6 national parks, 44 wildlife sanctuaries, 2 tiger reserves and 2 Ramsar sites in the Indian desert region. The Little Rann of Kutch has been nominated as a biosphere reserve.

Like all other ecosystems, the desert region also has several specificities that impart to it distinctive challenges and advantages. The climate of the Thar Desert region is characterised by low and erratic rainfall, low humidity, high solar radiation and strong winds. These extreme climatic conditions are coupled with soil characterised by very little organic matter that has resulted in minimal vegetative cover and a sand dune dominated landscape. The region has had low agricultural productivity that was historically suited to nomadic tribes highly dependent on livestock to support livelihoods. The reason for low agricultural productivity is not only the low total rainfall but its spatial and temporal

On-going discussion during the 2nd TERI-KAS dialogue on environmental governance

distribution as well. Other specificities applicable to the region are marginality, presence of biological niches and new human adaptation mechanisms (from Jodha, 1992).

There has been a diversity of coping strategies from the human settlements of the region. Traditionally the region has been dominated by subsistence agriculture and animal husbandry. Recently developed economic sectors of the desert region include the tourism industry and the extractive industries—minerals and hydrocarbons. Another sunrise sector for the region is the renewable energy sector whose potential is yet to be harnessed.

The dialogue touched upon the various issues of the Indian desert region pertaining to natural resource management—most notably the management of water, mineral resources and common property resources; impacts of climate change and the current adaptive strategies employed, legal and governance frameworks for environmental management, the development of new energy resources in the region and challenges to environmental management from extractive industries. A recurrent theme for environmental governance in the region was also the integration of traditional knowledge in new science and involvement of the community in decision-making processes through greater autonomy of local level institutions.

Sustainable Development of Natural Resources

The natural resources of the desert region have come under undue stress with the current economic development paradigm. The demands of a growing population and increasing aspirations have led to economic concerns taking priority over ecological concerns. Private players that have been responsible for most of the developmental activities have faltered in environmental stewardship largely because it has been a voluntary process. But the absence of benefit sharing mechanisms for resource development has taken a toll on the environment. While the classical model of development has involved resource extraction, there now is only a fine line that separates such extraction from debilitating exploitation. The valuation of present actual and future perceived needs of an economy injects resource cornering tendencies in the policy rollout and into the overall governance structure.

The deliberations during the dialogue highlighted the numerous impacts of mining minerals, hydrocarbons and stone quarrying; such as indiscriminate dumping of mine waste leading to loss of heritage sites, obstructions to flow of water in nearby bodies and pollution of little available surface water, loss of biodiversity and their habitat due to irreversible changes in

V.S. Shastri, Additional Dean, Faculty of Law, National Law University (Jodhpur), giving his perspective

landscape and the impacts on forest and fuel wood from shifting population employed in mines and related industries. One of the major challenges is systematic reclamation of spent land and sequential restoration of the region that should ideally be the responsibility of the mining enterprises responsible but has become the liability of the state and community.

Despite the aforementioned impacts and challenges in developing the extractive industries sector in the desert region of the country, stakeholders are of the opinion that mining as an economic sector must not be discontinued as it has brought much needed revenue to the states and a comparative advantage to the region as a whole. But the question which still looms large is the cost of developing this sector and the limits to certain activities that must be imposed to preserve the extremely valuable biodiversity of the region. There is a larger responsibility of the polity, the scientific community and the society as a stakeholder to come together and look at ecologically valuable areas and create an agenda for their conservation and development.

At the same time, there is much more to be done in regulating the sector's activities to reduce its ecological footprint and develop appropriate benefit sharing mechanisms so as to ensure that the gains from the development of the region actually reach the local community as the beneficiary.

The 'commons' of the desert region have traditionally been a responsibility of the community—in their development and maintenance. These included the 'gauchar' land for grazing purposes, the 'agor' for channelling water streams used for agriculture and 'orans' that are considered sacred and contribute to the green cover in the village. However, the community practices of common resources management have weakened due to neglect of traditional knowledge in planning processes and a general decline of social capital.

The land degradation issues of the Kutch region have also come into light and were discussed at length. The region is facing increasing soil salinity, increasing incidence of invasive species such as Prosopis juliflora (which is a small tree or shrub native to Mexico, South America and the Caribbean and has become an invasive species in Asia commonly known as babul and kikar) and degradation of the common property resources due to uncontrolled grazing and general lack of upkeep.

Apart from the issues of land degradation and management of common resources, the most daunting challenge of the desert region still remains water conservation and management. The demand for water has been growing over the years owing to an increasing population, rapid urbanisation and changes in practices to increase agricultural productivity. Water resources of the region face both the challenges of quantity and quality. While participatory approaches to water management are being introduced in numerous locations to develop community stewardship of water resources, several areas are facing extreme conditions of ground water depletion. There is need for a systemic approach to manage the available stock of ground water and make renewed efforts for recharge.

Development of dry land agriculture is recognised as an important way forward. At the same time, it is acknowledged that such agriculture cannot be detrimental to the regional forestry and water resources. In an attempt to improve agricultural productivity and diversity, exotic species are introduced and cultivated in the region. These exotic species, often, are water-intensive and unsustainable for the Thar region. There is a need for support of local species such as kair, saangri and so on instead of exotic species. These indigenous food crops could also be useful for developing local food processing units to provide more employment opportunities. Livestock has traditionally played an important role in the desert economy. However, there has been a general decline in livestock populations over the years. This is largely attributable to changes in preferences of the local population. There is a need for development of dairy technologies and animal husbandry to enhance livelihoods and productivity, and more pilot projects with field demonstrations could be introduced.

Genda Singh (first from left), Scientist, Arid Forest Research Institute

Enhancement of water harvesting and recharging technologies and improved water management practices to ensure optimal ground water usage are imperative for desert ecology. In doing so, due regard must be given to traditional water harvesting and recharging practices that take into account the geo physical and social characteristics of the region.

Environmental Challenges in a Changing Climate

The impacts of a changing climate are being felt all over the country and in the desert region these are manifested as uncertain rainfall and changes in temperatures coupled with increase in the incidence of floods and droughts. There is growing concern over issues of water management and this is the field that has seen most of the response from communities and local organisations; even though these responses are not packaged as 'climate change adaptation'.

As responses to incremental changes in the environment take the centrestage within the mandates of NGOs, CBOs, the research community and the government, it is extremely important to work towards preventing mal-adaptation while implementing adaptive responses. The environmental research field and especially climate change adaptation is mired with the challenges of addressing short term needs of the populace along with keeping a long term outlook on scientific enquiry and prevent actions that may prove detrimental to the ecosystem in the future. But preventing mal-adaptation is easier said than done. Implementing the correct adaptive response requires deliberation with multiple stakeholders at different levels of functionality spanning across multiple disciplines and with a basic requirement of updated relevant databases that can assist in informed decision-making. Currently these remain challenges to environmental governance in the desert region.

On the other hand, the changes brought about by climate change should also be capitalised upon. There is an enormous opportunity in this region with regard to climate change mitigation. By harvesting renewable energy sources such as solar and wind power, the impact of energy systems on the local environment and ecosystems can be reduced in conjunction with reduction in overall greenhouse gas emissions of the country. The potential for the renewable energy sector in the region is immense and some steps have already been taken to harness it, though a lot more action can be taken in this regard. This new energy can act as the fulcrum of

Sanjeev Kumar (second from left), Scientist, Desert Regional Centre, Zoological Survey of India

development for the region and the country as a whole if there are supporting regulatory and institutional mechanisms along with new partnerships with industry and the local people for the advancement of the sector.

Governance and Institutions

The last couple of decades have seen an increasing role of government institutions in implementation of policies and programmes as compared to a greater role for the community in management of natural resources in the past. This has created a dependence on the government for provision of basic services and natural resource management thus detaching the community from its erstwhile responsibilities. At the same time, there is a lack of appropriate multi-disciplinary

A.S. Faroda (third from right), Former Chairman, Agriculture Scientists Recruitment Board

agencies at the district levels that may take up sustainable development issues in an integrated manner, as pointed out by the report of the technical committee on Drought Prone Areas Programme and Desert Development Programme. Efforts are being made to restore the participatory aspect of community resource management but the legacies of political decisions will require time to overturn.

Developing the emerging sector of renewable energy also requires regulatory innovation and an enabling environment which can facilitate interaction between international investment and national policy framework. Equally important are incentives for development of local entrepreneurship in the sector as well as partnerships for funding, knowledge and expertise in the renewable energy sector.

There is a need for taking a fresh look at the governance and regulatory framework in place since the 1980s and going beyond regulations, rules and regulatory politics to understand human-environmental linkages.

The state and national governments must work within integrated frameworks for economic development, social concerns and environmental stewardship.

Strategies for Sustainable Development in the Desert Region

With the identification of the major issues, challenges and opportunities for environmental governance in the Indian desert region, the following features can be highlighted as a way forward:

Inclusion of Traditional Knowledge into Expert Knowledge for Planning Frameworks for the Region

The communities that have been surviving in such extreme conditions understand and know the constraints of the region and their experiences should be integrated in the action plans and programmes implemented by the various stakeholders. Local inhabitants have a lot of information and knowledge that has not been documented. Integration of traditional

R.V. Asari, Director, Gujarat Institute of Desert Ecology, presenting issues before stakeholders

knowledge and skills of the people of the region into mainstream planning processes should be a first step towards sustainable development in the region. It is important to utilise this knowledge before it is lost in a changing societal background.

Enhancing Public Awareness and Participation of Communities in Policy Formulation

There is a need for a focused programme for enhancing public awareness and increasing community participation in policy formulation and implementation so that there may be minimal harm to the fragile ecosystem through improved land use, water management, livestock management and conservation of important environmental resources. The region has experimented with instruments to involve the community such as the people's biodiversity registers and various resource management communities prepared on an ecosystem basis that have proven useful to collect and collate information. Learning from these experiments could play an important role in increasing community awareness and participation in this ecosystem as well as others.

Strengthening of Village and Local Institutions

In order to introduce innovative practices that would contribute to sustainable development, it is extremely important to create relevant capacity at the village and district levels. The institutions at the local level must develop multi-disciplinary expertise and develop processes that promote planning at the village level with community participation in decision-making processes. The development of environmental stewardship cannot be done with a top-down approach directed from a central government institution but needs a multi-level multi-actor framework. Along with participation from various stakeholders that are involved in the development of the region, institutions in the desert region must also focus on ensuring the participation of vulnerable groups and stakeholders that have been ignored in the past.

Innovative Livelihood Strategies Moving Away from Natural Resource Dependence

The livelihoods of the people of this region are very much related to the natural resources available to them and this must be acknowledged in policy and programme proposals. The developmental activities in the region propagated by the state governments as well as the central government have unintentionally increased this dependence even further and a majority of the population is still involved in agriculture, animal husbandry, agroforestry, ecotourism and extractive industries that are all based on the natural resources of the region.

There is a need for the creation of new job opportunities in the region that promote traditional practices and are generally oriented towards environmental stewardship instead of environmental exploitation. This will require a lot of handholding in the initial stages and must utilise a welfare-oriented approach for development with sound scientific basis and relevant technology applications for it to be successful.

Conference Agenda

Thursday, November 15, 2012

6.00 pm – 6.30 pm	**Registration**
6.30 pm – 6.45 pm	**Welcome Address** by **I.P. Massey**, Dean, Faculty of Law, NLU **Tomislav Delinic**, Resident Representative to India, KAS (officiating) **Ligia Noronha**, Executive Director, TERI
6.45 pm – 7.15 pm	**Opening Remarks: Setting the Agenda for the Dialogue** **Harsha Meenawat**, Associate Fellow, TERI

Friday, November 16, 2012

SESSION I

9.30 am – 11.00 am	**Diverse Viewpoints on Natural Resource Management and Problems of Environmental Governance in the Desert Region** *Chair:* **V.S. Shastri**, Additional Dean, Faculty of Law, NLU *Framing the Issues:* • **R.V. Asari**, Director, Gujarat Institute of Desert Ecology • **M.S. Sisodia**, Jai Narain Vyas University, Jodhpur *Discussant:* • **Sanjeev Kumar**, Zoological Survey of India, Arid Zone Centre
11.00 am – 11.15 am	Tea/Coffee Break

SESSION II

11.15 am – 1.00 pm	**Indicators and Impacts of Climate Change and Rules/Norms for Sustainable Development in the Desert Region** *Chair:* **K.K. Banerji**, Dean, Faculty of Science, NLU *Framing the Issues:* • **Shashi Tyagi**, Secretary and Co-founder, GRAVIS • **Harsha Meenawat**, TERI *Discussants:* • **Genda Singh**, Arid Forest Research Institute • **Nikhil Bohra**, Jal Bhagirathi Foundation
1.00 pm – 2.00 pm	Lunch

SESSION III

2.00 pm – 3.30 pm

From Regulation to Governance: Institutional Methods and Capacities for Policy-making in Environmental Governance

Chair: **Tomislav Delinic**, KAS

Framing the Issues:

- **Nidhi Srivastava**, Associate Fellow, TERI
- **Narendra Jain**, Programme Coordinator–Waste Land Development, Sewa Mandir

Discussant:

- **Krishna Dwivedi**, Associate Fellow, TERI

3.30 pm – 3.45 pm Tea/Coffee Break

SESSION IV

3.45 pm – 5.15 pm

Panel Discussion: Way Forward for Sustainable Development for the Desert Ecosystem

Chair: **Mononita Das**, Associate Professor, NLU

Panelists:

- **Manvendra Singh**, Former MP, Barmer
- **Ravinder R. Raina**, President–India Operations, Astonfield Renewables
- **A.S. Faroda**, Former Chairman, ASRB
- **R.V. Asari**, Gujarat Institute of Desert Ecology

5.15 pm – 5.45 pm **Concluding Remarks** by **Ligia Noronha**, TERI

List of Participants

Name	Designation and Organisation
Veena Aggarwal	Fellow, TERI
R.V. Asari	Director, Gujarat Institute of Desert Ecology
N. Bala	Arid Forest Research Institute
K.K. Banerji	Dean, Faculty of Science, National Law University, Jodhpur
Sanjay Beniwal	Jal Bhagirathi Foundation
K.L. Bhatia	National Law University, Jodhpur
Nikhil Bohra	Jal Bhagirathi Foundation
T.S. Chouhan	Professor, Department of Geography, University of Rajasthan
Mononita Das	Associate Professor, National Law University, Jodhpur
Rituparna Das	Associate Professor, National Law University, Jodhpur
Tomislav Delinic	Resident Representative to India, KAS (officiating)
Jonathan Donald	Research Associate, TERI
Krishna Dwivedi	Associate Fellow, TERI
A.S. Faroda	Former Chairman, Agricultural Scientists Recruitment Board
Malte Gaier	Project Officer, KAS
Mareen Haring	Project Officer, KAS
Narendra Jain	Programme Coordinator–Waste Land Development, Sewa Mandir
Soy Joseph	Administrative Assistant, TERI
Ipsita Kumar	Research Associate, TERI
Sanjeev Kumar	Scientist, Desert Regional Centre, Zoological Survey of India
V. Leela	National Law University, Jodhpur
Pankaj Madan	Advisor/Team Leader, Programme Coordination, KAS
I.P. Massey	Dean, Faculty of Law, National Law University, Jodhpur
Harsha Meenawat	Associate Fellow, TERI
Ligia Noronha	Executive Director, TERI
Pradeep Pagaria	Programme Coordinator, Society to Uplift Rural Economy
Anand Krishnan Plappally	IIT Rajasthan
Ravinder R. Raina	President–India Operations, Astonfield Renewables
P. Ranjan	National Law University, Jodhpur
T.S. Rathore	Scientist and Director, Arid Forest Research Institute
V.S. Shastri	Additional Dean, National Law University, Jodhpur
Amit Singh	Associate Professor, National Law University, Jodhpur
Genda Singh	Arid Forest Research Institute
Manvendra Singh	Former MP, Barmer, Rajasthan
M.S. Sisodia	Dean, Faculty of Science, Jai Narayan Vyas University, Jodhpur
Nidhi Srivastava	Associate Fellow, TERI
Shashi Tyagi	Secretary and Co-founder, GRAVIS

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