

**NATIONAL CONSULTATION ON
THE DRAFT INDICATORS FOR
ISSUES RELATED TO
DESERTIFICATION, LAND
DEGRADATION AND DROUGHT
(DLDD)**

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NATIONAL CONSULTATION ON THE DRAFT INDICATORS FOR ISSUES RELATED TO DESERTIFICATION, LAND DEGRADATION AND DROUGHT (DLDD)

The present document provides a list of indicators for issues related to desertification, land degradation and drought (DLDD) developed after the consultation with the representatives of line ministries/departments such as Environment & Forests, Agriculture, Water resources, Rural Development, Planning Commission, Indian Council of Agricultural Research, Soil & Land use Survey of India, Economic & Statistics, Indian Meteorological Department, Forest Survey of India, National Remote Research Centre, Indian Space Research Organization, Indian Council of Forestry Research & Education, Biodiversity Boards, UN Agencies (World Bank, UNDP, FAO), State line Departments and five SLEM-CPP Project Partners. It presents a set of indicators which were discussed with the subject experts representing national and regional institutes working in the field of Land degradation, Biodiversity conservation, Climate change adaptation and Policy.

For building national consensus on the selected draft indicators list subject experts and stakeholders are requested to provide their feedbacks and comments for further improvement of the indicators framework with respect to DLDD. The draft can be downloaded from the link provided at the home page of SLEM-CPP project website (<http://slem-cpp.icfre.gov.in>) hosted by ICFRE, Dehradun.

All the stakeholders/ groups/organizations are requested to please provide their comments and feedback in the space provided at the end of the document and can send it to the Project Director, SLEM-TFO, Indian Council of Forestry Research & Education, P.O. New Forest, Dehra Dun-248006, India by using email (e-mail: tpsingh@icfre.org) and by fax to # **91-135-2750296** on and before 15 days of the communication of the document. Please do not forget to write the name and contact details for further communication. In case, you provide comments on a separate sheet, please refer to the page number and the indicator number of the thematic area on which the comments are being made.

The SLEM-TFO will consolidate all the comments received during the consultation period for the finalization of the indicators.

DEVELOPMENT OF INDICATOR FRAMEWORK FOR ISSUES RELATED TO DESERTIFICATION, LAND DEGRADATION AND DROUGHT (DLDD)

Background

The international community has long recognized that desertification and droughts are major economic, social and environmental problem of concern to many countries of the world including India. Land degradation is our blind spot that could lead to new form of insecurity. Desertification is a major global concern affecting over 250 million Indian people directly and more than one fifth of the world population at risk, changing the traditional life style, culture and composition of rural societies. Nearly one third of the world's cropland has become unproductive and been abandoned in the past 40 years. About 75% of rangelands show various symptoms of desertification. In India, out of 328.8 million hectares of total geographical areas, about 223 million ha (69% of TGA) is under Drylands (arid, semi-arid and dry sub-humid). To combat desertification and land degradation and to mitigate the effects of drought, the Government of India (GOI) and Global Environmental Facility (GEF) are working together.

The Coordination of the Sustainable Land and Ecosystem Management (SLEM) programme is achieved by the Technical Facilitation Organisation (TFO) of ICFRE with the Medium Size Project (MSP) titled "Policy and Institutional reform by main streaming and up-sealing Sustainable Land and Ecosystem in India". The SLEM-TFO employ a multi-sectoral approach for Land Management, Bio-diversity Conservation and Climate change adaptation issues in selected states through five GEF Projects funded by the World Bank, UNDP and FAO.

One of the major objectives of the SLEM-TFO was to conceptualize a monitoring and evaluation (M&E) framework for ascertaining the effectiveness of SLEM implementation in India and for reporting to UN Convention to Combat Desertification (UNCCD). Thematic experts of the SLEM – TFO have reviewed published articles with respect to development of indicators as well as for finalization of indicators for Land Degradation, Biodiversity conservation Climate change adaptation and Policy. The finalized indicators were presented and discussed in number of meetings, workshops and with World Bank mission teams. The

suggestions made by the experts in various rounds of meetings and discussions were incorporated for up gradation of the final set of indicators.

Consultation process

As suggested by the World Bank two regional consultative workshops were organized at Hyderabad and Kolkata on 30th August, 2013 and 29th October, 2013 respectively for regional consultation representing southern and Eastern & north-eastern states. The Indicator workshops were held to build consensus among various departments/ministries and NGO's working on DLDD to generate a database of indicators to stream line UNCCD reporting, its utilization and reference to various ministries/departments of the states. During the two regional workshops, 60 experts representing different organizations including Departments of Forests, Agriculture, Animal, Husbandry, Irrigation, Ground Water, Rural Water Supply, Economic & Statistics, Indian Meteorological Department, State Biodiversity Board, ICAR institutes (NBSSLUP, CRIDA & CSSRI), ICRISAT, NABARD, NRSC, FSI, ICFRE institutes, World Bank and other stakeholders participated and shared their expertise for the refining, modification and suggested new possible indicators apart from the indicators presented by thematic experts of the SLEM – TFO, Dehradun. Based on the outcomes of the two regional workshops, a revised list of indicators on the all thematic areas were prepared and presented for the national consultation and consensus building at the National Workshop organized at New Delhi on 28th January 2014.

The national workshop brought out together the experts from various Ministries/Departments of Forests, Agriculture, Water Resources, Rural Development, Planning Commission, ICAR, National Rain-fed Area Authority, Bureau of Mines, Soil & Land use Survey of India, MoA, Indian Metrological Department, UN Agencies, ISRO, Ahmadabad, NRSC, Hyderabad, Forest Survey of India, Dehradun, ICFRE and its institutes, Forest Department, Uttarakhand, and SLEM-CPP project partners, NGO's and other stakeholders. The opinion and level of acceptance of the suggested indicators by the TFO during the consultative workshops were recorded on the score card sheets provided to the participants during the technical sessions. Based on the suggestions made by the participants, a tentative list of indicators on land degradation, biodiversity conservation, climate change adaptation, policy and socio-economic aspects were prepared for further national consultation (List enclosed).

INDICATORS FOR BIODIVERSITY CONSERVATION

S no.	Indicator	Source of information
1	Rate of forest land conversion to other land use	Ministry of Environment and Forest (MoEF)
2	Per capita forest land	MoEF
3	Forest fragmentation in Protected Areas	Forest Survey of India, Dehradun and Wildlife Institute of India, Dehradun
4	Protected area management effectiveness	Source (Wildlife Institute of India, Dehradun) (MoEF)
5	Forest area under reserve forest	MoEF, State forest departments
6	Area under shifting cultivation	State forest departments
7	Area under forest fire	State forest departments
8	Regeneration status of forest	State forest departments
9	Loss of key species	MoEF, ICAR institutes
10	Threat status of major species	IUCN, Wildlife Protection Act, 1972, CITES, MoEF
11	Number of threatened species under legal protection	MoEF
12	Population trends of conservation priority species	MoEF
13	Number of wild food species consumed	MoEF, ICAR
14	Number of indigenous crops/ land races	ICAR institutes
15	Number of indigenous domestic animal races	ICAR institutes
16	Invasive species infestation	State forest departments, ICAR, State agriculture departments
17	Indicator species or flagship species	State forest departments, MoEF
19	Crop and domestic animal genetic diversity	ICAR institutes (NBPGR, NBAGR)
20	Man-animal conflict	State forest departments, MoEF
21	Community Conservation reserves	State forest departments, MoEF

POLICY AND INSTITUTION AND SOCIO-ECONOMIC ASPECTS

Indicator	Data-source
POLICY AND INSTITUTION	
1. Existence of a land use policy,	Government/ planning commission
2. Number of programmes for treatment of land (state/ country)	MoA, MoRD, MoEF
3. Number of hectares of land treated under various programmes	MoA, MoRD, MoEF
4. Number of State which have a legislation for regulation of groundwater	Central Groundwater board
5. Number of institutions w.r.t land management (State level / National level)	Ministry of Panchayati Raj MoA, MoRD
6. Government expenditure on treatment of degraded land per year	MoA, MoRD, MoEF, Planning commission
7. Number of coarse cereals which are supported by Minimum Support Price (State level / National level)	MoA
8. Number of subsidies on power, irrigation water and fertilizers in a State	MoA, Ministry of power
SOCIO-ECONOMIC ASPECTS	
1. Population dependent on Agriculture and allied sectors (Number of cultivators, Number of Women farmers, Number of landless)	Census data
2. Population below poverty line (Rural and Urban)	-do-
3. Farm holding size (marginal, small & large)	Census data
4. Total livestock population (Population of smaller livestock)	Department of Animal Husbandry, Dairying and Fisheries. Livestock census

5. Annual requirement and Availability Of fodder (Dry and Green)	State Government data
6. Existence of a policy for Common property regime (CPR land)	State Government & Local land records
7. Rural literacy Rate	Census data
8. Number of women farmers who have got agriculture loan (indicator for land title to woman farmers)	Bank records
9. Number of small & marginal farmers who have obtained agriculture loan (indicator for clean land titling)	Bank records
10. Infant mortality rate	NFHS Data
11. Annual Rural out migration	Census data
12. Number of Government programmes for rural off- farm livelihood opportunities	State Agriculture and rural development departments

**FINAL INDICATORS OF LAND MANAGEMENT AND CLIMATE
CHANGE ADAPTATION**

Indicator	Data-source
Land Management	
1. Trends in access to safe drinking water in affected areas	
Water availability per capita (bcm)	CWC, MOWR
Sectoral usage of water (cum)	CWC, MOWR
GW use for various purposes (drinking, irrigation and others) (%)	CGWB
Trends of GW depletion (m)	CGWB
GW assessment at block level (%)	CGWB
Ground water quality (ec)	CGWB
2. Trends in land cover structure	
Land cover status (%)	NRSC
Land degradation (mha)	NBSSLUP, NRSC
Shift in LUC (% of TGA)	
3. Trends in land productivity or functioning of the land	
Productivity of crops, grasses, trees, scrubs and scrub vegetation (tons)	FSI, DES
Forest biomass (NPP through long term NDVI)	
4. Trends in carbon stocks above and below ground (oc %)	MoA, MoEF
Climate Change Adaptation	
1. Temperature, Rainfall, Evapo-transpiration and humidity etc.	IMD
2. Standard precipitation index	IMD
3. Length of growing period	MOA
4. Rainwater harvesting, recycling and GW recharge	NCIWRD, MOWR
5. Intensity, frequency and severity of drought and extreme events	IMD
6. Crop diversification, short duration crops and alternate land uses	DES, MOA

ABBREVIATIONS

MoEF	Ministry of Environment and Forest
IUCN	International Union for Conservation of Nature
WPA	Wildlife Protection Act
CITES	Convention on International Trade in Endangered Species
ICAR	Indian Council of Agriculture and Research
FSI	Forest Survey of India
WII	Wildlife Institute of India
NBPGR	National Bureau of Plant Genetic Resources
NBAGR	National Bureau of Animal Genetic Resources
CWC	Central Water Commission
MoWR	Ministry of water Resources
CGWB	Central Ground water Board
NRSC	National Remote Sensing Centre
NBSSLUB	National Bureau of Soil Survey and Land Use Planning
DES	Directorate of Economic and Statistics
IMD	Indian Meteorological Department
NCIWRD	National Commission on Integrated Water Resources Development
MoA	Ministry of Agriculture
MoRD	Ministry of Rural Development
NFHS	National Family Health Survey

