

Terms of Reference (ToR) for Comprehensive Impact Assessment of Watershed Projects sanctioned during 2005 to 2008

1. Background:

Over the past several decades, the challenges of arid region cultivation is effectively managed through Watershed Programmes. These programmes are focused mainly on soil & water conservation activities with a mix of technical innovations with top down as well as participatory approaches. These programmes have allowed for holistic approach with policy adoptions over these years, bringing in new methodologies, with greater community participation and social inclusiveness.

During these decades the watershed programmes were mainly implemented as special area development programmes viz. Desert Development Programmes (DDP), Drought Prone Area Programme (DPAP) and Integrated Watershed Development Programme (IWDP) across the country, as various approaches towards the common goal of Rainfed area development.

An evaluation of projects was carried out as per the suggestion of Parliamentary Standing Committee for Rural Development. The period of coverage was with respect to Watershed Programmes sanctioned during April 1998 to March 2002. In this study the DoLR has carried out assessments of impact of the projects by involving NIRD Hyderabad and other reputed institutions. An earlier study assessing impact of project sanctioned during April 1995 to March 1998 was commissioned by the MoRD in March 2001, associating several institutions across the country. These studies have helped in understanding the contribution of programme to the development of natural resources as well as socio-economic impact of the programme area.

Continuing with the Impact assessments studies carried out earlier, DoLR, propose to carry forward the process to its logical end. Accordingly it is proposed to study the impact of last batch of pre-2009 (pre-IWMP) projects implemented across the country. There are 7417 Projects sanctioned during this period. The programme wise break up is DDP 4484, DPAP 2516 & IWDP 417. It is proposed to study the impact of these projects at the national level with following specific objectives.

2. Objectives:

- i) To record the changes observed in **natural resources** in the project area. This include change in Land use & Land cover, Bio-mass, reclamation of waste-land, change in irrigated areas, change in ground water & surface water profiles and change in soil profiles (quality & reduction in run-off).
- ii) To assess the **change in agriculture sector** i.e. change in cropping pattern, area expansion, production, productivity of major crops, cropping intensity and diversity.
- iii) To assess the **change in economy** of the watershed community—i.e. change in Income, Employment, Skill enhancement if any & Expenditure Patterns.
- iv) To assess the **level of people's participation** in the project and its implications.
- v) To assess the **level & pattern of fund utilization** by states and explore reasons for huge unspent balances or low spending along with suggestions for improvement.
- vi) To assess the extent of development & level of **impact on common property resources development** and the system of sharing of usufructs there-off.
- vii) To assess the **post project maintenance of assets & institutions** generated under the project and suggest policy option for their sustenance.
- viii) To assess the **overall impact of the project** on the beneficiaries including the spillover effects (i.e. externalities & social impacts).
- ix) Provide an **overall national level summary** of findings and document the best practices observed. Indicate the lessons learnt with policy suggestions for future improvement.

3. Methodology :

(a) Sample size & area coverage :

- i) Impact study desired by the Ministry of Rural Development will be confined to the watershed projects implemented under the support of the DoLR funds.
- ii) The study will cover watersheds in all the 29 states and 20 % of the projects will be selected in proportionate to the sanctioned ones between 1stApril 2005 to 31stMarch 2008.
- iii) State wise sampling will be in proportion to the number of projects (DDP, DPAP, IWDP) sanctioned under each scheme.

- iv) The study will cover 20% of households from the sample villages.
- v) No less than 90 households will be covered from each of sub-watersheds/micro watersheds for statistical analysis purposes.
- vi) From each sub-watershed/micro three villages representing ridge, Middle and Valley portion will be selected for household surveys. From each village at least 30 households would be covered.
- vii) In addition to the above samples about 50% of samples households to be considered from outside the watersheds area, with similar topography & socio-economic features.
- viii) A comparative analysis of with & without project scenario (i.e. 45 households from untreated similar area).

(b) The analytical framework:

The study would follow the following analytical frame work:-

- i) Natural resources analysis: – Covering Land use, Land cover, Bio-mass, Hydrological & Soil profiles.
- ii) Agriculture sector analysis: - Area Production & productivity analysis, analysis of allied sectors like live stocks, horticulture etc.
- iii) Economic Analysis-Including Cost Benefit Ratio Analysis and Internal Rate of Return (IRR) Analysis. (Covering Income, Employment, Debt & Migration Analysis).
- iv) Institutional Analysis – Community Based Organizations (CBOs) & Project Implementation Agencies (PIAs), Non-Government Organizations (NGOs), Community at Large, other stakeholder if any.
- v) Systemic & Financial flow Analysis: – Administrative arrangement system analysis of fund flow analysis.
- vi) Community Involvement analysis: – How far the project is community driven than merely community centered.
- vii) Gender sensitivity and equity analysis: - i.e. Women Involvement in Planning and Implementation of the project & Distribution of investment returns by class, caste & gender.
- viii) Over all Analysis- A conclusive overall impact analysis of all the above sectors. Interlinking the Watershed Community & Natural Environment.

Ideally the analysis to be carried out in comparison with related baseline values (i.e. before the project status) collected during the initiation of project. In case of non-availability of such data, the analysis should be made in comparison with related normal values of the region. However in case of natural resource analysis i.e. for land use, land cover and bio-mass changes use of Remote Sensing Technology would be adopted for a pre & post project situational analysis. The analysis of natural resources, agricultural & allied sectors, and economic analysis should include both before and after and with & without, comparative analysis.

(c) Chapter Scheme of Contents:

The final report should contain the following:-

- i) Executive summary
- ii) Introduction, detailing the background of scheme & methodology of study, sample size & analytical frame work.
- iii) Impact on Natural Resources
- iv) Impact on Agriculture and Allied Sectors.
- v) Impact on Economic Aspects
- vi) Impact on Institutional Systems
- vii) Impact on the Society especially with Gender & Equity Analysis.
- viii) Over-all Impact- A summary of analysis.
- ix) Best practices, Limitation if any & lessons learnt with suggestions for future alternative policy linkages.

4. Qualifications for empanelment of Evaluating Agency:-

The requisite qualifications for empanelment of the Evaluating Agencies as circulated by this Department to SLNAs (in addition to the provisions in ToR) would be as under:-

- a. The names of leading and reputed organizations (including NGOs) with required infrastructure, expertise and experience should only be included.
- b. Project implementing Agencies (PIA) should not be empaneled for the State in which it is working as PIA.
- c. As per the common guidelines, the panel is to include only institutions and agencies- not individuals.

- d. The individual evaluators or officials deputed by the enlisted organizations/NGOs, should have academic qualification of graduation in any of the discipline namely agriculture, soil sciences, forestry, rural development and related areas or have undergone specialized training in any these discipline and have worked for a minimum period of ten years in related disciplines in any Organization of repute or under the Central/State/Government in the concerned Departments.

5. Institutional Arrangements for the study:-

The agency to be deployed for the purpose would take a premier lead role in coordinating the task at the National Level. The agency would also be responsible for the preparation of consolidated report at the national level. The responsibility to compile or coordinate the state level reports would also be with this agency. The agency would in turn could sub-contract separate institutes/agencies for carrying out the studies & preparation of report at the state level, as per the need and operational requirement. The lead agency at the national level would be of reputed credentials with established infrastructure facilities to facilitate supervise and coordinate the work.

A) National Agency (NA):-

The Lead National Agency will anchor the study. DoLR will be coordinating the study along with this agency. The role of National Agency would be:

- (a) Organizing National Workshop for;
 - I) Evolving a standard format for reporting and identify key indicator for comprehensive study of impact of investment.
 - II) Developing the financial norms for the study.
 - III) Planning for overall impact evaluation strategy.
- (b) Scrutiny and consolidation of study findings and suggestions of policy implication.
- (c) Coordinating and supervising the state-wise comprehensive studies.
- (d) Organize National sharing workshop (Sharing of lesson and draw up strategies for better result).

- (e) Bring out the consolidated report.

B) Collaborating Institutions:-

For the collaborating institutional arrangement, preference will be given to Govt. institutions having requisite experience in the field to be selected as collaborating institutions. In the absence of the same, leading academic/research institutions and Non-Government Organizations (NGOs) of repute and experience also can be considered. These organizations will perform the following tasks:

- (a) Assist National Agency in Carrying out the comprehensive study of impact of investment in watershed projects as per the design, indicators, tools and instruments developed by national Institute. State Level Agency would carry-out field surveys and prepare a comprehensive study report based on the common minimum framework developed by National Institute.
- (b) Organize regional workshops to share the findings of the study and incorporate the feedback.
- (c) Collection and documentation of best practices.
- (d) Any other work assigned by National Agency related to the study.

6. Deliverables

- (a) Inception report
- (b) State-wise status report on impact of investment in watershed projects.
- (c) National consolidated comprehensive study report on watershed project and performance

7. Time Duration of the Project

The project to be completed within 9 months from the date of initiation/contract.

8. The coverage of the study:

- (a) The study covers projects sanctioned during the period 2005- 2008. The breakup of projects sanctioned and completed are as follows.

Name of the Scheme	No. of Projects Sanctioned (2005 to Feb, 2009)	No. of Projects Sampled (20%)
Integrated Wastelands Development Programme (IWDP)	417	83
Desert Development Programme (DDP)	4484	897
Drought Prone Area Programme (DPAP)	2516	503
Total	7417	1483

9. BUDGET

A detailed budget would be prepared by the Lead National Agency, including the following items:-

A. For Lead Agency

Sl. No.	Item of Expenditure	Amount (Rs)
1.	(a) Human Resource / Manpower (b) Travel	
	Sub Total	
2.	Organizing Workshop	
3.	Communication	
4.	Institutional Charges (if any)	
5.	Misc. Expenditure (not above 5% of total)	
6.	Tax (as applicable)	
	Total (A)	

B. Detailed Cost Estimation of per Watershed cost (for collaborating agencies):-

Sl. No.	Item of Expenditure	Amount (Rs)
1.	(a) Human Resource/ Manpower (b) Travel cost	
	Sub Total	
2	Organizing Workshop (lump sum)	

3.	Communication	
4.	Report preparation	
5.	Institutional Charges (if any)	
6.	Misc. Expenditure	
7.	Tax (as applicable)	
	Total (B)	
	Grand Total of Table (A + B)	

10. An Indicative list of Indicators to be considered for Impact Assessment is provided as Annexure (Annexure-1)

Indicators to be considered for Impact Assessment (An Indicative List)

1. Natural resource Indicators

- Increase in the crop yield: Increase in the cropped area
Adoption of new package of practices
Soil & moisture conservation measures
- Cropping pattern diversified: Change in the cropping pattern and diversification
Changes into commercial, food, fodder, crops
Change over to agro -horticulture, agro-forestry
Mono-cropping to intercropping / mixed cropping
- Ground water recharged: Increase in the cropping intensity
Changes in the cropping pattern
Diversified into high Value crops
Increase in the irrigated area.
Improvement in the Ground water level and yield
- Productivity in Non-arable: Extent of reduction in wastelands / degraded lands
Extent of forest cover/ plantations / silvipasture
Improvement in biodiversity / canopy cover
Fallow lands brought under cultivation
- Soil erosion reduced: Reduction in soil loss & run off
Soil erosion and silt deposition reduced
Positive changes with respect to soil nutrients and salinity
Extent of crop failure
- Livestock improvement: Increase in no. of improved cattle, buffaloes, etc.
Increased milk production / dairy activities
Fuel wood and fodder self sufficiency
- CPR's / Gomals: Fodder development / silvipasture
- Surface /Ground Water resources: Increase in number of water bodies
Increased surface water supply
Level and quality of ground water
Seasonal to perennial transformation of water levels in surface water

- **Environmental Aspects:** Extent of use of pastures/forests/other common properties
Industrial activity (including mining)
Rare/endemic/endangered species of Flora and Fauna.
Indigenous knowledge, artifacts, traditional values,
Indigenous people. Wild life sanctuary, National park.
Cultural Heritage/archaeological important site.

2. SOCIAL:

- Literacy rate, reduction in school dropouts, increase in girl's enrolment in schools
- Housing pattern (with or without electricity, sanitation, furnishing, toilets, kitchen, pucca-hut, etc.
- Drinking water facilities, time spent in fetching water
- Participation of women, landless and weaker sections in project.
- Reduction in migration, impact on landless families
- Employment opportunities – On farm and off farms
- Impact of trainings, awareness of the program, shramadan
- Women Empowerment – Decision making, capacity, collective decisions
- Self-sufficiency – Food, fodder, fuel, drinking water etc.
- Peoples' participation in planning and implementation of their choice - Soil & water conservation, structures, IGA, etc.
- Initiation, implementation of agro based / income generating activities
- Involvement in CPR development – Planning, implementation, monitoring and O&M
- Control on free grazing, tree felling, disputes, alcoholism
- Health centers, dispensaries, Vet clinics, Family planning, Mortality rates

3. ECONOMIC:

- Household Income – Sources of Income, expenditure, savings, investments, etc.
Improvement in housing pattern, household assets
- Living Standards – Poverty level, Food Consumption, Food security
- Increase in wage rates, No of working days, etc.
- Changes in land prices
- Economic assets – Plantations, agro-forestry,
- Improved farming inputs, equipments, fertilizers / pesticides usage
- Increased savings of SHG members

- Increased access to credit / government grants / subsidies etc.
- Changes in crop production (agricultural crops, horticulture, floriculture, etc), yield/ha
- Income generating activities, type, alternative occupational programmes
- Livestock, dairy activities, kitchen garden, Market facilities, agricultural produce, Storage facilities

4. INSTITUTIONAL:

- Formation & Functioning of CBOs (SHGs/CIGs/AGs/UGs/VWCs) - Numbers, Member composition, Activities, Involvement in decision making, Book keeping, etc.
- NGO, Staff Status – Functioning, Sensitization and mobilization, Formation of CBOs and facilitation for better functioning, Role in Entry Point Activities, Action Plan preparation, Approval and Implementation, Collection of baseline survey data, Beneficiary Selection, Capacity building / Training programmes, etc.
- IGA programmes – Credit linkages, micro enterprises
- Line department role, activities and their linkages – ZP, TP, GP, RMKs
- Linkages among different groups viz., SHGs, AGs, UGs, VWCs, CIGs, etc.
- Convergence with other Developmental Programmes – (MNREGA, JSYS, etc.)
- Role, responsibility and cooperation among Govt., NGOs, and other institutions.